CERATIZIT GROUP



The Catalogue

TEAM CUTTING TOOLS

CUTTING SOLUTIONS BY CERATIZIT · KOMET · WNT · KLENK

CERATIZIT is a high-tech engineering group specialised in tooling and hard material technologies.

Tooling the Future

www.ceratizit.com

CERATIZIT Group
With passion and pioneering spirit for carbide

CERATIZIT has been a pioneer in the field of demanding carbide solutions for machining and wear protection for more than 95 years, controlling the entire value chain from powder to the finished end product.

With exclusive access to the highest quality carbide raw materials, CERATIZIT offers more than 130 carbide grades and as a full-range supplier manufactures highly specialized cutting tools, indexable inserts, rods made of hard materials and wear parts.

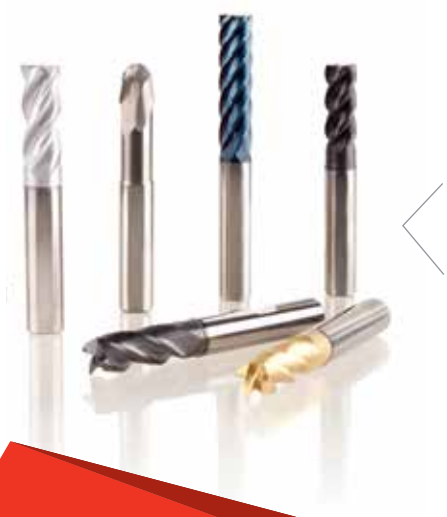
With more than 9,000 employees worldwide at 34 production sites and a sales network of more than 70 branches, the CERATIZIT Group is a global player in the carbide industry. As a technology leader, CERATIZIT continually invests in research and development and owns more than 1,000 patents.

Under the motto „Tooling the Future," our innovative materials and applications help our customers develop a variety of machines and products that shape our immediate environment and are part of our everyday lives.

The goal remains the same: CERATIZIT provides competitive advantages – through new technological standards, innovative materials and coatings as well as unique carbide products.









Welcome!



It couldn't be easier

Ordering via the Online Shop

http://cuttingtools.ceratizit.com



On-site technical support

Your Local Technical Sales Engineer

Your customer number

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Team Cutting Tools

The new full-range supplier in machining

Four experts, one expertise: Cutting Solutions by CERATIZIT, KOMET, WNT and KLENK bundle their expertise and, with Team Cutting Tools, offer a uniquely broad know-how in the field of machining. Partners and customers benefit from a highly attractive, holistic service promise:
One of the largest product ranges on the market. An enormously efficient distribution. Leading expertise in future technologies from digitization to nanotechnology. Deep industry expertise based on many years of experience. All under one roof.

Solutions for the metalworking industry



Automotive



Aerospace



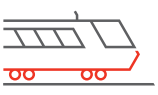
Heavy Duty machining



Energy



Medical



Rail industry



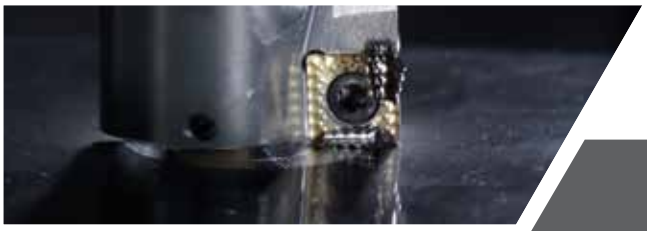
General Engineering



CUTTING SOLUTIONS BY CERATIZIT

COMPETENCE SUPPLIER IN THE DEVELOPMENT AND MANUFACTURE OF INDUSTRIAL SOLUTIONS

Cutting Solutions by CERATIZIT is a leader in the development and manufacturing of industrial solutions and has decades of experience in the manufacture of tungsten carbide tools and inserts.



KOMET

AN INNOVATIVE PIONEER IN HOLE PRODUCTION FOR OVER A CENTURY

KOMET is a global technology leader in high-precision drilling, reaming and threading. Like other members of the CERATIZIT group, KOMET has also established itself as a manufacturer of high-quality cutting tools by developing innovative products.



WNT

STRONG SERVICE, EXTENSIVE PORTFOLIO

Cutting edge quality tooling for every application from the machine spindle to the machine table: With this impressive range of high quality products combined with industry leading service and outstanding logistical support, WNT always delivers the highest cutting efficiency to the customer.



KLENK

PREMIUM CUTTING TOOLS FOR THE AEROSPACE AND ASTRONAUTICAL INDUSTRIES

KLENK focuses primarily on the aerospace industry and is a leader in rotary tools for drilling, milling, reaming and countersinking. Many of these products are custom-made for customers worldwide and are predestined for machining CFRP, titanium, aluminum and steel components.

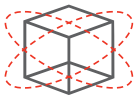
Tool + Service = Solution



On the latest technology

Technical Training

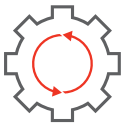
Our engineers are provided with constant training to keep them up to speed on all technical matters. We will gladly share this knowledge with you. Use our Service for the further education of your metal cutting technicians in the Technical Centre.



Tool data always at your fingertips

Cutting data and CAD models for day-to-day assistance

In addition to detailed cutting data we also offer 2D and 3D models to assist you with your tool management or for simulating an operation. All data for this Service is available for you in our Online Shop.



Bringing the old back to life

Regrinding, not replacing

Your used precision tool is in the best possible hands with us. We return your tool to you with the original finish, coating and geometry – as good as new and ready for use back in the machine.



We come full circle

Our recycling service

Our joint contribution for the good of the environment: we take back your carbide and process it appropriately. You receive a credit from us that you can redeem with your next tool purchase.



Intelligent Machining

Industry 4.0 with ToolScope

ToolScope is a modular assistance system for monitoring and optimizing machining processes. With it, we are the only company that offers not only the tools, but also the expertise and capabilities to master and improve processes throughout the entire machining process.



Competent advice also available on call

Application engineers with know-how

An application engineer is always available by phone to answer your application-specific questions. Even if they are not on-site with you, our experts are always ready to answer your questions.



Your competent partner on-site

Technical advice from your Technical Sales engineer

There is a simple reason why we like to support our customers: we want the best for them. And the best solutions are developed when we work together. Thanks to many years of practical experience our experts are able to quickly recognize your individual needs and assist you in optimizing your productivity.



Ordered quickly, Available now, Delivered immediately



It couldn't be easier

Ordering via the Online Shop

In the Online Shop you can select and order your tool with a mouse click, 24 hours a day, 7 days a week. All your transactions including those in the past can be viewed clearly and easily in the online shop. Register and use our Service: **cuttingtools.ceratizit.com**



Stock around the clock!

Tool Supply 24/7

If you install a Tool-O-Mat it means that we take on all the procurement and stocking costs for you. You have 100 % availability of all tools at all times and without expenditure.



From single items to large orders!

There are no minimum order quantities

No matter which tool you need, we promise you quick and uncomplicated delivery. Even if you only order one item! We do not have minimum order quantities.



Your tool is ready!

High product availability thanks to state-of-the-art logistics

Why own stock? We take care of that for you! With the cutting-edge logistics center of the cutting tools industry, we guarantee that your order will be delivered promptly.



Where is my order right now?

Order Delivery Tracking

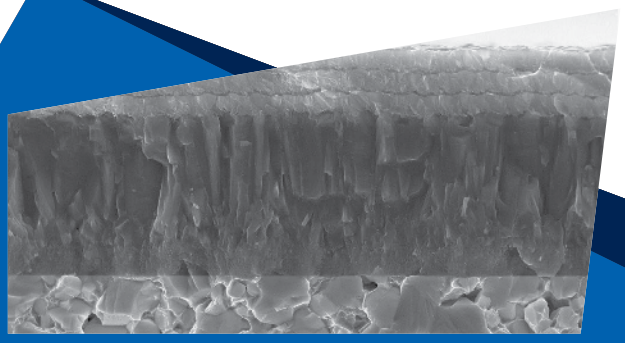
For those who do not want to lose sight of their order: With the shipment number you can track the current status of your order online – no matter how your order was placed.

Dragonskin by CERATIZIT
The latest generation of coating technology

Decades of experience coupled to consistent and constant development are in the unique Dragonskin coating technology. Thanks to our innovative design and expertise in powder metallurgy, we – and above all you – achieve an unmatched level of performance in machining.

Like the Dragon‘s invulnerability, Dragonskin Coating Technology offers the highest levels of protection against wear and is designed with its impermeable layer for the most adverse requirements. The result is an extremely hard and durable surface with a satin finish.

The perfect combination of state-of-the-art high-performance substrates and new coating structures enable high cutting speeds and increased process reliability. A proven – up to 80 % – increased performance through the latest Dragonskin coating technology offers you a significant competitive advantage.



Dragonskin Coating

DRAGONSKIN

Dragonskin – The coatings for the highest performance

The product category Dragonskin is intended to help make tools easily recognizable and quick to find using CERATIZIT's high-performance coating technology. All products that are marked with the Dragonskin icon represent unmatchable performance, maximum tool life and maximum process reliability.

Legendary Performance



Dragonskin

Stable production processes in a networked world

From tool management and the CAD / CAM system to simulation software and the machine itself – all systems involved in modern production processes can and want to deal more and more with digital data. To meet this demand, we are able to provide you with all the necessary production-relevant data that your production systems require for a smooth process.
All tool dimensions & data are in accordance with ISO 13399 in the product tables, enabling the digitized future.

Digital Tool Data

Technology Data

- Recommended use: Secure tool planning information on selecting the ideal tools for the relevant application
- Cutting data: optimal starting values for the machining of different materials

CAD Data

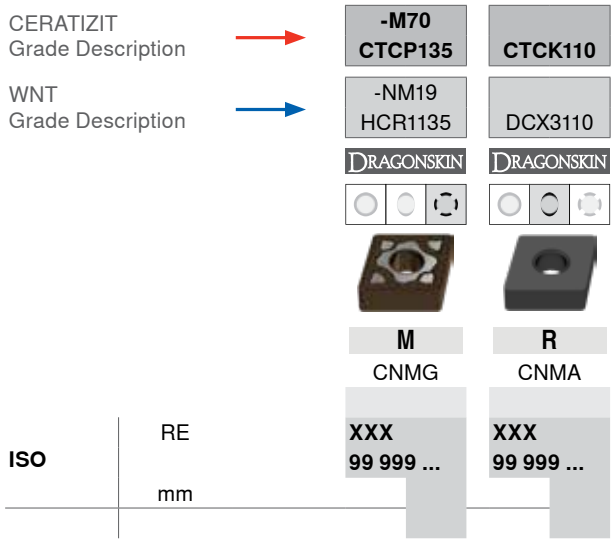
- All tool data is created in accordance with the current standards ISO 13399 / DIN 4003
- 3D solid models in STEP and STL formats
- 2D drawings as DXF
- Usable in all major CAD / CAM systems
- Perfect for integration in tool management systems
- Compatible with the CNC machine simulation to avoid collisions, tool breakage and damage to machinery

Direct and Free of Charge

- Recommended use and cutting data can be found in detail in the catalogue
- All information in digital form can be found on the website to download: **cuttingtools.ceratizit.com**
- Password protected customer area for unrestricted access to all data on the website

Simplified ordering with dual grade descriptions

To simplify identification, the inserts are labeled with the grade descriptions of both CERATIZIT and WNT. Even if these differ, it is always the same, high quality product meaning you can continue to work with the familiar grade description. The same applies to chip breakers, some of which also carry dual designations.



The Catalogue For Workpiece Clamping

We offer our extensive clamping technology program in a separate catalogue. In this you will find the comprehensive vice program, the mechanical (MNG) and pneumatic (PNG) zero-point clamping systems, as well as magnetic clamping technology (MST).



Clamping Systems Overview

Single clamping vice
- power booster systems NCG, HDG and H5G
- fixed jaw as reference
- high repeatability



Centric vice
- symmetrical clamping
- very good accessibility for 5-sided machining
- part datum always centered
- high repeatability



Multiple vice
- Faster set up times
- multifunctional use
- optimum utilization of the machine table
- high repeatability



Clamping variants
- Zero point clamping system
- Zero point clamping system grid plate



Clamping Towers
- Double sided clamping tower
- Triangular clamping tower
- Cruciform clamping tower
- Cube clamping tower



Solid drilling and bore machining
1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

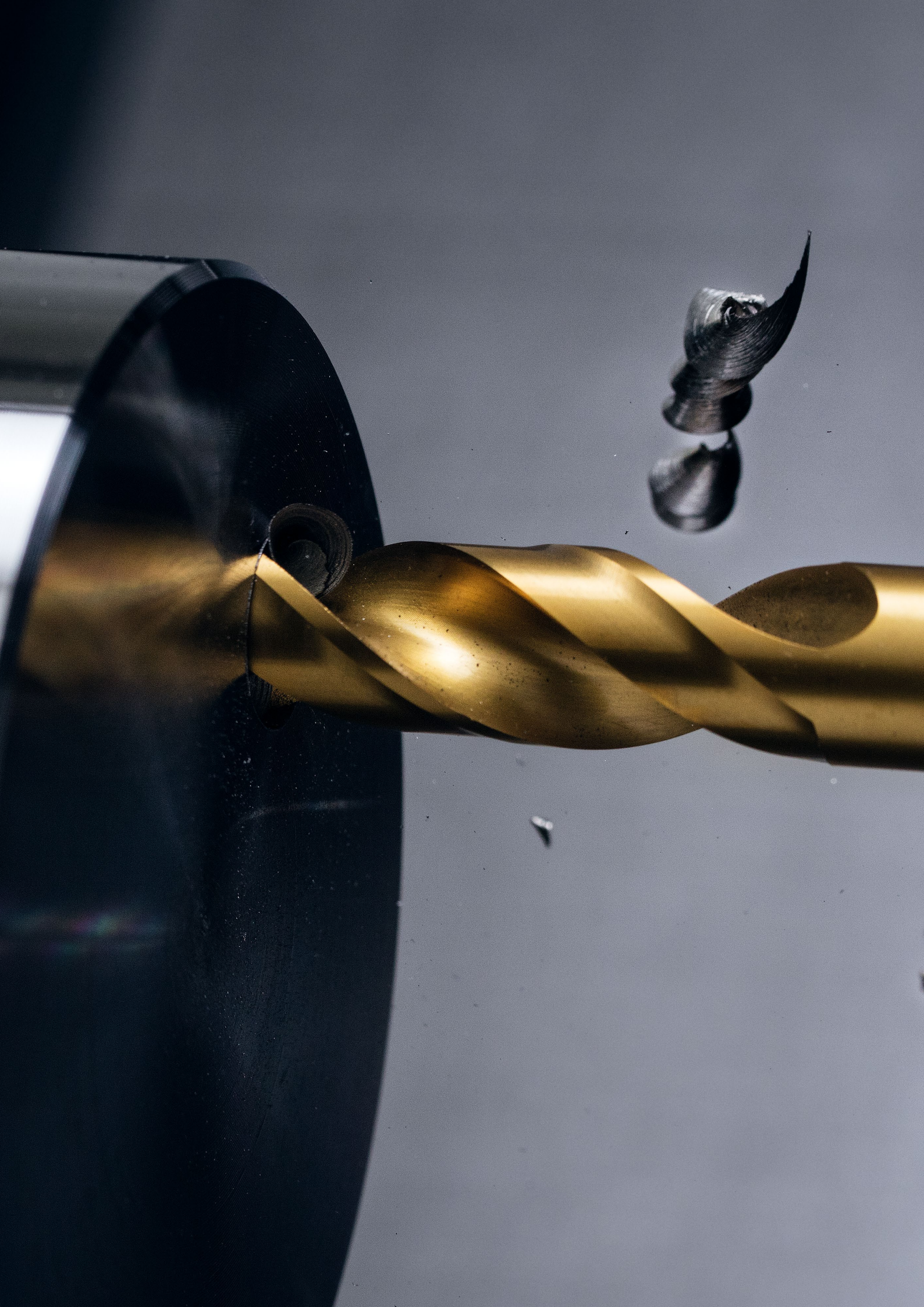
Threading
6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

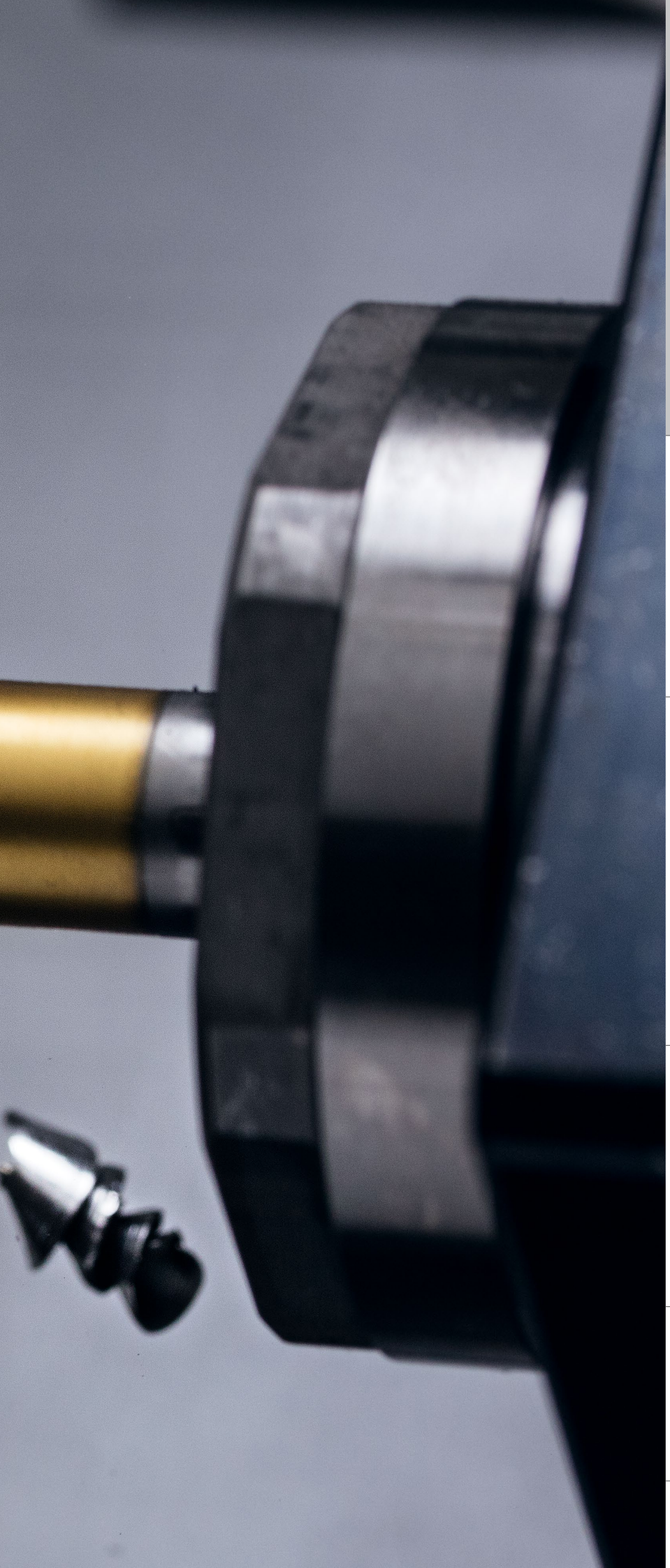
Turning
9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling
13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping
16 Adapters
17 Accessories

18 Material examples and article no. index





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder	3
List of contents	4–7
Product programme	8–44
Technical Information:	
Cutting Data	45–52
Feedrate Values	53
Coatings	54

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

Shank











Version



Int. coolant supply



self-centering

● = **Main Application**

○ = Extended application

Toolfinder

	Tool type	Material/ Coating	Description	DIN 1897	DIN 338	DIN 340	Series 1	Series 2	Series 3
				3xD	5xD	10xD	> 10xD		
Steel – Universal	**VX**	HSS-E TiN	▲ universal high-performance drill ▲ shank DIN 1835A ▲ self centering	8	16				
	UNI	HSS-E PM TiN	▲ wear-resistant due to HSS-E-PM and TiN coating ▲ universal high-performance drill	9–14	17–22				
	UNI	HSS-E TiN	▲ as for type VX ▲ without standard shank to DIN 1835 A ▲ available as a set	9–14	17–22	26–28			
	N	HSS vap.	▲ stable twist drill ▲ also suitable for portable drills ▲ available in set	9–14	17–22				
	WT	HSS-E vap.	▲ for high alloy steel and special alloys (Hastelloy, Inconel, Nimonic)	9–14					
	WT	HSS-E TiN	▲ as type WT HSS-E vap. ▲ higher wear resistance due to coating	9–14					
	WTL-L	HSS F.-nit	▲ left-hand cutting ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands	15	23				
	WNXi	HSS-E	▲ very good chip evacuation with thro' coolant ▲ for long chipping materials to 1000 N/mm²		25				
	WNXi	HSS-E TiN	▲ as type WNXi HSS-E ▲ higher wear resistance due to coating		25				
	WTL	HSS-E F.-nit	▲ special flute profile with large chip gullet ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands		17–22	26–28			
	WTL	HSS-E TiN	▲ as WTL HSS-E, but higher v_c and wear resistance due to coating ▲ suitable for steel and cast iron		17–22				
	WTL	HSS-E TiCN	▲ as WTL TiN, but higher v_c and wear resistance possible with high alloy steels		23				
	WTL	HSS F.-nit	▲ special flute profile with large chip gullet ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands			26–28	29	30	30
	WTL	HSS TiN	▲ as WTL HSS, but higher v_c and wear resistance due to coating			26–28			
	WNX	HSS-E	▲ wide chip flutes for long-chipping materials ▲ self-centring	9–14					
	NC	HSS	▲ suitable for use with drill bushes ▲ very good chip evacuation with thro' coolant			25			
	NC	HSS TiAlN	▲ as NC, but higher v_c and wear resistance due to coating			25			
Stainless steel	**VA**	HSS-E	▲ specialist for stainless and acid-resistant materials ▲ special geometry	9–14	17–22				
Non-ferrous metals	**W**	HSS	▲ specialist for non-ferrous metals		17–22				
	WTW	HSS	▲ for non-ferrous metals to 500 N/mm² ▲ for deep holes			26–28			

HSS Drills Overview

3xD without thro‘ coolant

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
	VX	HSS-E TiN	118°	2–20	●	●	●	●	○			■		8
	UNI	HSS-E PM TiN	130°	1–14	●	○	●	○	○			■		9–14
	UNI	HSS-E TiN	118°	1–14	●	●	●	●	○	○		■		9–14
	N	HSS vap.	118°	0,4–20	●		●	○				■		9–14
	VA	HSS-E	130°	1–12	○	●	○	○	○				□	9–14
	WNX	HSS-E	130°	1–20	●	○	○	●	○				□	9–14
	WT	HSS-E vap.	130°	0,4–25	●	○	○	○	○	○		■		9–14
	WT	HSS-E TiN	130°	1–20	●	○	○	○	○	○		■		9–14
	WTL-L	HSS F-nit	130°	1–19	●	○	○	●		○	left-hand cutting	■		15

5xD without thro‘ coolant

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
	VX	HSS-E TiN	118°	2–20	●	●	●	●	○			■		16
	UNI	HSS-E PM TiN	130°	1–14	●	○	●	○	○			■		17–22
	UNI	HSS-E TiN	118°	0,9–14	●	●	●	●	○			■		17–22
	N	HSS vap.	118°	0,2–20	●		●	○				■		17–22
	VA	HSS-E	130°	1–12	○	●	○	○	○				□	17–22
	WTL	HSS-E F-nit.	130°	1–16	●	○	○	○				■		17–22
	WTL	HSS-E TiN	130°	1–16	●	○	○	○				■		17–22
	WTL	HSS-E TiCN	130°	3–12	●	○						■		23
	W	HSS	130°	0,20–20				●					□	17–22
	WTL-L	HSS F-nit.	130°	1–16	●		○	○			left-hand cutting	■		23

HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials	coated	uncoated	WNT \ Performance
5xD with thro' coolant													
	WNXi	HSS-E	130°	5–20	●	●	●	○	○	E		□	25
	WNXi	HSS-E TiN	130°	5–20	●	●	●	○	○	E	■		25
up to 10xD without thro' coolant													
	UNI	HSS-E TiN	118°	1–14	●	○	●	○		A	■		26–28
	WTL	HSS TiN	130°	1–14	●		●	●		A	■		26–28
	WTL	HSS-E F-nit.	130°	1–12	●	●	●	●		A	■		26–28
	WTL	HSS F-nit.	130°	1–14	●		●	●		A	■		26–28
	WTW	HSS	130°	1–14				●		A		□	26–28
up to 10xD with thro' coolant													
	NC	HSS	130°	3–13	●	○	●	○	○	A		□	25
	NC	HSS TiAlN	130°	3–13	●	○	●	○	○	A	■		25
over 10xD without thro' coolant													
	WTL	HSS Series 1	130°	2–13	●	○	●	●		A	■		29
	WTL	HSS Series 2	130°	2–13	●	○	●	●		A	■		30
	WTL	HSS Series 3	130°	2,5–13	●	○	●	●		A	■		30
Mini-drill													
	N	HSS-E PM	118°	0,15–1,45	●	●	●	●	○	A		□	31
Twist Drill Sets													
	N	HSS vap.	118°	1–10	●		●			A	■		24
	UNI	HSS-E TiN	118°	1–10	●	●	●	●	○	A	■		24

HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
NC Spot Drill														
	NC-A	HSS	90°	3–20	●	○	●	○			A ~B		□	35–37
	NC-A	HSS TiN	90°	3–20	●	○	●	○			A ~B	■		35+36
	NC-A	HSS	120°	3–20	●	○	●	○			A ~B		□	35+36
	NC-A	HSS TiN	120°	3–20	●	○	●	○			A ~B	■		35+36
Centre drills														
	ZB	HSS	118°	0,5–6,3	●	○	●	○				DIN 333 – Form A/B/R	□	37–39
	ZB	HSS TiN	118°	0,5–6,3	●	○	●	○				DIN 333 – Form A	■	38
	ZB	HSS-E	118°	0,5–6,3	●	○	●	○				DIN 333 – Form A	□	38
Core drills														
	N	HSS	120°	3,8–12	●	○	●	●	○		A	3 flute	□	40
Stepped drills														
	SB	HSS vap.	118°	2,5–10,2	●	○	●	○			A	Countersinking angle 90°	■	41
	SB	HSS	118°	2,5–10,2	●	○	●	○			A	Countersinking angle 90°	□	41
	SB	HSS vap.	118°	3,2–10,5	●	○	●	○			A	Countersinking angle 90°	■	41
	SB	HSS	118°	3,2–10,5	●	○	●	○			A	Countersinking angle 90°	□	41
	SB	HSS vap.	118°	3,4–11	●	○	●	○			A	Countersinking angle 180°	■	42
	SB	HSS	118°	3,4–11	●	○	●	○			A	Countersinking angle 180°	□	42
	SB	HSS vap.	118°	3,3–21	●	○	●	○				Countersinking angle 60°	■	44

HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■ uncoated □	WNT \ Performance
Drills with Morse taper													
3xD													
	WT	HSS-E vap.	**130°**	10–30	●	○	○	○	○		MK	■	31
5xD													
	N	HSS vap.	**118°**	10–60	●		●	○			MK	■	32
	WTL	HSS-E F.-nit	**130°**	10–27	●	○	○	○			MK	■	32
10xD													
	N	HSS vap.	**118°**	10–50	●		●	○			MK	■	33
	WTL	HSS-E F.-nit	**130°**	10–26	●	●	●	●			MK	■	33
above 10xD													
	WTL	HSS Series 1	**130°**	10–30	●	○	●	●			MK	■	34
	WTL	HSS Series 2	**130°**	10–30	●	○	●	●			MK	■	34
Core drills													
	N	HSS vap.	**120°**	10–30	●	○	●	●	○		MK	3 flute ■	40
Stepped drills													
	SB	HSS vap.	**118°**	5,5–22	●	○	●	○			MK	Countersinking angle 180° ■	43

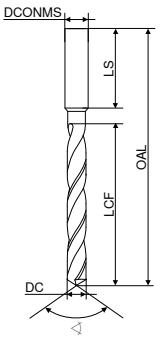
High-performance twist drills similar to DIN 1897, extra-short

- shank to DIN 1835 A
- special point thinning
- very good centering behaviour
- 4 facet
- highest Performance

≤ 3xD

VX

TiN





118°

HSS-E

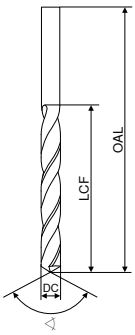
DC h8	OAL	LCF	DCONMS h6	LS	T2 Article no. 10 122 ...	
mm	mm	mm	mm	mm	EUR	
2,00	44	12	3	28	9,01	020
2,10	44	12	3	28	9,91	021
2,20	45	13	3	28	10,81	022
2,30	45	13	3	28	10,81	023
2,40	46	14	3	28	11,34	024
2,50	46	14	3	28	9,76	025
2,60	46	14	3	28	11,34	026
2,70	48	16	3	28	11,87	027
2,80	48	16	3	28	11,87	028
2,90	48	16	3	28	11,87	029
3,00	48	16	3	28	10,81	030
3,10	50	18	4	28	10,81	031
3,20	50	18	4	28	10,81	032
3,30	50	18	4	28	10,92	033
3,40	52	20	4	28	10,92	034
3,50	52	20	4	28	10,40	035
3,60	52	20	4	28	11,23	036
3,70	52	20	4	28	11,76	037
3,80	54	22	4	28	11,45	038
3,90	54	22	4	28	11,76	039
4,00	54	22	4	28	9,59	040
4,10	66	22	6	36	9,59	041
4,20	66	22	6	36	10,02	042
4,30	68	24	6	36	10,59	043
4,40	68	24	6	36	11,87	044
4,50	68	24	6	36	9,69	045
4,60	68	24	6	36	12,72	046
4,70	68	24	6	36	12,82	047
4,80	70	26	6	36	12,82	048
4,90	70	26	6	36	12,82	049
5,00	70	26	6	36	10,81	050
5,10	70	26	6	36	12,82	051
5,20	70	26	6	36	13,03	052
5,30	70	26	6	36	13,35	053
5,40	72	28	6	36	14,52	054
5,50	72	28	6	36	11,45	055
5,55	72	28	6	36	14,52	555
5,60	72	28	6	36	14,52	056
5,70	72	28	6	36	14,52	057
5,80	72	28	6	36	14,52	058
5,90	72	28	6	36	14,52	059
6,00	72	28	6	36	11,97	060
6,10	75	31	8	36	18,65	061
6,20	75	31	8	36	18,65	062
6,30	75	31	8	36	22,68	063
6,40	75	31	8	36	19,18	064
6,50	75	31	8	36	14,20	065
6,60	75	31	8	36	22,99	066
6,70	75	31	8	36	22,99	067
6,80	78	34	8	36	24,69	068
6,90	78	34	8	36	25,01	069
7,00	78	34	8	36	18,87	070
7,10	78	34	8	36	27,77	071
7,20	78	34	8	36	27,66	072
7,30	78	34	8	36	27,66	073
7,40	78	34	8	36	27,77	074
7,45	78	34	8	36	27,77	745
7,50	78	34	8	36	19,93	075
7,60	81	37	8	36	27,87	076
7,70	81	37	8	36	31,05	077
7,80	81	37	8	36	31,05	078
7,90	81	37	8	36	31,05	079
8,00	81	37	8	36	20,46	080
8,10	87	37	10	40	34,12	081
8,20	87	37	10	40	34,12	082
8,30	87	37	10	40	34,12	083
8,40	87	37	10	40	34,12	084
8,50	87	37	10	40	23,10	085
8,60	91	40	10	40	35,61	086
8,70	91	40	10	40	35,61	087
8,80	91	40	10	40	35,61	088
8,90	91	40	10	40	35,61	089
9,00	91	40	10	40	25,44	090
9,10	91	40	10	40	43,76	091
9,20	91	40	10	40	43,76	092
9,30	91	40	10	40	43,76	093
9,35	91	40	10	40	43,76	935
9,40	91	40	10	40	43,76	094
9,50	91	40	10	40	30,52	095
9,60	93	43	10	40	32,96	096
9,70	93	43	10	40	32,96	097
9,80	93	43	10	40	32,96	098
9,90	93	43	10	40	32,96	099
10,00	93	43	10	40	29,24	100
10,10	100	43	12	45	45,99	101
10,20	100	43	12	45	43,13	102
10,30	100	43	12	45	44,72	103
10,40	100	43	12	45	47,58	104
10,50	100	43	12	45	42,07	105
10,60	100	43	12	45	51,08	106
10,70	104	47	12	45	46,63	107
10,80	104	47	12	45	44,82	108
10,90	104	47	12	45	65,81	109
11,00	104	47	12	45	42,07	110
11,10	104	47	12	45	41,76	111
11,50	104	47	12	45	43,76	115
11,70	104	47	12	45	50,02	117
11,80	104	47	12	45	52,46	118
11,90	108	51	12	45	65,92	119
12,00	108	51	12	45	50,44	120
12,10	111	51	16	48	37,20	121
12,20	111	51	16	48	55,42	122
12,30	111	51	16	48	68,14	123
12,40	111	51	16	48	81,18	124
12,50	111	51	16	48	52,78	125
12,60	111	51	16	48	107,00	126
12,70	111	51	16	48	116,60	127
12,80	111	51	16	48	55,32	128
12,90	111	51	16	48	81,60	129
13,00	111	51	16	48	56,70	130
13,50	114	54	16	48	83,72	135
14,00	114	54	16	48	83,72	140
14,50	116	56	16	48	107,00	145
15,00	116	56	16	48	100,90	150
15,50	118	58	16	48	110,20	155
16,00	118	58	16	48	105,60	160
16,50	126	60	20	50	164,30	165
17,00	126	60	20	50	164,30	170
17,50	128	62	20	50	164,30	175
18,00	128	62	20	50	164,30	180
18,50	130	64	20	50	164,30	185
19,00	130	64	20	50	164,30	190
19,50	132	66	20	50	164,30	195
20,00	132	66	20	50	145,20	200

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c Page 46

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
							
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
0,40		19	2,5					4,02	004 [1]					6,74	00400 [1]		
0,50		20	3,0					3,01	005 [1]					4,98	00500 [1]		
0,55		21	3,5											11,66	00550 [1]		
0,60		21	3,5					3,70	006 [1]					5,93	00600 [1]		
0,65		22	4,0											6,46	00650 [1]		
0,70		23	4,5					3,44	007 [1]					5,44	00700 [1]		
0,75		23	4,5											5,66	00750 [1]		
0,80		24	5,0					2,64	008 [1]					4,73	00800 [1]		
0,85		24	5,0											5,34	00850 [1]		
0,90		25	5,5					2,64	009 [1]					4,73	00900 [1]		
0,95		25	5,5											5,34	00950 [1]		
1,00		26	6,0	7,90	010 [2]	4,75	010	1,46	010 [1]	2,01	010	3,06	010	3,36	01000 [1]	4,66	010
1,05		26	6,0											4,52	01050 [1]		
1,10		28	7,0	7,90	011 [2]	4,75	011	1,54	011 [1]	2,01	011	3,35	011	3,21	01100 [1]	4,86	011
1,15		28	7,0											3,60	01150 [1]		
1,20		30	8,0	8,10	012 [2]	4,87	012	1,54	012 [1]	1,83	012	3,32	012	3,13	01200 [1]	4,54	012
1,25		30	8,0											3,60	01250 [1]		
1,30		30	8,0	8,53	013 [2]	5,12	013	1,54	013 [1]	1,83	013	3,22	013	3,21	01300 [1]	4,86	013
1,35		32	9,0											3,60	01350 [1]		
1,40		32	9,0	7,81	014 [2]	4,68	014	1,54	014 [1]	1,83	014	3,22	014	3,21	01400 [1]	4,86	014
1,45		32	9,0											3,60	01450 [1]		
1,50		32	9,0	7,37	015 [2]	4,42	015	1,21	015 [1]	1,83	015	2,95	015	2,98	01500 [1]	4,54	015
1,55		34	10,0											4,68	01550 [1]		
1,60		34	10,0	7,72	016 [2]	4,62	016	1,42	016 [1]	2,23	016	3,19	016	2,90	01600 [1]	4,40	016
1,65		34	10,0											3,85	01650 [1]		
1,70		34	10,0	7,81	017 [2]	4,68	017	1,42	017 [1]	2,23	017	3,16	017	2,87	01700 [1]	4,33	017
1,75		36	11,0											3,55	01750 [1]		
1,80		36	11,0	7,72	018 [2]	4,62	018	1,50	018 [1]	2,23	018	3,16	018	2,92	01800 [1]	4,46	018
1,83		36	11,0											5,25	01830 [1]		
1,85		36	11,0											3,33	01850 [1]		
1,90		36	11,0	7,72	019 [2]	4,62	019	1,42	019 [1]	2,23	019	3,13	019	2,92	01900 [1]	4,46	019
1,95		38	12,0											5,19	01950 [1]		
2,00		38	12,0	6,46	020 [2]	3,87	020	0,93	020 [1]	2,23	020	2,66	020	2,57	02000 [1]	3,78	020
2,05		38	12,0											4,68	02050 [1]		
2,10		38	12,0	7,90	021 [2]	4,75	021	1,35	021 [1]	2,23	021	2,95	021	2,84	02100 [1]	4,26	021
2,15		40	13,0											4,40	02150 [1]		
2,20		40	13,0	7,90	022 [2]	4,75	022	1,35	022 [1]	2,23	022	2,98	022	3,31	02200 [1]	4,66	022
2,25		40	13,0											3,55	02250 [1]		
2,30		40	13,0	6,65	023 [2]	4,02	023	1,42	023 [1]	2,23	023	3,11	023	3,06	02300 [1]	4,66	023
2,35		40	13,0											4,98	02350 [1]		
2,38	3/32	43	14,0	7,32	238 [2]	4,37	238										
2,40		43	14,0	7,95	024 [2]	4,80	024	1,42	024	2,23	024	3,16	024	3,18	02400	4,82	024
2,45		43	14,0											3,78	02450		

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

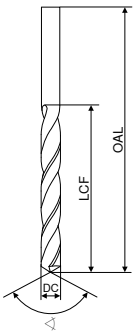
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI	UNI	N	VA	WNX	WT	WT
TiN	TiN	vap.			vap.	TiN



◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC_{h8}	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
2,50		43	14,0	6,94	025 [2]	4,21	025	1,06	025	2,23	025	2,95	025	2,72	02500	4,13	025
2,55		43	14,0											4,98	02550		
2,60		43	14,0	8,20	026 [2]	4,95	026	1,46	026	2,23	026	3,16	026	3,18	02600	4,82	026
2,65		43	14,0											4,98	02650		
2,70		46	16,0	8,73	027 [2]	5,26	027	1,46	027	2,23	027	3,19	027	3,33	02700	5,11	027
2,75		46	16,0											4,98	02750		
2,78	7/64	46	16,0	8,48	278 [2]	5,09	278										
2,80		46	16,0	8,10	028 [2]	4,87	028	1,46	028	2,23	028	3,35	028	3,33	02800	5,11	028
2,85		46	16,0											4,95	02850		
2,90		46	16,0	8,62	029 [2]	5,19	029	1,46	029	2,23	029	3,48	029	3,33	02900	5,11	029
2,95		46	16,0											3,55	02950		
3,00		46	16,0	7,32	030 [2]	4,37	030	1,06	030	2,23	030	3,16	030	2,92	03000	4,35	030
3,05		49	18,0											3,67	03050		
3,10		49	18,0	7,81	031 [2]	4,68	031	1,46	031	2,23	031	3,62	031	3,33	03100	5,01	031
3,15		49	18,0											5,34	03150		
3,17	1/8	49	18,0	7,72	317 [2]	4,62	317										
3,20		49	18,0	7,37	032 [2]	4,42	032	1,35	032	2,23	032	3,11	032	3,18	03200	4,73	032
3,25		49	18,0											3,70	03250		
3,30		49	18,0	7,37	033 [2]	4,42	033	1,42	033	2,23	033	3,35	033	3,44	03300	5,11	033
3,35		49	18,0											4,95	03350		
3,40		52	20,0	8,53	034 [2]	5,12	034	1,80	034	2,23	034	3,82	034	3,41	03400	5,11	034
3,45		52	20,0											3,70	03450		
3,50		52	20,0	7,37	035 [2]	4,42	035	1,21	035	2,23	035	3,73	035	3,36	03500	4,63	035
3,55		52	20,0											3,78	03550		
3,57	9/64	52	20,0	8,34	357 [2]	5,02	357										
3,60		52	20,0	9,79	036 [2]	5,88	036	1,80	036	2,57	036	3,82	036	3,44	03600	5,11	036
3,70		52	20,0	8,48	037 [2]	5,09	037	1,80	037	2,57	037	3,82	037	3,67	03700	5,50	037
3,75		52	20,0											3,85	03750		
3,80		55	22,0	9,01	038 [2]	5,42	038	1,80	038	2,57	038	4,05	038	3,55	03800	5,23	038
3,85		55	22,0											5,93	03850		
3,90		55	22,0	10,21	039 [2]	6,15	039	1,80	039			4,05	039	3,64	03900	5,50	039
3,95		55	22,0											6,00	03950		
3,97	5/32	55	22,0	9,19	397 [2]	5,50	397										
4,00		55	22,0	8,34	040 [2]	5,02	040	1,27	040	3,81	040	4,02	040	3,60	04000	4,73	040
4,05		55	22,0											4,23	04050		
4,10		55	22,0	9,54	041 [2]	5,75	041	1,54	041	3,81	041	4,08	041	3,74	04100	5,23	041
4,15		55	22,0											5,96	04150		
4,20		55	22,0	8,34	042 [2]	5,02	042	1,50	042	3,81	042	3,73	042	3,67	04200	5,23	042
4,25		55	22,0											6,49	04250		
4,30		58	24,0	9,50	043 [2]	5,71	043	2,41	043	3,81	043	4,20	043	3,88	04300	5,81	043
4,35		58	24,0											6,51	04350		
4,37	11/64	58	24,0	12,82	437 [2]	7,68	437										
4,40		58	24,0	10,21	044 [2]	6,15	044	2,41	044			4,20	044	4,04	04400	5,96	044

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

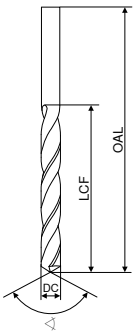
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI	UNI	N	VA	WNX	WT	WT
TiN	TiN	vap.			vap.	TiN



◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC $_{h8}$	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
4,45		58	24,0											6,70	04450		
4,50		58	24,0	9,50	045 [2]	5,71	045	1,54	045	4,01	045	4,20	045	3,85	04500	4,93	045
4,55		58	24,0											6,51	04550		
4,60		58	24,0	9,54	046 [2]	5,75	046	2,44	046	4,01	046	4,36	046	4,28	04600	6,49	046
4,65		58	24,0											5,83	04650	6,59	465
4,70		58	24,0	10,70	047 [2]	6,40	047	2,44	047	4,01	047	4,66	047	4,42	04700	6,59	047
4,75		58	24,0											5,83	04750		
4,76	3/16	62	26,0	10,70	476 [2]	6,40	476										
4,80		62	26,0	10,81	048 [2]	6,51	048	2,44	048	4,14	048	4,87	048	4,63	04800	6,56	048
4,85		62	26,0											5,34	04850		
4,90		62	26,0	10,92	049 [2]	6,57	049	2,44	049	4,14	049	5,09	049	5,08	04900	6,56	049
4,95		62	26,0											7,61	04950		
5,00		62	26,0	9,19	050 [2]	5,50	050	1,64	050	4,14	050	4,50	050	4,13	05000	5,34	050
5,05		62	26,0											8,99	05050		
5,10		62	26,0	10,12	051 [2]	6,09	051	2,49	051	4,14	051	5,21	051	5,50	05100	6,76	051
5,15		62	26,0											9,54	05150		
5,16	13/64	62	26,0	12,08	516 [2]	7,24	516										
5,20		62	26,0	10,92	052 [2]	6,57	052	2,49	052	4,70	052	5,28	052	6,59	05200	6,87	052
5,25		62	26,0											7,80	05250		
5,30		62	26,0	12,40	053 [2]	7,47	053	2,49	053	4,70	053	5,44	053	7,25	05300	6,99	053
5,35		66	28,0											12,93	05350		
5,40		66	28,0	12,08	054 [2]	7,28	054	2,84	054			5,71	054	7,80	05400	7,72	054
5,45		66	28,0											12,50	05450		
5,50		66	28,0	10,37	055 [2]	6,22	055	2,16	055	4,70	055	5,63	055	5,25	05500	5,75	055
5,55		66	28,0											14,20	05550	7,48	555
5,56	7/32	66	28,0	11,34	556 [2]	6,80	556										
5,60		66	28,0	12,40	056 [2]	7,47	056	2,84	056	4,73	056	5,99	056	8,69	05600	7,48	056
5,70		66	28,0	13,25	057 [2]	7,94	057	2,84	057	4,73	057	6,04	057	8,84	05700	7,48	057
5,75		66	28,0											10,43	05750		
5,80		66	28,0	12,72	058 [2]	7,65	058	2,84	058	4,73	058	6,14	058	8,99	05800	7,48	058
5,85		66	28,0											15,15	05850		
5,90		66	28,0	13,99	059 [2]	8,39	059	2,84	059	4,73	059	6,20	059	9,41	05900	7,70	059
5,95	15/64	66	28,0	21,20	595 [2]	12,82	595							9,54	05950		
6,00		66	28,0	11,23	060 [2]	6,69	060	2,16	060	5,10	060	5,48	060	5,25	06000	6,03	060
6,05		70	31,0											15,15	06050		
6,10		70	31,0	13,15	061 [2]	7,88	061	3,06	061	5,10	061	6,46	061	9,92	06100	9,66	061
6,15		70	31,0											11,02	06150		
6,20		70	31,0	13,15	062 [2]	7,88	062	3,06	062	5,10	062	6,54	062	10,43	06200	9,95	062
6,25		70	31,0											13,03	06250		
6,30		70	31,0	15,05	063 [2]	9,00	063	3,06	063	5,10	063	6,59	063	11,13	06300	10,14	063
6,35	1/4	70	31,0	13,78	635 [2]	8,29	635							7,80	06350		
6,40		70	31,0	13,88	064 [2]	8,36	064	3,17	064	5,82	064	6,93	064	11,34	06400	10,19	064
6,45		70	31,0											14,73	06450		

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

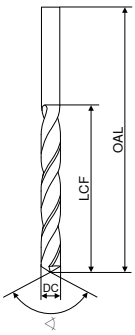
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
							
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2
DC h8	Article no. 10 113 ...	Article no. 10 107 ...	Article no. 10 105 ...	Article no. 10 130 ...	Article no. 10 106 ...	Article no. 10 109 ...	Article no. 10 110 ...
mm / inch / mm / mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
6,50	13,15 065 2)	7,88 065	2,56 065	5,82 065	6,56 065	6,14 06500	7,55 065
6,55						15,58 06550	
6,60	14,41 066 2)	8,70 066	3,17 066	5,82 066	7,14 066	11,87 06600	10,17 066
6,65						16,42 06650	
6,70	15,90 067 2)	9,53 067	3,48 067	5,82 067	7,38 067	12,08 06700	10,34 067
6,75	19,60 675 2)	11,66 675				12,19 06750	
6,80	16,01 068 2)	9,58 068	4,02 068	6,02 068	8,23 068	12,50 06800	11,02 068
6,85						17,60 06850	
6,90	15,79 069 2)	9,44 069	4,32 069	6,02 069	8,44 069	12,72 06900	11,02 069
7,00	14,62 070 2)	8,80 070	3,14 070	6,02 070	7,14 070	6,99 07000	9,04 070
7,05						19,71 07050	
7,10	17,70 071 2)	10,70 071	4,47 071	6,02 071	9,95 071	12,93 07100	12,19 071
7,14 9/32	23,52 714 2)	14,09 714					
7,20	18,23 072 2)	11,02 072	4,54 072	6,41 072	10,43 072	13,46 07200	12,19 072
7,25						16,01 07250	
7,30	19,60 073 2)	11,76 073	4,67 073		11,02 073	13,56 07300	12,29 073
7,35						17,80 07350	
7,40	18,34 074 2)	11,13 074	5,01 074		12,08 074	13,78 07400	12,29 074
7,50	15,26 075 2)	9,17 075	3,48 075	6,41 075	7,83 075	8,13 07500	9,46 075
7,60	23,85 076 2)	14,31 076	5,55 076		11,34 076	14,41 07600	13,68 076
7,70	25,75 077 2)	15,48 077	5,55 077	6,75 077	11,66 077	15,05 07700	13,68 077
7,75						18,65 07750	
7,80	19,71 078 2)	11,87 078	5,55 078		11,66 078	15,37 07800	13,78 078
7,90	27,55 079 2)	16,54 079	5,63 079	6,75 079	11,13 079	15,68 07900	13,78 079
7,94 5/16	18,87 794 2)	11,34 794					
8,00	18,23 080 2)	11,02 080	3,56 080	7,28 080	8,00 080	7,61 08000	9,83 080
8,05						25,12 08050	
8,10	23,32 081 2)	13,99 081	6,05 081	7,28 081	12,29 081	16,42 08100	13,88 081
8,15						25,12 08150	
8,20	24,27 082 2)	14,52 082	6,48 082	7,28 082	12,62 082	17,17 08200	13,88 082
8,25						19,50 08250	
8,30	25,44 083 2)	15,26 083	6,57 083	7,28 083	12,93 083	18,12 08300	14,09 083
8,40	24,38 084 2)	14,73 084	6,74 084	8,06 084	13,46 084	18,97 08400	14,09 084
8,50	21,20 085 2)	12,82 085	5,12 085	8,06 085	9,73 085	9,16 08500	11,76 085
8,55						28,71 08550	
8,60		14,31 086	6,74 086	8,06 086	13,78 086	19,50 08600	14,41 086
8,70		16,42 087	6,88 087	8,06 087	14,20 087	20,46 08700	14,41 087
8,73 11/32	33,49 873 2)	20,13 873					
8,75						25,12 08750	
8,80	26,60 088 2)	15,90 088	6,95 088		15,90 088	21,30 08800	14,52 088
8,90		20,34 089	7,23 089		10,43 089	21,73 08900	15,26 089
8,95						27,87 08950	
9,00	21,52 090 2)	13,03 090	4,67 090	9,24 090	9,51 090	9,74 09000	11,87 090

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

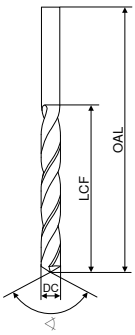
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD





	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2
DC h8	Article no. 10 113 ...	Article no. 10 107 ...	Article no. 10 105 ...	Article no. 10 130 ...	Article no. 10 106 ...	Article no. 10 109 ...	Article no. 10 110 ...
mm / inch	EUR	EUR	EUR	EUR	EUR	EUR	EUR

DC h8 mm	DC inch	OAL mm	LCF mm	10 113 ... EUR		10 107 ... EUR		10 105 ... EUR		10 130 ... EUR		10 106 ... EUR		10 109 ... EUR		10 110 ... EUR	
9,05		84	40,0											22,99	09050		
9,10		84	40,0			17,17	091	8,11	091			16,54	091	22,26	09100	18,87	091
9,20		84	40,0			17,27	092	8,76	092	9,74	092	17,80	092	22,99	09200	18,87	092
9,25		84	40,0											25,85	09250		
9,30		84	40,0	24,38	093 2)	14,73	093	9,14	093	9,74	093	12,29	093	24,16	09300	18,87	093
9,40		84	40,0			20,03	094	9,29	094			12,29	094	24,48	09400	18,87	094
9,50		84	40,0	23,85	095 2)	14,31	095	7,80	095	9,86	095	11,66	095	10,60	09500	15,58	095
9,60		89	43,0			20,99	096	9,81	096			18,54	096	24,48	09600	19,60	096
9,65		89	43,0											27,87	09650		
9,70		89	43,0			20,34	097	9,95	097			18,54	097	24,79	09700	19,60	097
9,75		89	43,0											27,87	09750		
9,80		89	43,0	28,40	098 2)	17,17	098	10,49	098	10,81	098	18,87	098	25,12	09800	20,99	098
9,90		89	43,0			21,73	099	10,49	099			19,50	099	25,44	09900	20,99	099
10,00		89	43,0	23,42	100 2)	14,09	100	5,63	100	11,23	100	10,43	100	12,50	10000	14,52	100
10,05		89	43,0											33,06	10050		
10,10		89	43,0			20,99	101	11,45	101					33,91	10100		
10,20		89	43,0	29,67	102 2)	17,91	102	9,95	102	11,23	102	18,54	102	19,50	10200	20,34	102
10,25		89	43,0											29,78	10250		
10,30		89	43,0			19,50	103	12,19	103					31,47	10300		
10,40		89	43,0			22,79	104	12,93	104					37,20	10400		
10,50		89	43,0	28,19	105 2)	17,07	105	10,49	105	12,08	105	15,48	105	21,73	10500	19,40	105
10,60		95	47,0					15,58	106					37,41	10600		
10,70		95	47,0					16,01	107					37,41	10700		
10,75		95	47,0											32,53	10750		
10,80		95	47,0					16,42	108			20,56	108	36,35	10800	43,56	108
10,90		95	47,0					16,42	109					37,20	10900		
11,00		95	47,0	31,26	110 2)	18,65	110	10,49	110	12,50	110	18,34	110	22,99	11000	19,40	110
11,10		95	47,0					16,42	111					42,18	11100		
11,11	7/16	95	47,0	36,77	111 2)	22,15	111										
11,20		95	47,0					17,27	112					44,19	11200		
11,30		95	47,0					17,60	113					46,74	11300		
11,40		95	47,0					17,60	114					47,05	11400		
11,50		95	47,0	36,04	115 2)	21,83	115	11,02	115	14,31	115	23,85	115	25,85	11500	20,56	115
11,60		95	47,0					17,60	116								
11,70		95	47,0					17,60	117	15,48	117			47,05	11700		
11,75		95	47,0											51,19	11750		
11,80		95	47,0					18,12	118			29,67	118	47,05	11800	24,48	118
11,90		102	51,0					18,34	119								
12,00		102	51,0	35,29	120 2)	21,30	120	13,46	120	15,58	120	23,85	120	30,52	12000	23,85	120
12,10		102	51,0					18,76	121					46,74	12100		
12,20		102	51,0					18,76	122					47,05	12200		
12,25		102	51,0											51,93	12250		
12,30		102	51,0	59,77	123 2)	35,51	123	18,97	123			29,67	123	36,14	12300	36,45	123

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

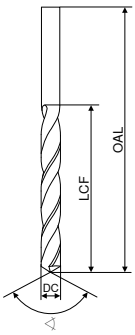
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI	UNI	N	VA	WNX	WT	WT
TiN	TiN	vap.			vap.	TiN



◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC_{h8}	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
12,40		102	51,0					18,97	124					47,05	12400		
12,50		102	51,0	38,68	125 2)	23,21	125	13,99	125			24,27	125	31,16	12500	24,48	125
12,60		102	51,0					19,40	126					32,00	12600		
12,70		102	51,0	49,39	127 2)	29,46	127	18,54	127					32,00	12700		
12,80		102	51,0					20,13	128			36,35	128	47,48	12800	46,21	128
12,90		102	51,0					20,99	129					47,48	12900		
13,00		102	51,0	38,68	130 2)	23,21	130	14,20	130			26,81	130	33,06	13000	25,12	130
13,20		102	51,0					21,73	132					47,48	13200		
13,30		107	54,0					22,05	133								
13,50		107	54,0	41,12	135 2)	24,79	135	16,42	135			33,49	135	35,71	13500	27,34	135
13,80		107	54,0					22,68	138			43,24	138			29,04	138
14,00		107	54,0	51,29	140 2)	30,94	140	16,74	140			31,16	140	35,71	14000	28,40	140
14,50		111	56,0					18,54	145			39,43	145	44,82	14500	28,93	145
14,75		111	56,0					28,61	147								
14,80		111	56,0									54,89	148				
15,00		111	56,0					18,34	150			36,57	150	42,82	15000	29,89	150
15,25		115	58,0					31,69	152					94,74	15250		
15,50		115	58,0					19,93	155			55,74	155	54,58	15500	39,10	155
15,75		115	58,0													40,90	157
16,00		115	58,0					20,13	160			44,09	160	44,62	16000	38,57	160
16,50		119	60,0					24,06	165			45,25	165	72,17	16500	57,87	165
17,00		119	60,0					24,48	170			45,68	170	62,32	17000	55,85	170
17,50		123	62,0					25,44	175			46,84	175	72,81	17500	53,41	175
17,75		123	62,0													64,85	177
18,00		123	62,0					25,65	180			47,16	180	68,36	18000	61,04	180
18,50		127	64,0					28,30	185					87,01	18500	68,99	185
19,00		127	64,0					29,78	190			48,86	190	72,81	19000	67,30	190
19,50		131	66,0					31,69	195					84,99	19500	75,56	195
19,75		131	66,0													76,94	197
20,00		131	66,0					31,69	200			51,40	200	74,39	20000	72,06	200
20,50		136	68,0											118,70	20500		
21,00		136	68,0											114,50	21000		
21,50		141	70,0											121,90	21500		
22,00		141	70,0											122,90	22000		
22,20		141	70,0											129,30	22200		
23,00		146	72,0											136,80	23000		
24,00		151	75,0											145,20	24000		
25,00		151	75,0											166,40	25000		

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

1) uncoated
2) self-centering

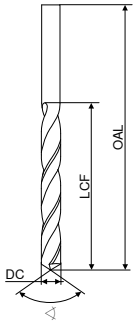
→ v_c Page 46+47

High-performance twist drills similar to DIN 1897, extra-short

▲ left-hand cutting

≤ 3xD

WTL-L





DC h8	OAL	LCF	T2 Article no. 10 112 ...	
mm	mm	mm	EUR	
1,0	26	6	3,67	010 1)
1,1	28	7	4,07	011 1)
1,2	30	8	3,78	012 1)
1,3	30	8	3,78	013 1)
1,4	32	9	3,57	014 1)
1,5	32	9	3,16	015 1)
1,6	34	10	3,52	016 1)
1,7	34	10	3,38	017 1)
1,8	36	11	3,36	018 1)
1,9	36	11	3,21	019 1)
2,0	38	12	2,79	020 1)
2,1	38	12	3,02	021 1)
2,2	40	13	3,38	022 1)
2,3	40	13	3,52	023 1)
2,4	43	14	3,60	024 2)
2,5	43	14	3,06	025 2)
2,6	43	14	3,67	026 2)
2,7	46	16	3,70	027 2)
2,8	46	16	3,90	028 2)
2,9	46	16	4,07	029 2)
3,0	46	16	3,41	030 2)
3,1	49	18	4,28	031 2)
3,2	49	18	3,70	032 2)
3,3	49	18	4,28	033 2)
3,4	52	20	4,35	034 2)
3,5	52	20	4,21	035 2)
3,6	52	20	4,35	036 2)
3,7	52	20	4,48	037 2)
3,8	55	22	4,73	038 2)
3,9	55	22	4,73	039 2)
4,0	55	22	4,73	040 2)
4,1	55	22	5,44	041 2)
4,2	55	22	4,78	042 2)
4,3	58	24	6,59	043 2)
4,4	58	24	6,59	044 2)
4,5	58	24	5,37	045 2)
4,6	58	24	6,83	046 2)
4,7	58	24	6,83	047 2)
4,8	62	26	6,99	048 2)
4,9	62	26	6,99	049 2)
5,0	62	26	6,00	050 2)
5,1	62	26	7,06	051 2)
5,2	62	26	7,20	052 2)
5,3	62	26	7,35	053 2)
5,4	66	28	7,35	054 2)
5,5	66	28	6,80	055 2)
5,6	66	28	7,58	056 2)
5,7	66	28	7,72	057 2)
5,8	66	28	7,90	058 2)
5,9	66	28	8,06	059 2)
6,0	66	28	7,20	060 2)
6,1	70	31	8,61	061 2)
6,2	70	31	8,61	062 2)
6,3	70	31	8,61	063 2)
6,4	70	31	8,95	064 2)
6,5	70	31	7,58	065 2)
6,6	70	31	9,09	066 2)
6,7	70	31	9,72	067 2)
6,8	74	34	10,24	068 2)
6,9	74	34	12,50	069 2)
7,0	74	34	8,27	070 2)
7,2	74	34	16,42	072 2)
7,3	74	34	16,42	073 2)
7,4	74	34	17,07	074 2)
7,5	74	34	8,95	075 2)
7,7	79	37	17,60	077 2)
8,0	79	37	9,09	080 2)
8,1	79	37	18,34	081 2)
8,2	79	37	18,87	082 2)
8,3	79	37	18,87	083 2)
8,5	79	37	10,24	085 2)
8,6	84	40	19,71	086 2)
8,7	84	40	19,71	087 2)
8,8	84	40	20,66	088 2)
9,0	84	40	11,34	090 2)
9,5	84	40	12,93	095 2)
9,7	89	43	22,99	097 2)
10,0	89	43	13,03	100 2)
10,1	89	43	29,57	101 2)
10,2	89	43	21,30	102 2)
10,5	89	43	20,66	105 2)
11,0	95	47	21,30	110 2)
11,5	95	47	23,85	115 2)
11,8	95	47	31,05	118 2)
12,0	102	51	24,16	120 2)
12,5	102	51	25,85	125 2)
12,8	102	51	33,49	128 2)
13,0	102	51	28,83	130 2)
14,0	107	54	35,29	140 2)
14,5	111	56	44,19	145 2)
15,0	111	56	38,79	150 2)
16,0	115	58	46,74	160 3)
18,0	123	62	115,50	180 3)
19,0	127	64	150,50	190 3)

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	○

1) uncoated
2) nitrided chamfer
3) vaporised

→ v_c Page 47

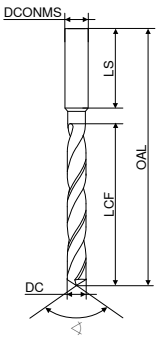
High-performance twist drill similar to DIN 338, short

- with shank to DIN 1835 A
- special point thinning
- 4 facet
- highest Performance
- very good centering behaviour

≤ 5xD

VX

TiN





HSS-E

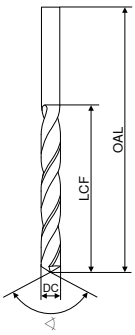
DC h8	OAL	LCF	DCONMS h6	LS	T2 Article no. 10 124 ...	
mm	mm	mm	mm	mm	EUR	
2,00	56	24	3	28	11,02	020
2,10	56	24	3	28	12,93	021
2,20	59	27	3	28	12,93	022
2,30	59	27	3	28	12,93	023
2,40	62	30	3	28	12,93	024
2,50	62	30	3	28	12,93	025
2,60	62	30	3	28	12,93	026
2,70	65	33	3	28	12,93	027
2,80	65	33	3	28	12,93	028
2,90	65	33	3	28	12,93	029
3,00	65	33	3	28	12,29	030
3,10	68	36	4	28	13,99	031
3,20	68	36	4	28	13,99	032
3,30	68	36	4	28	13,99	033
3,40	71	39	4	28	13,99	034
3,50	71	39	4	28	13,99	035
3,60	71	39	4	28	15,26	036
3,70	71	39	4	28	15,26	037
3,80	75	43	4	28	15,26	038
3,90	75	43	4	28	15,26	039
4,00	75	43	4	28	15,26	040
4,10	87	43	6	36	18,23	041
4,20	87	43	6	36	18,97	042
4,30	91	47	6	36	18,23	043
4,40	91	47	6	36	18,23	044
4,50	91	47	6	36	18,23	045
4,60	91	47	6	36	20,46	046
4,65	91	47	6	36	20,46	465
4,70	91	47	6	36	20,46	047
4,80	96	52	6	36	20,46	048
4,90	96	52	6	36	20,46	049
5,00	96	52	6	36	22,57	050
5,10	96	52	6	36	22,57	051
5,20	96	52	6	36	22,57	052
5,30	96	52	6	36	23,85	053
5,40	101	57	6	36	23,85	054
5,50	101	57	6	36	22,57	055
5,55	101	57	6	36	25,65	555
5,60	101	57	6	36	25,65	056
5,70	101	57	6	36	25,65	057
5,80	101	57	6	36	25,65	058
5,90	101	57	6	36	25,65	059
6,00	101	57	6	36	24,48	060
6,10	107	63	8	36	29,46	061
6,20	107	63	8	36	29,46	062
6,30	107	63	8	36	29,46	063
6,40	107	63	8	36	29,46	064
6,50	107	63	8	36	29,46	065
6,60	107	63	8	36	31,05	066
6,70	107	63	8	36	31,05	067
6,80	113	69	8	36	31,05	068
6,90	113	69	8	36	31,05	069
7,00	113	69	8	36	31,05	070
7,10	113	69	8	36	32,22	071
7,20	113	69	8	36	32,22	072
7,30	113	69	8	36	32,22	073
7,40	113	69	8	36	32,22	074
7,50	113	69	8	36	32,22	075
7,55	119	75	8	36	33,70	755
7,60	119	75	8	36	33,70	076
7,70	119	75	8	36	33,70	077
7,80	119	75	8	36	33,70	078
7,90	119	75	8	36	33,70	079
8,00	119	75	8	36	33,70	080
8,10	125	75	10	40	36,77	081
8,20	125	75	10	40	36,77	082
8,30	125	75	10	40	36,77	083
8,40	125	75	10	40	36,77	084
8,50	125	75	10	40	38,26	085
8,60	131	81	10	40	34,12	086
8,70	131	81	10	40	34,12	087
8,80	131	81	10	40	34,12	088
8,90	131	81	10	40	34,12	089
9,00	131	81	10	40	34,12	090
9,10	131	81	10	40	36,88	091
9,20	131	81	10	40	36,88	092
9,30	131	81	10	40	36,88	093
9,40	131	81	10	40	36,88	094
9,50	131	81	10	40	36,88	095
9,55	137	87	10	40	40,49	955
9,60	137	87	10	40	40,49	096
9,70	137	87	10	40	40,49	097
9,80	137	87	10	40	40,49	098
9,90	137	87	10	40	40,49	099
10,00	137	87	10	40	40,49	100
10,10	144	87	12	45	50,13	101
10,20	144	87	12	45	50,13	102
10,30	144	87	12	45	50,13	103
10,40	144	87	12	45	50,13	104
10,50	144	87	12	45	50,13	105
10,60	144	87	12	45	55,01	106
10,70	151	94	12	45	55,01	107
10,80	151	94	12	45	55,01	108
10,90	151	94	12	45	55,01	109
11,00	151	94	12	45	47,16	110
11,10	151	94	12	45	50,76	111
11,20	151	94	12	45	50,76	112
11,30	151	94	12	45	50,76	113
11,40	151	94	12	45	50,76	114
11,50	151	94	12	45	50,76	115
11,60	151	94	12	45	54,79	116
11,70	151	94	12	45	54,79	117
11,80	151	94	12	45	54,79	118
11,90	158	101	12	45	54,79	119
12,00	158	101	12	45	54,79	120
12,10	161	101	16	48	62,42	121
12,20	161	101	16	48	62,42	122
12,30	161	101	16	48	62,42	123
12,40	161	101	16	48	62,42	124
12,50	161	101	16	48	62,42	125
12,60	161	101	16	48	66,02	126
12,70	161	101	16	48	66,02	127
12,80	161	101	16	48	66,02	128
12,90	161	101	16	48	66,02	129
13,00	161	101	16	48	73,33	130
13,50	166	106	16	48	94,74	135
14,00	166	106	16	48	94,74	140
14,50	169	109	16	48	121,90	145
15,00	169	109	16	48	114,50	150
15,50	172	112	16	48	124,00	155
16,00	172	112	16	48	119,80	160
16,50	181	115	20	50	184,40	165
17,00	181	115	20	50	184,40	170
17,50	184	118	20	50	184,40	175
18,00	184	118	20	50	184,40	180
18,50	188	122	20	50	184,40	185
19,00	188	122	20	50	184,40	190
19,50	191	125	20	50	184,40	195
20,00	191	125	20	50	165,40	200

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c Page 48

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
0,20		19	2,5					4,52	00200 [1]			7,80	00200				
0,25		19	3,0					4,33	00250 [1]			11,66	00250				
0,30		19	3,0					3,21	00300 [1]			6,03	00300				
0,35		19	4,0					3,10	00350 [1]			5,60	00350				
0,40		20	5,0					2,61	00400 [1]			4,65	00400				
0,45		20	5,0					2,65	00450 [1]			4,87	00450				
0,50		22	6,0					2,22	00500 [1]			3,41	00500				
0,55		24	7,0					3,34	00550 [1]			5,95	00550				
0,60		24	7,0					2,13	00600 [1]			3,67	00600				
0,65		26	8,0					3,10	00650 [1]			5,95	00650				
0,70		28	9,0					1,91	00700 [1]			3,35	00700				
0,75		28	9,0					2,31	00750 [1]			3,46	00750				
0,80		30	10,0					1,83	00800 [1]			2,91	00800				
0,85		30	10,0					2,13	00850 [1]			3,37	00850				
0,90		32	11,0			2,98	009	1,74	00900 [1]			2,79	00900				
0,95		32	11,0					2,13	00950 [1]			3,37	00950				
1,00		34	12,0	6,26	010 [2]	2,98	010	1,70	01000 [1]	3,57	010	2,89	01000	3,02	010 [1]	6,65	010
1,05		34	12,0					1,86	01050 [1]			3,30	01050				
1,10		36	14,0	6,79	011 [2]	3,27	011	1,64	01100 [1]	3,66	011	2,71	01100	3,35	011 [1]	7,44	011
1,15		36	14,0					1,91	01150 [1]			3,06	01150				
1,20		38	16,0	6,65	012 [2]	3,19	012	1,70	01200 [1]	4,05	012	2,71	01200	3,35	012 [1]	7,44	012
1,25		38	16,0			3,27	125	1,86	01250 [1]			2,98	01250				
1,30		38	16,0	6,79	013 [2]	3,27	013	1,58	01300 [1]	3,85	013	2,71	01300	3,30	013 [1]	7,24	013
1,35		40	18,0					1,79	01350 [1]			3,06	01350				
1,40		40	18,0	6,84	014 [2]	3,29	014	1,55	01400 [1]	3,64	014	2,71	01400	3,35	014 [1]	7,44	014
1,45		40	18,0			3,10	145	1,64	01450 [1]			3,02	01450			6,44	901
1,50		40	18,0	6,46	015 [2]	3,10	015	1,40	01500 [1]	3,35	015	2,71	01500	3,00	015 [1]	6,58	015
1,55		43	20,0			3,10	155	1,55	01550 [1]			3,02	01550			6,49	902
1,60		43	20,0	6,46	016 [2]	3,10	016	1,36	01600 [1]	3,64	016	2,41	01600	3,02	016 [1]	6,65	016
1,65		43	20,0			3,33	165	1,55	01650 [1]			3,02	01650			11,45	903
1,70		43	20,0	6,94	017 [2]	3,33	017	1,36	01700 [1]	3,75	017	2,52	01700	3,02	017 [1]	6,65	017
1,75		46	22,0					1,55	01750 [1]			2,91	01750				
1,80		46	22,0	6,84	018 [2]	3,29	018	1,20	01800 [1]	3,64	018	2,49	01800	3,02	018 [1]	6,65	018
1,85		46	22,0					1,45	01850 [1]			2,91	01850			7,89	904
1,90		46	22,0	6,84	019 [2]	3,29	019	1,24	01900 [1]	3,75	019	2,49	01900	3,02	019 [1]	6,65	019
1,95		49	24,0					1,45	01950 [1]			2,79	01950				
2,00		49	24,0	6,65	020 [2]	3,19	020	1,02	02000 [1]	3,05	020	2,01	02000	2,72	020 [1]	5,95	020
2,05		49	24,0					1,40	02050 [1]			2,63	02050			8,54	905
2,10		49	24,0	6,94	021 [2]	3,33	021	1,20	02100 [1]	4,00	021	2,31	02100	2,97	021 [1]	6,49	021
2,15		53	27,0					1,45	02150 [1]			2,63	02150				
2,20		53	27,0	7,32	022 [2]	3,48	022	1,24	02200 [1]	4,00	022	2,31	02200	2,97	022 [1]	6,49	022
2,25		53	27,0					1,45	02250 [1]			2,57	02250				
2,30		53	27,0	7,08	023 [2]	3,40	023	1,24	02300 [1]	4,00	023	2,31	02300	2,97	023 [1]	6,49	023
2,35		53	27,0					2,03	02350 [1]			3,14	02350				
2,38	3/32	57	30,0	7,08	238 [2]	3,40	238										
2,40		57	30,0	6,65	024 [2]	3,19	024	1,31	02400	4,02	024	2,41	02400	2,97	024	6,49	024

Steel	●	●	●	○			●		●
Stainless steel	○	●		●			○		○
Cast iron	●	●	●	○			○		○
Non ferrous metals	○	●	○	○		●	○		○
Heat resistant alloys	○	○		○					
Hardened materials		○							

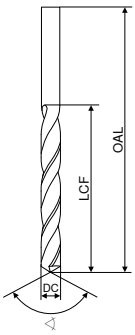
1) uncoated
2) self-centering

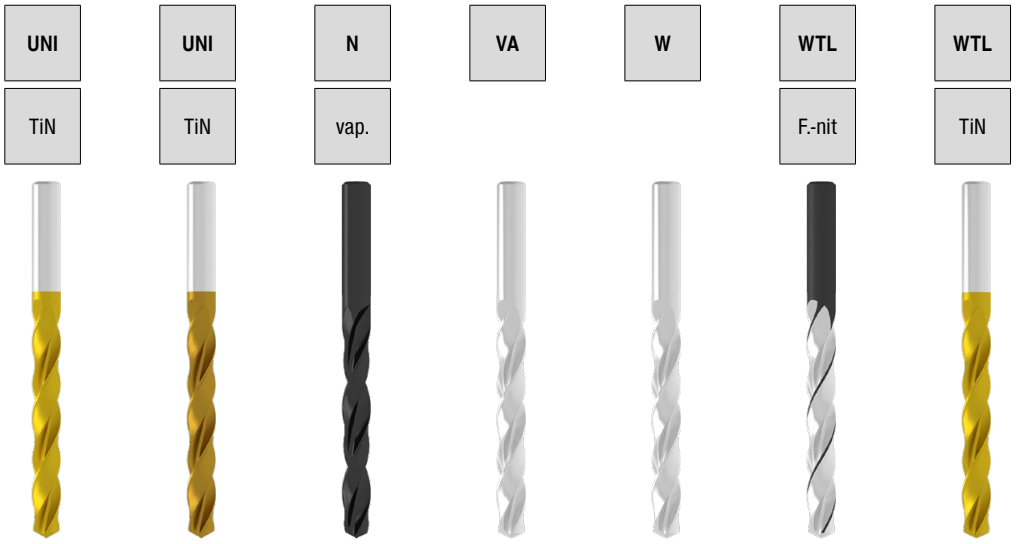
→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD





				◁ 130° HSS-E-PM T2		◁ 118° HSS-E T2		◁ 118° HSS T2		◁ 130° HSS-E T2		◁ 130° HSS T2		◁ 130° HSS-E T2		◁ 130° HSS-E T2	
DC h8	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
2,45		57	30,0					2,03	02450			3,19	02450				
2,50		57	30,0	6,79	025 2)	3,27	025	1,31	02500	3,21	025	2,04	02500	2,75	025	6,09	025
2,55		57	30,0			3,40	255	2,06	02550			3,70	02550				
2,60		57	30,0	7,08	026 2)	3,40	026	1,36	02600	4,10	026	2,49	02600	2,97	026	6,49	026
2,65		57	30,0					2,22	02650			3,70	02650				
2,70		61	33,0	7,51	027 2)	3,59	027	1,36	02700	4,10	027	2,55	02700	3,16	027	7,09	027
2,75		61	33,0					1,74	02750			3,58	02750				
2,78	7/64	61	33,0	9,15	278 2)	4,37	278										
2,80		61	33,0	7,37	028 2)	3,50	028	1,36	02800	4,21	028	2,79	02800	3,30	028	7,24	028
2,85		61	33,0					2,06	02850			4,33	02850				
2,90		61	33,0	7,51	029 2)	3,59	029	1,36	02900	4,21	029	2,79	02900	3,30	029	7,24	029
2,95		61	33,0					1,74	02950			3,70	02950				
3,00		61	33,0	7,18	030 2)	3,44	030	1,14	03000	3,21	030	2,24	03000	2,91	030	6,44	030
3,05		65	36,0					1,58	03050			3,14	03050				
3,10		65	36,0	7,95	031 2)	3,81	031	1,45	03100	4,25	031	2,79	03100	3,16	031	7,09	031
3,15		65	36,0					1,58	03150			3,14	03150				
3,17	1/8	65	36,0	7,90	317 2)	3,79	317										
3,20		65	36,0	7,81	032 2)	3,64	032	1,45	03200	3,64	032	2,52	03200	3,35	032	7,44	032
3,25		65	36,0			3,81	325	1,64	03250			3,14	03250				
3,30		65	36,0	7,95	033 2)	3,70	033	1,45	03300	3,66	033	2,55	03300	3,43	033	7,56	033
3,35		65	36,0					1,74	03350			3,19	03350				
3,40		70	39,0	8,53	034 2)	4,09	034	1,45	03400	4,48	034	2,83	03400	3,83	034	8,41	034
3,45		70	39,0					1,79	03450			3,37	03450				
3,50		70	39,0	8,62	035 2)	4,14	035	1,31	03500	3,57	035	2,61	03500	3,16	035	7,09	035
3,55		70	39,0					1,86	03550			3,37	03550				
3,57	9/64	70	39,0	8,62	357 2)	4,14	357										
3,60		70	39,0	8,73	036 2)	4,19	036	1,55	03600	4,65	036	2,83	03600	3,67	036	8,28	036
3,65		70	39,0					1,86	03650			3,21	03650				
3,70		70	39,0	8,73	037 2)	4,19	037	1,64	03700	4,67	037	2,89	03700	3,85	037	8,41	037
3,75		70	39,0					1,91	03750			3,52	03750				
3,80		75	43,0	9,19	038 2)	4,39	038	1,70	03800	4,75	038	3,14	03800	4,08	038	9,09	038
3,85		75	43,0					2,03	03850			3,54	03850				
3,90		75	43,0	9,40	039 2)	4,48	039	1,79	03900	4,95	039	3,14	03900	4,33	039	9,44	039
3,95		75	43,0					2,13	03950			3,58	03950				
3,97	5/32	75	43,0	9,54	397 2)	4,58	397										
4,00		75	43,0	9,01	040 2)	4,31	040	1,36	04000	3,90	040	2,65	04000	3,46	040	7,72	040
4,05		75	43,0					2,22	04050			4,65	04050				
4,10		75	43,0	9,19	041 2)	4,39	041	1,86	04100	4,95	041	3,14	04100	4,31	041	9,44	041
4,15		75	43,0					2,22	04150			4,65	04150				
4,20		75	43,0	9,19	042 2)	4,39	042	1,64	04200	5,00	042	2,79	04200	4,04	042	8,95	042
4,25		75	43,0			4,70	425	2,31	04250			4,52	04250				
4,30		80	47,0	9,84	043 2)	4,70	043	1,91	04300	5,00	043	3,86	04300	4,48	043	9,94	043
4,35		80	47,0					2,94	04350			5,57	04350				
4,37	11/64	80	47,0	9,93	437 2)	4,76	437										
4,40		80	47,0	9,84	044 2)	4,70	044	1,91	04400	5,09	044	3,86	04400	4,48	044	9,94	044
4,45		80	47,0					2,94	04450								

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

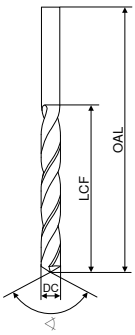
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



UNI	UNI	N	VA	W	WTL	WTL
TiN	TiN	vap.			F.-nit	TiN



◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC $_{h8}$	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
4,50		80	47,0	9,54	045 [2]	4,58	045	1,74	04500	4,97	045	3,37	04500	4,14	045	8,95	045
4,55		80	47,0					2,94	04550			6,78	04550				
4,60		80	47,0	10,12	046 [2]	4,85	046	1,91	04600	5,28	046	3,86	04600	4,70	046	10,59	046
4,65		80	47,0			4,85	465	2,94	04650			6,78	04650				
4,70		80	47,0	12,29	047 [2]	5,88	047	2,03	04700	5,35	047	3,86	04700	4,70	047	10,59	047
4,75		80	47,0					2,94	04750			5,42	04750				
4,76	3/16	86	52,0	10,37	476 [2]	4,95	476										
4,80		86	52,0	10,37	048 [2]	4,95	048	2,03	04800	5,41	048	3,86	04800	4,70	048	10,59	048
4,85		86	52,0					2,68	04850			6,78	04850				
4,90		86	52,0	10,50	049 [2]	5,03	049	2,13	04900	5,60	049	3,86	04900	4,90	049	10,81	049
4,95		86	52,0			4,89	495	3,30	04950			6,78	04950				
5,00		86	52,0	10,60	050 [2]	5,08	050	1,70	05000	4,75	050	3,67	05000	4,36	050	9,59	050
5,05		86	52,0			5,08	505	3,41	05050			8,16	05050				
5,10		86	52,0	10,60	051 [2]	5,08	051	2,22	05100	5,60	051	4,07	05100	4,90	051	10,81	051
5,15		86	52,0					3,56	05150								
5,16	13/64	86	52,0	11,55	516 [2]	5,54	516										
5,20		86	52,0	10,92	052 [2]	5,22	052	2,22	05200	5,65	052	4,20	05200	5,08	052	11,45	052
5,25		86	52,0					3,41	05250			6,49	05250				
5,30		86	52,0	11,55	053 [2]	5,54	053	2,22	05300	5,77	053	4,20	05300	5,08	053	11,45	053
5,35		93	57,0					4,05	05350								
5,40		93	57,0	14,20	054 [2]	6,77	054	2,45	05400	6,24	054	4,49	05400	5,52	054	12,19	054
5,45		93	57,0					4,20	05450			5,57	05450				
5,50		93	57,0	12,29	055 [2]	5,83	055	2,36	05500	6,76	055	4,11	05500	5,08	055	11,34	055
5,55		93	57,0			6,85	555	4,20	05550			5,57	05550				
5,56	7/32	93	57,0	14,41	556 [2]	6,85	556										
5,60		93	57,0	13,03	056 [2]	6,22	056	2,52	05600	6,46	056	4,95	05600	5,58	056	12,62	056
5,65		93	57,0					4,33	05650			7,68	05650				
5,70		93	57,0	12,82	057 [2]	6,16	057	2,55	05700	6,46	057	4,95	05700	5,58	057	12,62	057
5,75		93	57,0			6,16	575	4,33	05750			7,55	05750				
5,80		93	57,0	12,82	058 [2]	6,16	058	2,61	05800	6,46	058	4,95	05800	5,64	058	12,72	058
5,85		93	57,0					4,33	05850			9,07	05850				
5,90		93	57,0	13,68	059 [2]	6,54	059	2,65	05900	6,46	059	4,95	05900	6,07	059	13,68	059
5,95	15/64	93	57,0	16,74	595 [2]	8,01	595	2,68	05950			4,95	05950				
6,00		93	57,0	12,40	060 [2]	5,92	060	2,36	06000	6,19	060	4,87	06000	5,62	060	13,46	060
6,05		101	63,0					4,71	06050			10,60	06050				
6,10		101	63,0	13,99	061 [2]	6,68	061	2,89	06100	7,22	061	4,95	06100	6,12	061	13,78	061
6,15		101	63,0					4,71	06150			8,16	06150				
6,20		101	63,0	13,78	062 [2]	6,58	062	2,89	06200	7,22	062	4,95	06200	6,46	062	14,20	062
6,25		101	63,0					4,71	06250			8,48	06250				
6,30		101	63,0	15,26	063 [2]	7,29	063	2,94	06300	7,22	063	5,24	06300	7,09	063	15,26	063
6,35	1/4	101	63,0	16,11	635 [2]	7,70	635	3,14	06350			5,03	06350				
6,40		101	63,0	16,11	064 [2]	7,72	064	3,10	06400	7,89	064	5,24	06400	7,09	064	15,37	064
6,45		101	63,0					5,35	06450								
6,50		101	63,0	14,94	065 [2]	7,12	065	2,94	06500	7,09	065	5,01	06500	6,15	065	13,78	065
6,55		101	63,0					5,60	06550			11,45	06550				
6,60		101	63,0	16,32	066 [2]	7,81	066	3,21	06600	7,89	066	6,01	06600	7,24	066	15,90	066

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

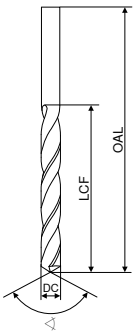
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC $_{h8}$	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
6,65		101	63,0					5,68	06650			11,02	06650				
6,70		101	63,0	16,32	067 2)	7,79	067	3,34	06700	7,89	067	6,05	06700	7,24	067	15,90	067
6,75		109	69,0	22,05	675 2)	10,52	675	3,90	06750			6,49	06750				
6,80		109	69,0	16,74	068 2)	8,01	068	3,86	06800	8,54	068	6,49	06800	7,56	068	16,21	068
6,85		109	69,0					6,38	06850			11,45	06850				
6,90		109	69,0	17,07	069 2)	8,15	069	3,86	06900	8,54	069	6,49	06900	7,89	069	17,27	069
6,95		109	69,0					6,47	06950			11,45	06950				
7,00		109	69,0	16,74	070 2)	8,01	070	3,56	07000	7,38	070	5,75	07000	6,72	070	14,84	070
7,05		109	69,0					6,90	07050			9,25	07050				
7,10		109	69,0	19,29	071 2)	9,21	071	3,90	07100	10,11	071	7,97	07100	10,42	071	22,89	071
7,14	9/32	109	69,0	28,83	714 2)	13,78	714										
7,15		109	69,0					6,58	07150								
7,20		109	69,0	19,18	072 2)	9,18	072	4,05	07200	10,11	072	7,97	07200	10,42	072	22,89	072
7,25		109	69,0					6,38	07250			13,56	07250				
7,30		109	69,0	19,93	073 2)	9,53	073	4,05	07300	10,11	073	7,97	07300	10,42	073	22,89	073
7,35		109	69,0					6,90	07350								
7,40		109	69,0	19,50	074 2)	9,32	074	4,24	07400	10,11	074	7,97	07400	10,42	074	22,89	074
7,45		109	69,0			8,49	745	6,78	07450								
7,50		109	69,0	17,70	075 2)	8,49	075	3,86	07500	8,04	075	6,60	07500	7,72	075	17,27	075
7,55		117	75,0					7,89	07550								
7,60		117	75,0	21,52	076 2)	10,30	076	4,43	07600	12,19	076	8,76	07600	11,45	076	25,22	076
7,65		117	75,0					7,89	07650								
7,70		117	75,0	24,48	077 2)	11,76	077	4,43	07700	12,19	077	8,76	07700	11,45	077	25,22	077
7,75		117	75,0					7,19	07750			15,37	07750				
7,80		117	75,0	20,99	078 2)	10,05	078	4,52	07800	12,19	078	8,76	07800	11,45	078	25,22	078
7,85		117	75,0					7,89	07850								
7,90		117	75,0	25,12	079 2)	11,97	079	4,58	07900	12,19	079	10,14	07900	11,45	079	25,22	079
7,94	5/16	117	75,0	22,57	794 2)	10,81	794										
7,95		117	75,0					8,25	07950								
8,00		117	75,0	20,03	080 2)	9,57	080	3,86	08000	9,86	080	7,37	08000	8,73	080	19,50	080
8,05		117	75,0					8,41	08050			19,40	08050				
8,10		117	75,0	21,83	081 2)	10,46	081	4,71	08100	12,19	081	10,50	08100	12,19	081	26,81	081
8,15		117	75,0					8,53	08150			19,40	08150				
8,20		117	75,0	21,52	082 2)	10,30	082	4,87	08200	13,25	082	11,02	08200	12,72	082	27,55	082
8,25		117	75,0					5,94	08250			15,90	08250				
8,30		117	75,0	23,95	083 2)	11,45	083	5,28	08300	13,25	083	11,55	08300	13,68	083	29,67	083
8,35		117	75,0					9,02	08350								
8,40		117	75,0	24,06	084 2)	11,45	084	5,28	08400	13,68	084	11,55	08400	13,68	084	29,67	084
8,45		117	75,0					9,52	08450			18,44	08450				
8,50		117	75,0	20,56	085 2)	9,85	085	5,01	08500	9,66	085	8,48	08500	9,94	085	21,93	085
8,55		125	81,0					11,13	08550			18,97	08550				
8,60		125	81,0			17,27	086	5,73	08600	14,31	086	11,55	08600	15,05	086	32,85	086
8,65		125	81,0					11,13	08650								
8,70		125	81,0			17,27	087	5,73	08700	14,31	087	12,93	08700	15,26	087	33,38	087
8,73	11/32	125	81,0	22,26	873 2)	10,60	873										
8,75		125	81,0					9,92	08750			18,44	08750				

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

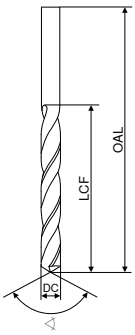
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
8,80		125	81,0	24,06	088 2)	11,45	088	5,94	08800	15,58	088	12,93	08800	15,26	088	33,38	088
8,90		125	81,0			16,01	089	6,20	08900	16,42	089	13,03	08900	15,37	089	33,91	089
8,95		125	81,0					11,55	08950								
9,00		125	81,0	22,68	090 2)	10,81	090	5,46	09000	12,62	090	9,25	09000	11,66	090	25,54	090
9,05		125	81,0					11,55	09050								
9,10		125	81,0			17,80	091	6,20	09100	17,48	091	14,31	09100	16,21	091	36,04	091
9,15		125	81,0					11,55	09150								
9,20		125	81,0			17,80	092	6,20	09200	18,34	092	14,31	09200	17,70	092	38,79	092
9,25		125	81,0					8,25	09250			22,15	09250				
9,30		125	81,0	26,07	093 2)	12,50	093	6,30	09300	18,87	093	14,31	09300	17,70	093	38,26	093
9,35		125	81,0			11,34	935	12,29	09350								
9,40		125	81,0			18,23	094	6,30	09400	20,24	094	14,31	09400	17,70	094	38,26	094
9,45		125	81,0					12,29	09450								
9,50		125	81,0	23,85	095 2)	11,34	095	6,23	09500	14,84	095	10,81	09500	12,62	095	27,24	095
9,55		133	87,0					13,99	09550								
9,60		133	87,0			13,56	096	6,90	09600	21,30	096	16,21	09600	18,44	096	40,80	096
9,65		133	87,0					13,99	09650								
9,70		133	87,0			19,60	097	6,90	09700	21,30	097	16,64	09700	20,13	097	43,56	097
9,75		133	87,0					9,02	09750								
9,80		133	87,0	28,40	098 2)	13,56	098	7,70	09800	21,30	098	16,64	09800	20,13	098	43,56	098
9,85		133	87,0					15,15	09850								
9,90		133	87,0			16,11	099	7,70	09900	21,30	099	17,07	09900	20,13	099	43,56	099
9,95		133	87,0					15,15	09950								
10,00		133	87,0	26,92	100 2)	12,82	100	6,58	10000	14,20	100	11,45	10000	14,20	100	31,37	100
10,05		133	87,0					20,34	10050			28,93	10050				
10,10		133	87,0			18,34	101	8,25	10100	23,95	101	17,27	10100	31,69	101	69,31	101
10,15		133	87,0					20,34	10150								
10,20		133	87,0	31,05	102 2)	14,84	102	8,41	10200	20,24	102	17,27	10200	19,50	102	42,39	102
10,25		133	87,0					11,34	10250			19,40	10250				
10,30		133	87,0			16,01	103	10,15	10300	31,79	103	17,27	10300	26,07	103	56,59	103
10,35		133	87,0					20,34	10350								
10,40		133	87,0			19,82	104	10,15	10400	31,79	104	17,27	10400	27,55	104	60,40	104
10,45		133	87,0					20,34	10450								
10,50		133	87,0	31,26	105 2)	14,94	105	8,53	10500	20,99	105	14,09	10500	17,91	105	39,43	105
10,55		133	87,0			15,48	955	14,31	10550								
10,60		133	87,0					10,70	10600	42,49	106	17,27	10600	27,55	106		
10,70		142	94,0					12,29	10700	41,86	107	19,60	10700	27,55	107	60,40	107
10,75		142	94,0					13,68	10750			22,79	10750				
10,80		142	94,0					11,97	10800	42,49	108	20,46	10800	26,28	108	57,87	108
10,90		142	94,0					12,93	10900	42,49	109	20,46	10900	33,38	109		
11,00		142	94,0	32,32	110 2)	15,48	110	9,92	11000	22,79	110	16,64	11000	21,93	110	47,16	110
11,10		142	94,0					12,93	11100	44,29	111	20,46	11100	32,43	111		
11,11	7/16	142	94,0	40,49	111 2)	19,40	111										
11,20		142	94,0			17,17	112	12,29	11200	44,29	112	26,18	11200	36,04	112	80,23	112
11,30		142	94,0			17,17	113			44,62	113			36,04	113		
11,40		142	94,0			17,17	114	13,35	11400	44,62	114	28,93	11400	36,04	114		

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

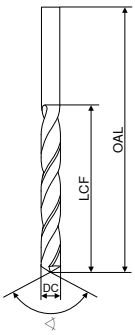
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
11,50		142	94,0	35,82	115 2)	17,17	115	10,70	11500	29,24	115	18,65	11500	25,54	115	56,38	115
11,60		142	94,0			18,34	116	13,35	11600	51,08	116	28,93	11600	36,04	116		
11,70		142	94,0					13,68	11700	51,08	117	28,93	11700	36,04	117	80,23	117
11,80		142	94,0					13,88	11800	51,08	118	28,93	11800	38,26	118	84,04	118
11,90		151	101,0					15,15	11900	51,08	119	28,93	11900				
12,00		151	101,0	38,37	120 2)	18,34	120	11,97	12000	32,96	120	20,24	12000	27,24	120	59,56	120
12,15		151	101,0			19,07	121										
12,20		151	101,0					16,01	12200			34,44	12200				
12,25		151	101,0					17,91	12250								
12,30		151	101,0	68,78	123 2)	32,85	123										
12,50		151	101,0	39,84	125 2)	19,07	925	13,56	12500			20,24	12500	33,70	125	74,29	125
12,70		151	101,0	52,14	127 2)	24,91	127	15,05	12700			19,60	12700				
12,80		151	101,0					18,12	12800			36,24	12800	57,12	128	125,00	128
13,00		151	101,0	42,39	130 2)	20,24	130	14,84	13000			24,06	13000	33,70	130	73,55	130
13,10		151	101,0			36,04	131										
13,20		151	101,0					19,40	13200			44,29	13200				
13,30		160	108,0			36,04	133										
13,50		160	108,0	75,35	135 2)	36,04	135	17,17	13500			29,78	13500	44,41	135	97,07	135
13,80		160	108,0					24,69	13800			55,74	13800	50,55	138	111,30	138
14,00		160	108,0	51,29	140 2)	24,59	140	18,97	14000			28,71	14000	39,96	140	86,15	140
14,50		169	114,0					20,34	14500			37,94	14500	48,54	145	105,80	145
14,80		169	114,0											73,55	148	159,00	148
15,00		169	114,0					22,15	15000			33,81	15000	49,91	150	109,20	150
15,25		178	120,0					41,12	15250								
15,50		178	120,0					24,06	15500			47,80	15500	72,81	155	157,90	155
15,80		178	120,0					39,63	15800								
16,00		178	120,0					25,85	16000			45,25	16000	61,15	160	135,60	160
16,50		184	125,0					29,57	16500			75,67	16500				
17,00		184	125,0					31,26	17000			76,73	17000				
17,50		191	130,0					34,12	17500			152,60	17500				
18,00		191	130,0					36,35	18000			83,09	18000				
18,50		198	135,0					39,63	18500								
19,00		198	135,0					42,82	19000			94,64	19000				
19,50		205	140,0					45,25	19500								
20,00		205	140,0					49,60	20000			117,60	20000				

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

1) uncoated
2) self-centering

→ v_c Page 48+49

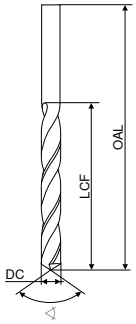
Twist drill to DIN 338, short

▲ Article no. 10 169 ... WTL-L – left-hand cutting drill

≤ 5xD

WTL
TiCN

WTL-L
F.-nit







130° HSS-E

130° HSS

DC_{h8}	OAL	LCF	T2 Article no. 10 172 ...		T2 Article no. 10 169 ...	
mm	mm	mm	EUR		EUR	
1,0	34	12			4,96	010 1)
1,3	38	16			5,02	013 1)
1,4	40	18			5,02	014 1)
1,5	40	18			4,04	015 1)
1,6	43	20			4,22	016 1)
1,7	43	20			4,27	017 1)
1,8	46	22			4,33	018 1)
1,9	46	22			4,40	019 1)
2,0	49	24			3,43	020 1)
2,1	49	24			4,08	021 1)
2,2	53	27			4,48	022 1)
2,3	53	27			4,22	023 1)
2,4	57	30			4,22	024
2,5	57	30			3,83	025
2,6	57	30			4,33	026
2,7	61	33			4,33	027
2,8	61	33			4,48	028
2,9	61	33			4,48	029
3,0	61	33	8,54	030	4,08	030
3,1	65	36	9,09	031	4,98	031
3,2	65	36	9,59	032	4,52	032
3,3	65	36	10,31	033	4,70	033
3,4	70	39	11,34	034	5,34	034
3,5	70	39	9,09	035	4,36	035
3,6	70	39	10,81	036	5,52	036
3,7	70	39	11,34	037	5,69	037
3,8	75	43	11,97	038	5,93	038
3,9	75	43	12,62	039	6,21	039
4,0	75	43	10,31	040	4,70	040
4,1	75	43	12,62	041	6,46	041
4,2	75	43	11,66	042	5,71	042
4,3	80	47	13,03	043	7,44	043
4,4	80	47	13,03	044	7,72	044
4,5	80	47	11,97	045	6,00	045
4,6	80	47	13,88	046	7,89	046
4,7	80	47	13,88	047	7,89	047
4,8	86	52	13,88	048	7,89	048
4,9	86	52	14,09	049	8,07	049
5,0	86	52	12,72	050	5,75	050
5,1	86	52	14,09	051	8,07	051
5,2	86	52	14,84	052	8,95	052
5,3	86	52	14,84	053	8,95	053
5,4	93	57	15,79	054	9,44	054
5,5	93	57	14,73	055	7,44	055
5,6	93	57	15,90	056	9,94	056
5,7	93	57	15,90	057	9,94	057
5,8	93	57	16,21	058	9,94	058
5,9	93	57	17,70	059	9,94	059
6,0	93	57	16,21	060	7,44	060
6,1	101	63	17,91	061	10,81	061
6,2	101	63	18,44	062	11,97	062
6,3	101	63	20,13	063	11,97	063
6,4	101	63	20,46	064	11,97	064
6,5	101	63	17,91	065	8,95	065
6,6	101	63	21,30	066	12,93	066
6,7	101	63	21,30	067	12,93	067
6,8	109	69	21,73	068	13,88	068
6,9	109	69	22,89	069	14,20	069
7,0	109	69	19,50	070	10,42	070
7,1	109	69	29,67	071	19,50	071
7,2	109	69	29,67	072	19,50	072
7,3	109	69			19,50	073
7,4	109	69	29,67	074	19,50	074
7,5	109	69	22,57	075	12,19	075
7,7	117	75	32,85	077	20,66	077
7,8	117	75	32,85	078	20,66	078
7,9	117	75			20,66	079
8,0	117	75	25,22	080	11,66	080
8,1	117	75	34,65	081	21,30	081
8,2	117	75	36,04	082	21,30	082
8,3	117	75			21,30	083
8,4	117	75	38,79	084	21,30	084
8,5	117	75	28,40	085	14,73	085
8,6	125	81	42,82	086	23,74	086
8,7	125	81	43,35	087	23,74	087
8,8	125	81	43,35	088	23,74	088
8,9	125	81	44,41	089	23,74	089
9,0	125	81	33,17	090	14,41	090
9,2	125	81			24,38	092
9,3	125	81			24,38	093
9,5	125	81	35,71	095	18,76	095
9,8	133	87			26,07	098
9,9	133	87			27,24	099
10,0	133	87	41,12	100	16,21	100
10,1	133	87			27,24	101
10,2	133	87	54,68	102	27,87	102
10,3	133	87			27,55	103
10,4	133	87			29,04	104
10,5	133	87	51,50	105	28,40	105
11,0	142	94	73,55	110	28,40	110
11,5	142	94	73,55	115	31,37	115
12,0	151	101	78,31	120	32,43	120
12,2	151	101			51,19	122
12,5	151	101			34,65	125
13,0	151	101			35,71	130
14,0	160	108			41,43	140
14,5	169	114			45,04	145
15,0	169	114			50,23	150
16,0	178	120			56,38	160

Steel	●	●
Stainless steel	○	
Cast iron		○
Non ferrous metals		○
Heat resistant alloys		

1) uncoated

→ v_c Page 49

Twist drill sets DIN 338, short

▲ in metal box
▲ in 0.1 mm steps

≤ 5xD



	N	UNI
	vap.	TiN
		
	Drill set type N HSS	Drill set type UNI TiN HSS-E
	T2	T2
$d_{1\ h8}$	Article no. 10 158 ...	Article no. 10 158 ...
mm	EUR	EUR
1,0 - 5,9	89,76 050	267,10 054
6,0 - 10,0	197,10 100	420,70 104
Steel	●	●
Stainless steel		●
Cast iron	●	●
Non ferrous metals		●
Heat resistant alloys		○

→ v_c Page 48

Set of type N vap. contains the drills of Art. No. 10 152 ...
Set of type UNI TiN contains the drills of Art. No. 10 171 ...

Twist drill with thro' coolant ~ DIN 338, short

- relief ground
- special point thinning
- wide chip flutes
- rounded flute edges
- for long chipping materials up to 1000 N/mm²

≤ 5xD

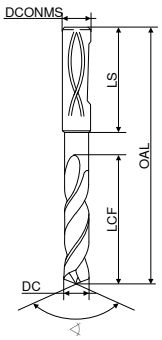




WNXi

WNXi

TiN







E
130°
HSS-E

E
130°
HSS-E

DC h8	OAL	LCF	DCONMS h6	LS	T2 Article no. 10 180 ...		T2 Article no. 10 181 ...	
mm	mm	mm	mm	mm	EUR		EUR	
5,0	82	44	6	38	67,61	050	94,74	050
5,5	82	44	6	38	68,46	055	96,44	055
6,0	82	44	6	38	64,75	060	90,93	060
6,5	91	53	8	38	71,96	065	100,20	065
6,8	91	53	8	38	73,23	068	102,50	068
7,0	91	53	8	38	73,23	070	101,60	070
7,5	91	53	8	38	73,44	075	103,30	075
7,8	91	53	8	38	74,92	078	105,60	078
8,0	91	53	8	38	70,69	080	99,51	080
8,5	103	61	10	42	78,10	085	110,20	085
9,0	103	61	10	42	78,74	090	111,30	090
9,5	103	61	10	42	80,33	095	112,30	095
10,0	103	61	10	42	76,41	100	107,00	100
10,2	118	71	12	47	86,37	102	120,90	102
10,5	118	71	12	47	86,37	105	121,90	105
11,0	118	71	12	47	88,70	110	124,00	110
11,5	118	71	12	47	91,78	115	129,30	115
12,0	118	71	12	47	84,04	120	116,60	120
12,5	124	77	14	47	103,30	125	147,30	125
13,0	124	77	14	47	104,90	130	149,50	130
13,5	124	77	14	47	107,00	135	152,60	135
14,0	124	77	14	47	101,00	140	144,10	140
14,5	133	83	16	50	125,00	145	179,10	145
15,0	133	83	16	50	127,20	150	181,30	150
15,5	133	83	16	50	130,30	155	184,40	155
16,0	133	83	16	50	121,90	160	178,10	160
16,5	143	93	18	50	153,70	165	216,20	165
17,0	143	93	18	50	154,80	170	222,60	170
17,5	143	93	18	50	159,00	175	228,90	175
18,0	143	93	18	50	150,50	180	212,00	180
18,5	153	101	20	52	181,30	185	255,40	185
19,0	153	101	20	52	183,40	190	260,70	190
19,5	153	101	20	52	185,40	195	263,90	195
20,0	153	101	20	52	178,10	200	252,20	200

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○

→ v_c Page 49

Twist drills with coolant hole, factory standard, long

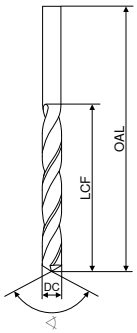
≤ 10xD



NC

NC

TiAlN







130°
HSS

130°
HSS

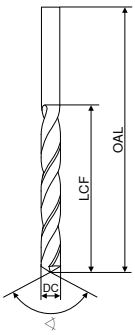
DC h8	OAL	LCF	T2 Article no. 10 223 ...		T2 Article no. 10 224 ...	
mm	mm	mm	EUR		EUR	
3,0	100	66	107,00	030	118,70	030
3,3	106	69	111,30	033	134,60	033
3,5	112	73	110,20	035	132,50	035
3,8	119	78			162,10	038
4,0	119	78	111,30	040	134,60	040
4,2	119	78	112,30	042	136,80	042
4,5	126	82	112,30	045	135,60	045
4,8	132	87			160,10	048
5,0	132	87	112,30	050	136,80	050
5,5	139	91	115,50	055	140,90	055
5,8	139	91			162,10	058
6,0	139	91	119,80	060	145,20	060
6,5	148	97	128,20	065	155,80	065
6,8	156	102	129,30	068	156,80	068
7,0	156	102	129,30	070	156,80	070
7,5	156	102	134,60	075	162,10	075
7,8	165	109			173,80	078
8,0	165	109	136,80	080	165,40	080
8,5	165	109	140,90	085	173,80	085
8,8	175	115			178,10	088
9,0	175	115	140,90	090	178,10	090
9,5	175	115	145,20	095	183,40	095
9,8	184	121			187,60	098
10,0	184	121	145,20	100	183,40	100
10,2	184	121	148,40	102	187,60	102
10,5	184	121	148,40	105	188,70	105
10,8	195	128			194,00	108
11,0	195	128	148,40	110	188,70	110
11,5	195	128	152,60	115	192,90	115
11,8	205	134			224,60	118
12,0	205	134	153,70	120	197,10	120
12,8	205	134			236,30	128
13,0	205	134	160,10	130	206,70	130

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○

→ v_c Page 50

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTL	WTW
	TiN	F.-nit	F.-nit	TiN	
					
	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E	HSS-E	HSS	HSS	HSS
	T2	T2	T2	T2	T2
DC h8	Article no. 10 270 ...	Article no. 10 225 ...	Article no. 10 215 ...	Article no. 10 210 ...	Article no. 10 200 ...
mm	EUR	EUR	EUR	EUR	EUR

DC h8 mm	OAL mm	LCF mm	10 270 ... EUR		10 225 ... EUR		10 215 ... EUR		10 210 ... EUR		10 200 ... EUR	
1,0	56	33	5,35	010	7,72	010 1)	5,81	010 1)	13,03	010	5,58	010
1,1	60	37	6,03	011	9,59	011 1)	6,39	011 1)	13,88	011	6,07	011
1,2	65	41	6,70	012	9,09	012 1)	5,93	012 1)	13,35	012	5,69	012
1,3	65	41	6,59	013	8,95	013 1)	6,06	013 1)	13,68	013	5,38	013
1,4	70	45	6,51	014	8,54	014 1)	5,62	014 1)	12,50	014	5,02	014
1,5	70	45	5,63	015	7,44	015 1)	4,83	015 1)	10,70	015	5,04	015
1,6	76	50	6,70	016	8,28	016 1)	4,64	016 1)	10,42	016	4,63	016
1,7	76	50	7,28	017	8,07	017 1)	4,62	017 1)	10,42	017	4,54	017
1,8	80	53	6,99	018	8,07	018 1)	4,58	018 1)	10,09	018	4,54	018
1,9	80	53	7,48	019	7,56	019 1)	4,50	019 1)	9,95	019	4,52	019
2,0	85	56	5,55	020	5,75	020 1)	4,23	020 1)	9,51	020	3,72	020
2,1	85	56	6,41	021	7,09	021 1)	4,87	021 1)	10,92	021	4,46	021
2,2	90	59	6,51	022	7,24	022 1)	4,97	022 1)	11,13	022	4,54	022
2,3	90	59	6,41	023	7,24	023 1)	5,01	023 1)	11,23	023	4,54	023
2,4	95	62	5,94	024	7,44	024	5,11	024	11,55	024	4,54	024
2,5	95	62	5,63	025	6,12	025	4,40	025	9,95	025	4,04	025
2,6	95	62	6,51	026	7,44	026	5,15	026	11,55	026	4,54	026
2,7	100	66	6,90	027	7,56	027	5,17	027	11,66	027	4,54	027
2,8	100	66	6,59	028	7,56	028	5,19	028	11,66	028	4,54	028
2,9	100	66	6,90	029	7,56	029	5,24	029	11,87	029	4,54	029
3,0	100	66	6,12	030	6,44	030	4,50	030	10,09	030	4,22	030
3,1	106	69	7,28	031	7,72	031	6,02	031	13,56	031	5,62	031
3,2	106	69	6,80	032	7,56	032	5,09	032	11,23	032	4,52	032
3,3	106	69	7,19	033	8,28	033	5,71	033	12,72	033	5,08	033
3,4	112	73	7,48	034	7,89	034	6,06	034	13,68	034	5,69	034
3,5	112	73	7,28	035	7,56	035	5,17	035	11,55	035	4,77	035
3,6	112	73	7,57	036	8,07	036	6,69	036	14,52	036	5,83	036
3,7	112	73	7,38	037	8,07	037	6,21	037	13,88	037	6,00	037
3,8	119	78	7,09	038	8,28	038	6,39	038	13,88	038	6,07	038
3,9	119	78	7,96	039	8,41	039	6,54	039	14,09	039	6,18	039
4,0	119	78	7,77	040	8,07	040	5,64	040	12,50	040	5,19	040
4,1	119	78	7,87	041	8,54	041	6,69	041	14,41	041	6,44	041
4,2	119	78	7,57	042	8,95	042	6,39	042	13,88	042	5,55	042
4,3	126	82	8,44	043	9,09	043	7,14	043	15,79	043	7,09	043
4,4	126	82	7,48	044	9,28	044	7,47	044	16,54	044	7,24	044
4,5	126	82	7,96	045	9,59	045	6,54	045	14,31	045	6,39	045
4,6	126	82	7,66	046	9,44	046	7,47	046	16,54	046	7,24	046
4,7	126	82	8,82	047	9,94	047	7,47	047	16,54	047	7,44	047
4,8	132	87	8,63	048	10,59	048	7,47	048	16,54	048	7,56	048
4,9	132	87	8,75	049	11,02	049	7,78	049	17,17	049	7,72	049
5,0	132	87	8,82	050	9,59	050	6,85	050	15,15	050	6,09	050
5,1	132	87	9,82	051	11,34	051	7,89	051	17,60	051	7,89	051
5,2	132	87	9,61	052	11,66	052	8,39	052	18,65	052	8,28	052
5,3	132	87	10,59	053	11,87	053	8,56	053	18,87	053	8,41	053

Steel	●	●	●	●	
Stainless steel	○	●			
Cast iron	●	●	●	●	
Non ferrous metals	○	●	●	●	●
Heat resistant alloys					

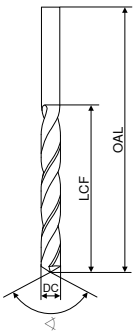
1) uncoated

→ v_c Page 50

Continued on next page

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTL	WTW
	TiN	F.-nit	F.-nit	TiN	
					
	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E	HSS-E	HSS	HSS	HSS
	T2	T2	T2	T2	T2
DC h8	Article no. 10 270 ...	Article no. 10 225 ...	Article no. 10 215 ...	Article no. 10 210 ...	Article no. 10 200 ...
mm	EUR	EUR	EUR	EUR	EUR

DC h8 mm	OAL mm	LCF mm	10 270 ... EUR		10 225 ... EUR		10 215 ... EUR		10 210 ... EUR		10 200 ... EUR	
5,4	139	91	11,55	054	11,97	054	8,72	054	19,60	054	8,54	054
5,5	139	91	9,22	055	11,45	055	8,06	055	18,12	055	7,89	055
5,6	139	91	12,08	056	12,62	056	9,80	056	21,62	056	9,28	056
5,7	139	91	13,46	057	12,72	057	10,09	057	22,15	057	9,44	057
5,8	139	91	11,66	058	12,93	058	10,42	058	22,36	058	9,94	058
5,9	139	91	13,03	059	13,03	059	10,70	059	23,85	059	10,31	059
6,0	139	91	11,13	060	11,87	060	8,39	060	18,65	060	8,07	060
6,1	148	97	13,25	061	13,78	061	11,55	061	25,22	061	11,87	061
6,2	148	97	11,76	062	13,88	062	11,66	062	25,44	062	11,97	062
6,3	148	97	13,25	063	14,09	063	11,87	063	25,65	063	12,19	063
6,4	148	97	11,97	064	14,73	064	12,82	064	27,87	064	12,72	064
6,5	148	97	11,45	065	13,46	065	9,37	065	20,46	065	9,09	065
6,6	148	97	13,35	066	15,05	066	13,35	066	28,93	066	12,93	066
6,7	148	97	13,68	067	15,37	067	13,68	067	29,57	067	13,03	067
6,8	156	102	14,52	068	16,21	068	14,20	068	31,37	068	13,78	068
6,9	156	102	15,15	069	17,27	069	14,41	069	31,69	069	13,88	069
7,0	156	102	13,78	070	14,84	070	10,92	070	24,06	070	11,13	070
7,1	156	102	13,35	071	17,70	071	14,52	071			14,09	071
7,2	156	102	15,15	072	18,23	072	15,15	072	33,38	072	14,41	072
7,3	156	102	15,79	073	18,44	073	15,37	073	33,59	073	14,73	073
7,4	156	102	16,42	074	19,50	074	15,58	074	33,91	074	14,84	074
7,5	156	102	16,64	075	17,70	075	13,56	075	29,24	075	13,46	075
7,6	165	109	17,91	076			15,79	076	34,87	076	15,37	076
7,7	165	109	17,07	077	21,30	077	16,01	077			15,58	077
7,8	165	109	18,65	078	21,73	078	16,54	078	36,04	078	15,79	078
7,9	165	109	18,01	079	21,93	079	16,54	079	36,35	079	16,21	079
8,0	165	109	15,26	080	16,54	080	12,72	080	27,66	080	12,29	080
8,1	165	109	16,74	081	22,89	081	16,74	081	37,30	081	16,64	081
8,2	165	109	18,34	082	23,21	082	17,17	082	37,51	082	17,07	082
8,3	165	109	19,50	083	23,74	083	17,17	083	38,15	083	17,27	083
8,4	165	109	20,87	084	24,38	084	18,12	084	39,10	084	17,70	084
8,5	165	109	17,91	085	20,46	085	16,54	085	36,35	085	16,21	085
8,6	175	115	17,91	086	25,01	086	18,34	086	39,96	086	17,91	086
8,7	175	115	18,01	087	25,22	087	18,34	087	40,27	087		
8,8	175	115	18,34	088	26,07	088	18,87	088	41,33	088	18,44	088
8,9	175	115	18,54	089	26,81	089	19,93	089	43,13	089	19,50	089
9,0	175	115	18,76	090	20,13	090	15,26	090	33,59	090	15,26	090
9,1	175	115	18,76	091	27,55	091	20,66	091	45,04	091	20,46	091
9,2	175	115	18,76	092	29,24	092	23,85	092			21,93	092
9,3	175	115	18,76	093	29,89	093	24,06	093			22,89	093
9,4	175	115	18,76	094	30,20	094					24,06	094
9,5	175	115	18,76	095	26,60	095	23,21	095	50,76	095	22,89	095
9,6	184	121	19,93	096			27,87	096			28,40	096
9,7	184	121	20,87	097	36,98	097	29,89	097	65,81	097		

Steel	●	●	●	●	
Stainless steel	○	●			
Cast iron	●	●	●	●	
Non ferrous metals	○	●	●	●	●
Heat resistant alloys					

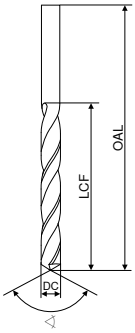
1) uncoated

→ v_c Page 50

Continued on next page

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTL	WTW
	TiN	F.-nit	F.-nit	TiN	
					
	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E	HSS-E	HSS	HSS	HSS
	T2	T2	T2	T2	T2
DC h8	Article no. 10 270 ...	Article no. 10 225 ...	Article no. 10 215 ...	Article no. 10 210 ...	Article no. 10 200 ...
mm	EUR	EUR	EUR	EUR	EUR

DC h8 mm	OAL mm	LCF mm	10 270 ... EUR		10 225 ... EUR		10 215 ... EUR		10 210 ... EUR		10 200 ... EUR	
9,8	184	121	22,36	098	36,98	098	31,37	098	69,10	098	29,89	098
9,9	184	121	24,27	099	36,98	099	33,38	099	73,98	099		
10,0	184	121	26,28	100	30,20	100	18,65	100	40,70	100	17,70	100
10,1	184	121	28,83	101			41,12	101	90,19	101		
10,2	184	121	30,63	102	39,00	102	33,06	102	72,81	102	32,85	102
10,3	184	121	33,17	103			49,49	103			51,50	103
10,4	184	121	33,17	104			59,46	104			53,73	104
10,5	184	121	33,59	105	41,43	105	33,38	105	73,98	105	33,91	105
10,6	184	121							124,00	106		
10,8	195	128			46,63	108	48,86	108			46,84	108
11,0	195	128	39,96	110	45,78	110	27,66	110	60,62	110	27,55	110
11,5	195	128	40,37	115	55,95	115	46,42	115	101,30	115	45,04	115
11,6	195	128									60,62	116
11,8	195	128			61,79	118	55,95	118			54,26	118
12,0	205	134	40,80	120	56,38	120	33,91	120	75,24	120	34,65	120
12,2	205	134									63,59	122
12,3	205	134									54,26	123
12,5	205	134	44,72	125			35,18	125	76,94	125	35,71	125
13,0	205	134	48,64	130			36,57	130	80,86	130	38,79	130
13,5	214	140	49,49	135			68,46	135				
14,0	214	140	51,50	140			61,36	140	139,90	140	64,54	140

Steel	●	●	●	●	
Stainless steel	○	●			
Cast iron	●	●	●	●	
Non ferrous metals	○	●	●	●	●
Heat resistant alloys					

1) uncoated

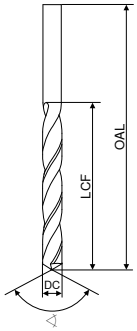
→ v_c Page 50

Twist drills, DIN 1869, extra-long, series 1

> 10xD

WTL

F.-nit





130°
HSS

DC h8	OAL	LCF	T2 Article no. 10 235 ...	
mm	mm	mm	EUR	
2,0	125	85	8,54	020 1)
2,1	125	85	10,59	021 1)
2,2	135	90	10,59	022 1)
2,3	135	90	10,59	023 1)
2,4	140	95	11,13	024
2,5	140	95	8,54	025
2,6	140	95	11,13	026
2,7	150	100	11,66	027
2,8	150	100	11,66	028
2,9	150	100	11,66	029
3,0	150	100	9,74	030
3,1	155	105	12,19	031
3,2	155	105	12,19	032
3,3	155	105	12,19	033
3,4	165	115	12,29	034
3,5	165	115	9,74	035
3,6	165	115	12,29	036
3,7	165	115	13,68	037
3,8	175	120	13,68	038
3,9	175	120	13,68	039
4,0	175	120	9,94	040
4,1	175	120	13,68	041
4,2	175	120	13,88	042
4,3	185	125	15,05	043
4,4	185	125	15,05	044
4,5	185	125	10,81	045
4,6	185	125	15,05	046
4,7	185	125	15,48	047
4,8	195	135	15,79	048
4,9	195	135	16,54	049
5,0	195	135	11,45	050
5,1	195	135	17,27	051
5,2	195	135	17,70	052
5,3	195	135	17,70	053
5,4	205	140	17,70	054
5,5	205	140	12,62	055
5,6	205	140	17,70	056
5,7	205	140	17,91	057
5,8	205	140	18,23	058
5,9	205	140	18,23	059
6,0	205	140	12,62	060
6,1	215	150	19,50	061
6,2	215	150	19,18	062
6,3	215	150	20,46	063
6,4	215	150	21,30	064
6,5	215	150	17,27	065
6,6	215	150	21,30	066
6,7	215	150	22,57	067
6,8	225	155	22,26	068
6,9	225	155	23,21	069
7,0	225	155	17,91	070
7,1	225	155	26,07	071
7,3	225	155	26,07	073
7,4	225	155	26,07	074
7,5	225	155	20,13	075
7,7	240	165	27,87	077
7,8	240	165	29,24	078
7,9	240	165	29,89	079
8,0	240	165	22,26	080
8,1	240	165	34,34	081
8,2	240	165	34,34	082
8,3	240	165	34,34	083
8,4	240	165	36,04	084
8,5	240	165	28,71	085
8,6	250	175	36,77	086
8,7	250	175	38,79	087
8,8	250	175	40,16	088
9,0	250	175	30,63	090
9,2	250	175	45,57	092
9,4	250	175	48,86	094
9,5	250	175	35,39	095
9,6	265	185	50,23	096
9,7	265	185	50,23	097
9,8	265	185	50,87	098
9,9	265	185	50,87	099
10,0	265	185	31,69	100
10,5	265	185	56,38	105
11,0	280	195	42,18	110
11,5	280	195	51,82	115
12,0	295	205	48,11	120
12,5	295	205	59,03	125
13,0	295	205	58,50	130

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

1) uncoated

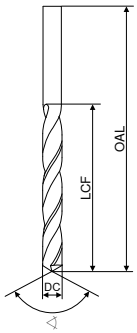
→ v_c Page 51

Twist drills, DIN 1869, extra-long, series 2

> 10xD

WTL

F.-nit





HSS

DC h8	OAL	LCF	T2 Article no. 10 245 ...	
mm	mm	mm	EUR	
2,0	160	110	17,27	020 1)
2,5	180	120	17,27	025
3,0	190	130	13,35	030
3,5	210	145	13,46	035
4,0	220	150	14,20	040
4,5	235	160	15,05	045
5,0	245	170	15,05	050
5,5	260	180	18,44	055
6,0	260	180	18,23	060
6,5	275	190	20,66	065
7,0	290	200	22,89	070
7,5	290	200	26,81	075
8,0	305	210	26,60	080
8,5	305	210	41,86	085
9,0	320	220	40,80	090
9,5	320	220	47,48	095
10,0	340	235	43,02	100
10,5	340	235	62,42	105
11,0	365	250	60,93	110
11,5	365	250	72,06	115
12,0	375	260	69,94	120
12,5	375	260	69,94	125
13,0	375	260	71,53	130

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

1) uncoated

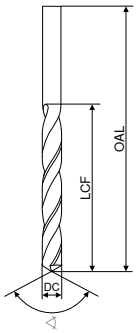
→ v_c Page 51

Twist drills, DIN 1869, extra-long, series 3

> 10xD

WTL

F.-nit





HSS

DC h8	OAL	LCF	T2 Article no. 10 255 ...	
mm	mm	mm	EUR	
2,5	225	150	22,26	025
3,0	240	160	22,26	030
3,5	265	180	17,91	035
4,0	280	190	17,91	040
4,5	295	200	21,73	045
5,0	315	210	21,73	050
5,5	330	225	23,21	055
6,0	330	225	24,69	060
6,5	350	235	26,60	065
7,0	370	250	33,91	070
7,5	370	250	39,00	075
8,0	390	265	39,96	080
8,5	390	265	50,55	085
9,0	410	280	54,26	090
9,5	410	280	64,12	095
10,0	430	295	63,59	100
10,5	430	295	69,31	105
11,0	455	310	73,55	110
11,5	455	310	81,49	115
12,0	480	330	86,90	120
12,5	480	330	81,49	125
13,0	480	330	82,35	130

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

→ v_c Page 51

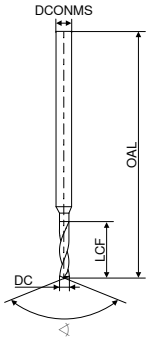
Micro drills, DIN 1899

- 4 facet
- with reinforced shank

Scope of supply:

- pack quantity 5 pieces
- price per piece

N





118°
HSS-E-PM

DC $_{-0,004}$	OAL	LCF	DCONMS $_{h8}$	T2 Article no. 10 103 ...	
mm	mm	mm	mm	EUR	
0,15	25	0,8	1,0	6,23	00150
0,20	25	1,5	1,0	5,00	00200
0,25	25	1,9	1,0	3,41	00250
0,30	25	1,9	1,0	3,96	00300
0,35	25	2,4	1,0	3,52	00350
0,40	25	3,0	1,0	3,52	00400
0,45	25	3,0	1,0	3,58	00450
0,50	25	3,4	1,0	3,52	00500
0,55	25	3,9	1,0	3,58	00550
0,60	25	3,9	1,0	3,56	00600
0,65	25	4,2	1,0	3,52	00650
0,70	25	4,8	1,0	3,28	00700
0,75	25	4,8	1,0	3,33	00750
0,80	25	5,3	1,5	3,66	00800
0,85	25	5,3	1,5	3,72	00850
0,90	25	6,0	1,5	3,72	00900
0,95	25	6,0	1,5	3,74	00950
1,00	25	6,8	1,5	3,74	01000
1,05	25	6,8	1,5	3,72	01050
1,10	25	7,6	1,5	3,83	01100
1,15	25	7,6	1,5	3,83	01150
1,20	25	8,5	1,5	3,74	01200
1,25	25	8,5	1,5	3,72	01250
1,30	25	8,5	1,5	3,85	01300
1,35	25	9,5	1,5	3,83	01350
1,40	25	9,5	1,5	3,74	01400
1,45	25	9,5	1,5	3,72	01450

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

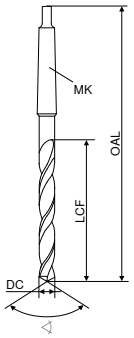
→ v_c Page 52

Twist drill, factory standard, short

≤ 3xD

WT

vap.





MK
130°
HSS-E

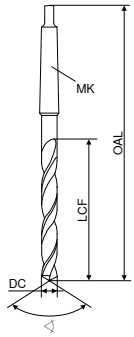
DC $_{h8}$	OAL	LCF	MK	T2 Article no. 10 285 ...	
mm	mm	mm		EUR	
10,0	138	57	1	38,57	100
10,5	138	57	1	41,86	105
11,0	142	61	1	34,12	110
11,5	142	61	1	44,72	115
12,0	147	66	1	38,90	120
12,5	147	66	1	41,86	125
13,0	147	66	1	40,49	130
13,5	168	70	2	51,62	135
14,0	168	70	2	51,40	140
14,5	172	74	2	55,01	145
15,0	172	74	2	53,52	150
15,5	176	78	2	80,33	155
16,0	176	78	2	51,62	160
16,5	179	81	2	81,60	165
17,0	179	81	2	54,26	170
17,5	183	85	2	85,52	175
18,0	183	85	2	57,54	180
18,5	186	88	2	86,15	185
19,0	186	88	2	62,95	190
19,5	212	91	3	102,00	195
20,0	212	91	3	73,23	200
21,0	216	95	3	82,35	210
22,0	219	98	3	86,15	220
23,0	222	101	3	91,99	230
24,0	225	104	3	94,21	240
25,0	225	104	3	98,13	250
26,0	256	107	4	137,80	260
27,0	259	110	4	145,20	270
28,0	259	110	4	148,40	280
30,0	263	114	4	162,10	300

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	○

→ v_c Page 47

Twist drills, DIN 345

≤ 5xD



N
vap.



MK
118°
HSS

WTL
F.-nit



MK
130°
HSS-E

DC h8	OAL	LCF	MK	T2 Article no. 10 265 ...		T2 Article no. 10 280 ...	
mm	mm	mm		EUR		EUR	
10,00	168	87	1	15,79	100	37,41	100
10,20	168	87	1	18,34	102	38,79	102
10,50	168	87	1	16,54	105	38,79	105
10,80	175	94	1	21,73	108	42,49	108
11,00	175	94	1	17,27	110	40,59	110
11,20	175	94	1	23,10	112		
11,50	175	94	1	19,50	115	49,28	115
11,80	175	94	1	24,69	118		
12,00	182	101	1	17,80	120	42,49	120
12,20	182	101	1	25,22	122	46,52	122
12,50	182	101	1	18,54	125	44,29	125
12,80	182	101	1	25,44	128		
13,00	182	101	1	19,18	130	47,80	130
13,20	182	101	1	26,18	132		
13,50	189	108	1	21,93	135	56,59	135
13,80	189	108	1	27,55	138		
14,00	189	108	1	20,34	140	51,40	140
14,25	212	114	2	30,63	142	76,30	142
14,50	212	114	2	21,52	145	59,87	145
14,75	212	114	2	32,85	147		
15,00	212	114	2	22,57	150	61,36	150
15,25	218	120	2	30,20	152	78,31	152
15,50	218	120	2	24,38	155	58,07	155
15,75	218	120	2	27,55	157	65,18	157
16,00	218	120	2	24,38	160	63,59	160
16,25	223	125	2	37,20	162		
16,50	223	125	2	26,38	165	65,18	165 1)
16,75	223	125	2	30,20	167		
17,00	223	125	2	27,24	170	61,36	170 1)
17,25	228	130	2	34,12	172	71,96	172 1)
17,50	228	130	2	27,77	175	67,61	175 1)
17,75	228	130	2	34,44	177	73,33	177 1)
18,00	228	130	2	29,46	180	69,52	180 1)
18,25	233	135	2	35,39	182		
18,50	233	135	2	31,69	185	67,61	185 1)
18,75	233	135	2	37,20	187		
19,00	233	135	2	31,47	190	71,96	190 1)
19,25	238	140	2	39,53	192		
19,50	238	140	2	36,45	195		
19,75	238	140	2	41,33	197		
20,00	238	140	2	33,59	200	77,37	200 1)
20,25	243	145	2	45,25	202		
20,50	243	145	2	35,61	205		
20,75	243	145	2	45,68	207		
21,00	243	145	2	37,94	210	91,67	210 1)
21,25	248	150	2	47,05	212		
21,50	248	150	2	43,35	215		
21,75	248	150	2	49,28	217		
22,00	248	150	2	42,29	220	98,56	220 1)
22,25	248	150	2	50,55	222		
22,50	253	155	2	45,68	225	120,90	225 1)
22,75	253	155	2	51,82	227		
23,00	253	155	2	49,60	230	114,50	230 1)
23,50	276	155	3	49,28	235		
23,75	281	160	3	67,71	237		
24,00	281	160	3	51,62	240	124,00	240 1)
24,50	281	160	3	53,62	245		
24,75	281	160	3	74,51	247		
25,00	281	160	3	56,91	250	127,20	250 1)
25,50	286	165	3	59,13	255		
25,75	286	165	3	77,15	257		
26,00	286	165	3	65,38	260	147,30	260 1)
26,50	286	165	3	63,06	265		
26,75	291	170	3	99,62	267		
27,00	291	170	3	65,38	270	169,50	270 1)
27,50	291	170	3	67,30	275		
27,75	291	170	3	95,91	277		
28,00	291	170	3	72,06	280		
28,50	296	175	3	88,17	285		
28,75	296	175	3	99,62	287		
29,00	296	175	3	78,21	290		
29,50	296	175	3	79,90	295		
29,75	296	175	3	102,00	297		
30,00	296	175	3	78,21	300		
30,50	301	180	3	95,17	305		
31,00	301	180	3	92,41	310		
31,50	301	180	3	105,00	315		
32,00	334	185	4	97,18	320		
32,50	334	185	4	112,30	325		
33,00	334	185	4	104,30	330		
33,50	334	185	4	115,50	335		
34,00	339	190	4	121,90	340		
34,50	339	190	4	136,80	345		
35,00	339	190	4	124,00	350		
35,50	339	190	4	144,10	355		
36,00	344	195	4	135,60	360		
36,50	344	195	4	149,50	365		
37,00	344	195	4	147,30	370		
37,50	344	195	4	165,40	375		
38,00	349	200	4	155,80	380		
38,50	349	200	4	185,40	385		
39,00	349	200	4	171,70	390		
39,50	349	200	4	215,20	395		
40,00	349	200	4	178,10	400		
41,00	354	205	4	187,60	410		
42,00	354	205	4	205,60	420		
43,00	359	210	4	219,30	430		
44,00	359	210	4	231,00	440		
45,00	359	210	4	241,60	450		
46,00	364	215	4	249,10	460		
47,00	364	215	4	266,00	470		
48,00	369	220	4	272,40	480		
49,00	369	220	4	285,10	490		
50,00	369	220	4	294,60	500		
51,00	412	225	5	354,00	510		
52,00	412	225	5	379,40	520		
53,00	412	225	5	402,70	530		
54,00	417	230	5	413,30	540		
55,00	417	230	5	420,70	550		
56,00	417	230	5	431,30	560		
57,00	422	235	5	449,40	570		
58,00	422	235	5	480,10	580		
59,00	422	235	5	503,40	590		
60,00	422	235	5	520,30	600		

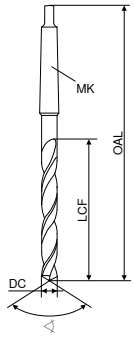
Steel	●	●
Stainless steel		○
Cast iron	●	○
Non ferrous metals	○	○
Heat resistant alloys		

1) vaporised

→ v_c Page 49

Twist drills, DIN 341, long

≤ 10xD



N
vap.



MK
118°
HSS

WTL
F.-nit



MK
130°
HSS-E

DC h8 mm	OAL mm	LCF mm	MK	T2 Article no. 10 295 ... EUR		T2 Article no. 10 297 ... EUR	
10,00	197	116	1	20,99	100	38,79	100
10,20	197	116	1	23,32	102	36,88	102
10,50	197	116	1	21,30	105	41,76	105
10,80	206	125	1	27,24	108		
11,00	206	125	1	21,93	110	40,90	110
11,20	206	125	1	29,24	112	37,20	112
11,50	206	125	1	21,93	115	41,96	115
11,80	206	125	1	29,57	118	37,20	118
12,00	215	134	1	21,93	120	41,96	120
12,20	215	134	1	29,24	122	36,57	122
12,50	215	134	1	22,15	125	42,60	125
12,80	215	134	1	31,69	128	36,88	128
13,00	215	134	1	22,15	130	44,29	130
13,20	215	134	1	31,69	132		
13,50	223	142	1	24,69	135	46,31	135
13,80	223	142	1	40,59	138	41,76	138
14,00	223	142	1	25,01	140	50,97	140
14,25	245	147	2	39,00	142		
14,50	245	147	2	31,69	145	49,60	145
14,75	245	147	2	39,00	147		
15,00	245	147	2	31,37	150	52,46	150
15,25	251	153	2	39,00	152		
15,50	251	153	2	30,52	155	51,62	155
15,75	251	153	2	39,43	157		
16,00	251	153	2	32,85	160	53,41	160
16,25	257	159	2	44,29	162		
16,50	257	159	2	34,44	165	53,73	165 1)
16,75	257	159	2	42,49	167		
17,00	257	159	2	34,12	170	60,83	170 1)
17,25	263	165	2	48,21	172		
17,50	263	165	2	39,00	175	58,29	175 1)
17,75	263	165	2	48,01	177		
18,00	263	165	2	38,79	180	63,59	180 1)
18,25	269	171	2	57,12	182		
18,50	269	171	2	43,35	185	58,29	185 1)
18,75	269	171	2	54,79	187		
19,00	269	171	2	42,60	190	71,96	190 1)
19,25	275	177	2	60,09	192		
19,50	275	177	2	49,28	195	71,53	195 1)
19,75	275	177	2	67,18	197		
20,00	275	177	2	46,74	200	76,73	200 1)
20,50	282	184	2	58,81	205	75,67	205 1)
21,00	282	184	2	53,41	210	90,40	210 1)
21,50	289	191	2	63,59	215		
21,75	289	191	2	84,99	217		
22,00	289	191	2	58,29	220	100,30	220 1)
22,50	296	198	2	64,75	225		
23,00	296	198	2	60,62	230		
23,50	319	198	3	73,86	235		
24,00	327	206	3	74,51	240	127,20	240 1)
24,50	327	206	3	80,01	245		
25,00	327	206	3	75,04	250	132,50	250 1)
25,50	335	214	3	89,97	255		
26,00	335	214	3	86,05	260	153,70	260 1)
26,50	335	214	3	92,30	265		
27,00	343	222	3	92,30	270		
27,50	343	222	3	114,50	275		
28,00	343	222	3	102,70	280		
29,00	351	230	3	118,70	290		
29,50	351	230	3	134,60	295		
30,00	351	230	3	118,70	300		
30,50	360	239	3	150,50	305		
31,00	360	239	3	143,10	310		
31,50	360	239	3	159,00	315		
32,00	397	248	4	153,70	320		
33,00	397	248	4	153,70	330		
33,50	397	248	4	179,10	335		
34,00	406	257	4	189,70	340		
35,00	406	257	4	184,40	350		
36,00	416	267	4	213,00	360		
37,00	416	267	4	240,60	370		
37,50	416	267	4	258,50	375		
38,00	426	277	4	229,90	380		
39,00	426	277	4	245,90	390		
40,00	426	277	4	258,50	400		
42,00	436	287	4	292,50	420		
43,00	447	298	4	313,70	430		
44,00	447	298	4	313,70	440		
45,00	447	298	4	327,50	450		
50,00	470	321	4	430,30	500		

Steel	●	●
Stainless steel		●
Cast iron	●	●
Non ferrous metals	○	●
Heat resistant alloys		

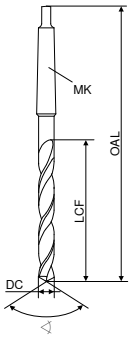
1) vaporised

→ v_c Page 50

Twist drills, DIN 1870, extra-long, series 1

> 10xD

WTL





HSS

DC h8	OAL	LCF	MK	T2 Article no. 10 305 ...	
mm	mm	mm		EUR	
10,0	285	185	1	39,63	100 1)
10,5	285	185	1	48,21	105 1)
11,0	300	195	1	46,31	110 1)
11,5	300	195	1	48,64	115 1)
12,0	310	205	1	51,62	120 1)
12,5	310	205	1	53,20	125 1)
13,0	310	205	1	53,73	130 1)
13,5	325	220	1	61,99	135 1)
14,0	325	220	1	60,30	140 1)
14,5	340	220	2	62,42	145 1)
15,0	340	220	2	65,71	150 1)
15,5	355	230	2	71,96	155 1)
16,0	355	230	2	68,99	160 1)
16,5	355	230	2	69,52	165 2)
17,0	355	230	2	70,69	170 2)
17,5	370	245	2	74,51	175 2)
18,0	370	245	2	76,73	180 2)
18,5	370	245	2	84,99	185 2)
19,0	370	245	2	86,80	190 2)
19,5	385	260	2	93,68	195 2)
20,0	385	260	2	99,09	200 2)
21,0	385	260	2	114,50	210 2)
22,0	405	270	2	119,80	220 2)
23,0	405	270	2	140,90	230 2)
24,0	440	290	3	156,80	240 2)
25,0	440	290	3	159,00	250 2)
26,0	440	290	3	172,70	260 2)
28,0	460	305	3	200,30	280 2)
30,0	460	305	3	229,90	300 2)

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

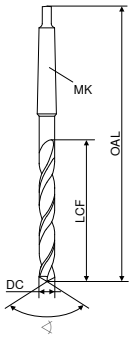
1) nitrided chamfer
2) vaporised

→ v_c Page 51

Twist drills, DIN 1870, extra-long, series 2

> 10xD

WTL





HSS

DC h8	OAL	LCF	MK	T2 Article no. 10 315 ...	
mm	mm	mm		EUR	
10,0	360	235	1	56,91	100 1)
10,5	360	235	1	71,53	105 1)
11,0	375	250	1	65,18	110 1)
11,5	375	250	1	69,52	115 1)
12,0	395	260	1	79,27	120 1)
13,0	395	260	1	83,09	130 1)
13,5	410	275	1	88,60	135 1)
14,0	410	275	1	88,60	140 1)
14,5	425	275	2	89,34	145 1)
15,0	425	275	2	89,97	150 1)
15,5	445	295	2	93,68	155 1)
16,0	445	295	2	92,30	160 1)
16,5	445	295	2	105,30	165 2)
17,0	445	295	2	99,09	170 2)
17,5	465	310	2	107,00	175 2)
18,0	465	310	2	111,30	180 2)
18,5	465	310	2	119,80	185 2)
19,0	465	310	2	121,90	190 2)
19,5	490	325	2	138,80	195 2)
20,0	490	325	2	137,80	200 2)
21,0	490	325	2	147,30	210 2)
22,0	515	345	2	177,00	220 2)
23,0	515	345	2	179,10	230 2)
24,0	555	365	3	200,30	240 2)
25,0	555	365	3	202,40	250 2)
26,0	555	365	3	237,40	260 2)
28,0	580	385	3	275,50	280 2)
30,0	580	385	3	319,00	300 2)

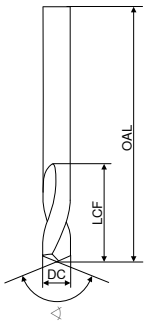
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

1) nitrided chamfer
2) vaporised

→ v_c Page 51

NC spot drills, factory standard

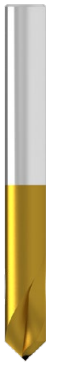
▲ helical flutes





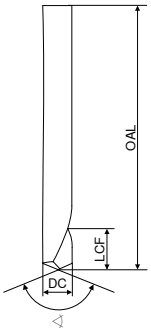






DC h6	OAL	LCF		120° HSS T2 Article no. 10 510 ...		120° HSS T2 Article no. 10 512 ...		90° HSS T2 Article no. 10 520 ...		90° HSS T2 Article no. 10 522 ...	
mm	mm	mm		EUR		EUR		EUR		EUR	
3	46	12,0		6,84	030	9,93	030	6,84	030	9,93	030
4	55	12,0		6,95	040	10,16	040	6,95	040	10,16	040
5	62	14,0		7,27	050	10,58	050	7,27	050	10,58	050
6	66	16,0		7,45	060	10,70	060	7,45	060	10,70	060
8	79	21,0		12,50	080	18,12	080	12,50	080	18,12	080
10	89	25,0		13,88	100	20,03	100	13,88	100	20,03	100
12	102	30,0		20,13	120	29,36	120	20,13	120	29,36	120
16	115	37,5		26,38	160	38,37	160	26,38	160	38,37	160
20	131	45,0		42,49	200	61,68	200	42,49	200	61,68	200

▲ with clamping flat to DIN 1835 B











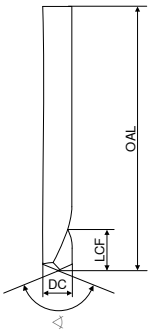
DC h6	OAL	LCF		120° HSS T2 Article no. 10 511 ...		120° HSS T2 Article no. 10 513 ...		90° HSS T2 Article no. 10 521 ...		90° HSS T2 Article no. 10 523 ...	
mm	mm	mm		EUR		EUR		EUR		EUR	
6	66	7,0		7,66	060	10,70	060	7,66	060	10,70	060
8	79	9,0		10,81	080	15,26	080	10,81	080	15,26	080
10	89	11,5		12,08	100	16,85	100	12,08	100	16,85	100
12	102	14,0		16,74	120	23,95	120	16,74	120	23,95	120
16	115	18,0		21,93	160	31,26	160	21,93	160	31,26	160
20	131	23,0		31,26	200	45,57	200	31,26	200	45,57	200

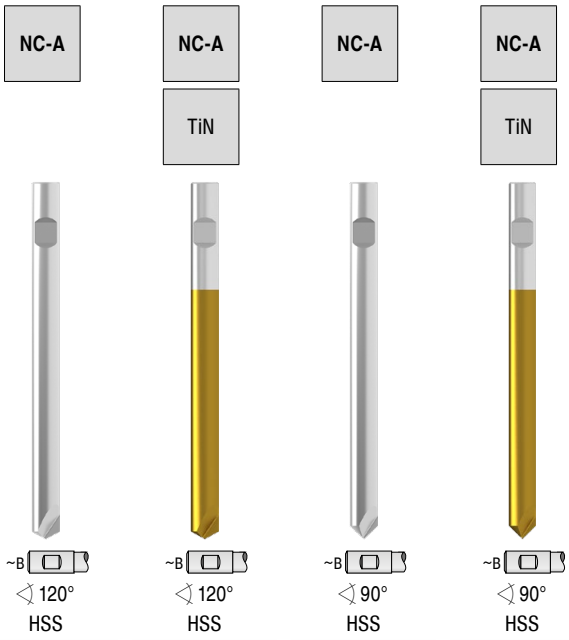
Steel	**15-35**	**25-55**	**15-35**	**25-55**
Stainless steel	10-15	20-25	10-15	20-25
Cast iron	**20-35**	**30-55**	**20-35**	**30-55**
Non ferrous metals	50-70	65-85	50-70	65-85
Heat resistant alloys				

Suitable only for spot drilling!

NC spot Drill Factory Standard Long

▲ with clamping flat to DIN 1835 B





DC_{h6}	OAL	LCF	T2 Article no. 10 530 ...		T2 Article no. 10 532 ...		T2 Article no. 10 526 ...		T2 Article no. 10 528 ...	
mm	mm	mm	EUR		EUR		EUR		EUR	
6	93	7,0	9,40	060	13,35	060	9,40	060	13,35	060
8	117	9,0	14,62	080	21,09	080	14,62	080	21,09	080
10	133	11,5	16,11	100	23,10	100	16,11	100	23,10	100
12	151	14,0	19,18	120	27,34	120	19,18	120	27,34	120
16	178	18,0	29,36	160	42,39	160	29,36	160	42,39	160
20	205	23,0	40,70	200	59,66	200	40,70	200	59,66	200

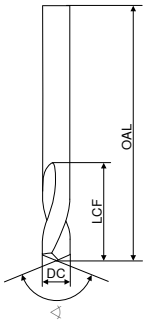
Steel	**15-35**	**25-55**	**15-35**	**25-55**
Stainless steel	10-15	20-25	10-15	20-25
Cast iron	**20-35**	**30-55**	**20-35**	**30-55**
Non ferrous metals	50-70	65-85	50-70	65-85
Heat resistant alloys				

Suitable only for spot drilling!

NC spot drills, factory standard, long

▲ helical flutes

NC-A





90°
HSS

DC h6	OAL	LCF	T2 Article no. 10 525 ...	
mm	mm	mm	EUR	
6,35	105	17	11,55	**025**
8,00	118	21	21,20	**030**
9,52	132	25	21,52	**040**
12,70	159	30	30,52	**050**
15,87	186	37	26,60	**060**
19,05	213	45	61,26	**075**

Steel	**15-35**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

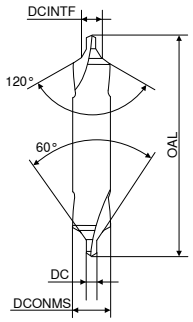
Suitable only for spot drilling!

Centre drills, DIN 333, form B

▲ with protective countersink 120°

ZB

ZB







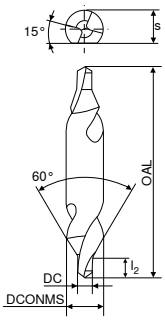
Right-hand
118°
HSS

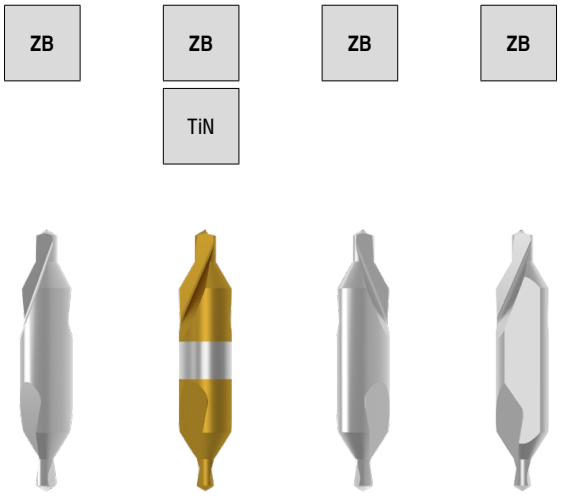
Left-hand
118°
HSS

DC	DCONMS h8	DCINTF k12	OAL	T2 Article no. 10 480 ...		T2 Article no. 10 485 ...	
mm	mm	mm	mm	EUR		EUR	
1,00	4,0	2,12	35,5	7,02	**100**	16,01	**100**
1,25	5,0	2,65	40,0	7,94	**125**	18,76	**125**
1,60	6,3	3,35	45,0	7,34	**160**	19,71	**160**
2,00	8,0	4,25	50,0	7,94	**200**	20,99	**200**
2,50	10,0	5,30	56,0	9,69	**250**	21,30	**250**
3,15	11,2	6,70	62,0	14,09	**315**	28,93	**315**
4,00	14,0	8,50	69,0	18,12	**400**	31,58	**400**
5,00	18,0	10,60	77,0	23,21	**500**	33,91	**500**

Steel	**15-35**	**15-35**
Stainless steel	10-15	10-15
Cast iron	**20-35**	**20-35**
Non ferrous metals	50-70	50-70
Heat resistant alloys		

Centre drills, DIN 333, form A



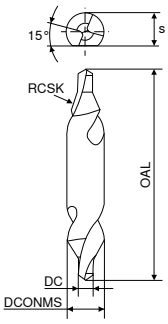


DC	s	DCONMS h8	OAL	l_2	Right-hand ◁ 118° HSS T2 Article no. 10 415 ...		Right-hand ◁ 118° HSS T2 Article no. 10 425 ...		Left-hand ◁ 118° HSS T2 Article no. 10 435 ...		Right-hand ◁ 118° HSS-E T2 Article no. 10 445 ...	
mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
0,50		3,15	25,0	0,8	5,16	**050** [2]	12,19	**050** [2]	7,02	**050** [2]		
0,80		3,15	25,0	1,1	4,96	**080** [2]	11,76	**080** [2]	6,90	**080** [2]		
1,00		3,15	31,5	1,3	4,50	**100**	10,81	**100**	6,23	**100**		
1,25		3,15	31,5	1,6	5,16	**125**	12,29	**125**	7,34	**125**		
1,60	3,25	4,00	35,5	2,0							5,55	**160** [1]
1,60		4,00	35,5	2,0	4,14	**160**	9,86	**160**	6,44	**160**		
2,00	4,20	5,00	40,0	2,5							5,68	**200** [1]
2,00		5,00	40,0	2,5	4,41	**200**	10,50	**200**	7,21	**200**		
2,50	5,35	6,30	45,0	3,1							6,58	**250** [1]
2,50		6,30	45,0	3,1	5,12	**250**	12,19	**250**	7,80	**250**		
3,15	6,95	8,00	50,0	3,9							8,65	**315** [1]
3,15		8,00	50,0	3,9	6,58	**315**	15,48	**315**	9,86	**315**		
4,00	8,40	10,00	56,0	5,0							12,62	**400** [1]
4,00		10,00	56,0	5,0	10,33	**400**	24,27	**400**	13,25	**400**		
5,00	10,95	12,50	63,0	6,3							18,44	**500** [1]
5,00		12,50	63,0	6,3	14,84	**500**	34,76	**500**	20,56	**500**		
6,30	14,00	16,00	71,0	8,0							30,94	**630** [1]
6,30		16,00	71,0	8,0	22,05	**630**	51,72	**630**	30,31	**630**		

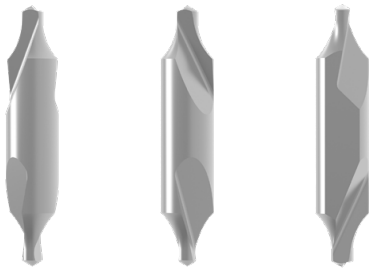
Steel	**15-35**	**25-55**	**15-35**	**15-35**
Stainless steel	10-15	20-25	10-15	10-15
Cast iron	**20-35**	**30-55**	**20-35**	**20-35**
Non ferrous metals	50-70	65-85	50-70	50-70
Heat resistant alloys				

1) with flat
2) Single ended

Centre drills, DIN 333, form R



ZB ZB ZB



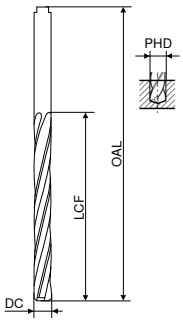
DC	s	DCONMS h8	OAL	RCSK	Right-hand ◁ 118° HSS T2 Article no. 10 455 ...		Left-hand ◁ 118° HSS T2 Article no. 10 475 ...		Right-hand ◁ 118° HSS T2 Article no. 10 465 ...	
mm	mm	mm	mm	mm	EUR		EUR		EUR	
0,50		3,15	25,0	2,00	5,16	**050** [2]				
0,80		3,15	25,0	2,50	4,96	**080** [2]	9,86	**080** [2]		
1,00		3,15	31,5	2,90	4,44	**100**	7,70	**100**		
1,25		3,15	31,5	3,15	5,06	**125**	9,24	**125**		
1,60	3,25	4,00	35,5	4,00					5,55	**160** [1]
1,60		4,00	35,5	4,00	4,14	**160**	7,51	**160**		
2,00	4,20	5,00	40,0	5,00					5,68	**200** [1]
2,00		5,00	40,0	5,00	4,41	**200**	7,70	**200**		
2,50	5,35	6,30	45,0	6,30					6,58	**250** [1]
2,50		6,30	45,0	6,30	5,12	**250**	7,94	**250**		
3,15	6,95	8,00	50,0	8,00					8,46	**315** [1]
3,15		8,00	50,0	8,00	6,58	**315**	11,02	**315**		
4,00	8,40	10,00	56,0	10,00					12,93	**400** [1]
4,00		10,00	56,0	10,00	9,57	**400**	16,01	**400**		
5,00	10,95	12,50	63,0	12,50					18,44	**500** [1]
5,00		12,50	63,0	12,50	14,52	**500**	23,42	**500**		
6,30	14,00	16,00	71,0	16,00					30,94	**630** [1]
6,30		16,00	71,0	16,00	22,05	**630**				

Steel	**15-35**	**15-35**	**15-35**
Stainless steel	10-15	10-15	10-15
Cast iron	**20-35**	**20-35**	**20-35**
Non ferrous metals	50-70	50-70	50-70
Heat resistant alloys			

1) with flat
2) Single ended

Core drills (spiral countersinks)

▲ with cylindrical shank, DIN 344

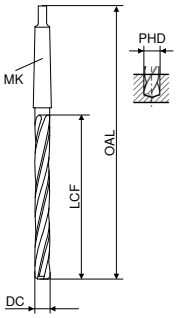




DC h8	OAL	LCF	PHD	T2 Article no. 10 226 ...	
mm	mm	mm	mm	EUR	
3,80	96	64	2,8	20,99	038
4,00	96	64	2,8	20,46	040
4,80	108	74	3,5	15,26	048
5,00	108	74	3,5	15,05	050
5,80	116	80	4,2	15,26	058
6,00	116	80	4,2	15,05	060
6,80	133	93	4,9	17,17	068
7,00	133	93	4,9	17,17	070
7,80	142	100	5,6	19,71	078
8,00	142	100	5,6	19,40	080
8,80	151	107	6,3	20,99	088
9,00	151	107	6,3	20,46	090
9,80	162	116	7,0	23,21	098
10,00	162	116	7,0	22,89	100
10,75	173	125	7,7	31,26	107
11,00	173	125	7,7	27,55	110
11,75	184	134	8,4	31,58	117
12,00	184	134	8,4	28,40	120

Steel	**15-35**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	**50-80**
Heat resistant alloys	14-28

Core drills (spiral countersinks)





DC h8	OAL	LCF	PHD	MK	T2 Article no. 10 228 ...	
mm	mm	mm	mm		EUR	
10,00	168	87	7,0	1	27,55	100
10,75	175	94	7,7	1	33,28	107
11,00	175	94	7,7	1	29,57	110
11,75	182	101	8,4	1	33,28	117
12,00	182	101	8,4	1	29,57	120
12,75	182	101	9,1	1	36,24	127
13,00	182	101	9,1	1	32,43	130
13,75	189	108	9,8	1	36,57	137
14,00	189	108	9,8	1	32,96	140
14,75	212	114	10,5	2	41,12	147
15,00	212	114	10,5	2	36,57	150
15,75	218	120	11,2	2	42,60	157
16,00	218	120	11,2	2	38,15	160
16,75	223	125	11,9	2	45,47	167
17,00	223	125	11,9	2	40,37	170
17,75	228	130	12,6	2	46,63	177
18,00	228	130	12,6	2	41,12	180
18,70	233	135	13,3	2	46,95	187
19,00	233	135	13,3	2	46,31	190
19,70	238	140	14,0	2	46,95	197
20,00	238	140	14,0	2	46,31	200
20,70	243	145	14,6	2	54,79	207
21,00	243	145	14,6	2	54,15	210
21,70	248	150	15,3	2	55,42	217
22,00	248	150	15,3	2	54,58	220
22,70	253	155	16,0	2	61,15	227
23,00	253	155	16,0	2	60,40	230
23,70	281	160	16,6	3	63,79	237
24,00	281	160	16,6	3	62,42	240
24,70	281	160	17,3	3	67,83	247
25,00	281	160	17,3	3	66,66	250
25,70	286	165	18,0	3	71,00	257
26,00	286	165	18,0	3	70,05	260
26,70	291	170	18,6	3	82,88	267
27,00	291	170	18,6	3	81,29	270
27,70	291	170	19,3	3	83,62	277
28,00	291	170	19,3	3	82,23	280
28,70	296	175	20,0	3	91,56	287
29,00	296	175	20,0	3	90,72	290
29,70	296	175	20,5	3	95,27	297
30,00	296	175	20,5	3	94,01	300

Steel	**15-35**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	**50-80**
Heat resistant alloys	14-28

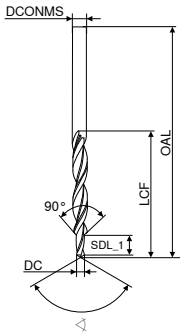
Stepped drills, DIN 8378

- countersinking angle 90°
- for tapping drill holes according to DIN 336, Table 1 with 90° chamfer and for through holes according to DIN EN 20273 – medium



SB

vap.



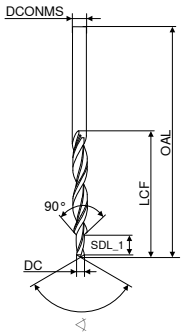


118°
HSS

For threads	DC h9	DCONMS h8	OAL	SDL_1	LCF	T2 Article no. 10 365 ... EUR	
	mm	mm	mm	mm	mm		
M3	2,5	3,4	70	8,8	39	17,70	030
M4	3,3	4,5	80	11,4	47	18,97	040
M5	4,2	5,5	93	13,6	57	19,50	050
M6	5,0	6,6	101	16,5	63	22,26	060
M8	6,8	9,0	125	21,0	81	25,01	080
M10	8,5	11,0	142	25,5	94	32,00	100
M12	10,2	13,5	160	30,0	108	41,12	120

- for through holes according to DIN EN 20273 – fine
- with 90° screw head countersink







118°
HSS

For threads	DC h9	DCONMS h8	OAL	SDL_1	LCF	T2 Article no. 10 355 ... EUR	
	mm	mm	mm	mm	mm		
M3	3,2	6,0	93	9	57	20,34	030
M4	4,3	8,0	117	11	75	24,16	040
M5	5,3	10,0	133	13	87	29,67	050
M6	6,4	11,5	142	15	94	33,91	060
M8	8,4	15,0	169	19	114	55,95	080
M10	10,5	19,0	198	23	135	86,37	100

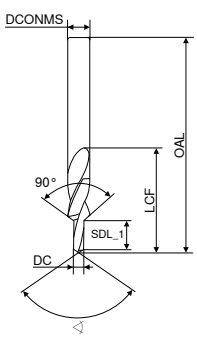
Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

Stepped drills, overall length to DIN 1897

- countersinking angle 90°
- for tapping drill holes according to DIN 336, Table 1 with 90° chamfer and for through holes according to DIN EN 20273 – medium



SB



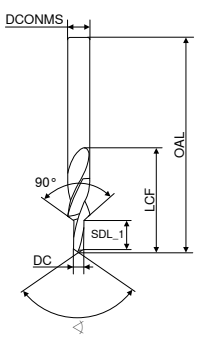


118°
HSS

For threads	DC h6	DCONMS h6	OAL	SDL_1	LCF	T2 Article no. 10 320 ... EUR	
	mm	mm	mm	mm	mm		
M3	2,5	3,4	52	8,8	20	11,34	030
M4	3,3	4,5	58	11,4	24	11,45	040
M5	4,2	5,5	66	13,6	28	12,29	050
M6	5,0	6,6	70	16,5	31	13,25	060
M8	6,8	9,0	84	21,0	40	15,26	080
M10	8,5	11,0	95	25,5	47	19,71	100
M12	10,2	13,5	107	30,0	54	25,32	120

- for through holes according to DIN EN 20273 – fine
- with 90° screw head countersink







118°
HSS

For threads	DC h6	DCONMS h6	OAL	SDL_1	LCF	T2 Article no. 10 330 ... EUR	
	mm	mm	mm	mm	mm		
M3	3,2	6,0	66	9	28	13,25	030
M4	4,3	8,0	79	11	37	14,73	040
M5	5,3	10,0	89	13	43	18,54	050
M6	6,4	11,5	95	15	47	20,56	060
M8	8,4	15,0	111	19	56	24,16	080
M10	10,5	19,0	127	23	64	35,71	100

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

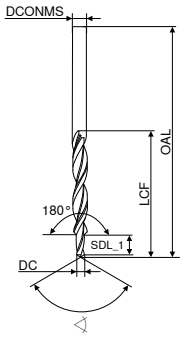
Stepped drills, DIN 8376

- countersinking angle 180°
- for through holes according to DIN EN 20273 – Medium
- for screw heads to DIN 974-1 – Series 1

DIN 8376

SB

vap.





118°
HSS

For threads	DC h9	DCONMS h8	OAL	SDL_1	LCF	T2 Article no. 10 375 ...	
	mm	mm	mm	mm	mm	EUR	
M3	3,4	6	93	9	57	20,34	**030** 1)
M4	4,5	8	117	11	75	24,16	**040**
M5	5,5	10	133	13	87	28,83	**050**
M6	6,6	11	142	15	94	33,17	**060**
M8	9,0	15	169	19	114	41,86	**080**
M10	11,0	18	191	23	130	87,11	**100**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

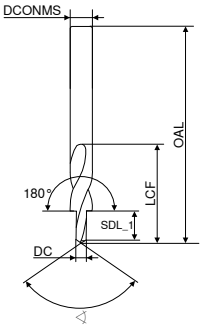
1) DCONMS not according to DIN 974-1

Stepped drills, factory standard, total length according to DIN 1897

- countersinking angle 180°
- for through holes according to DIN EN 20273 – Medium
- for screw heads to DIN 974-1 – Series 1

DIN 8376

SB





118°
HSS

For threads	DC h6	DCONMS h6	OAL	SDL_1	LCF	T2 Article no. 10 340 ...	
	mm	mm	mm	mm	mm	EUR	
M3	3,4	6	66	9	28	12,62	**030** 1)
M4	4,5	8	79	11	37	14,31	**040**
M5	5,5	10	89	13	43	17,70	**050**
M6	6,6	11	95	15	47	20,34	**060**
M8	9,0	15	111	19	56	26,07	**080**
M10	11,0	18	123	23	62	38,90	**100**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

1) DCONMS not according to DIN 974-1

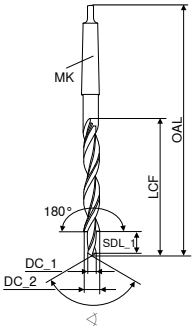
Stepped drills, DIN 8377

- countersinking angle 180°
- for through holes according to DIN EN 20273 – Medium
- for screw heads to DIN 974-1 – Series 1

DIN 8377

SB

vap.





HSS

For threads	DC_1 h9 mm	DC_2 mm	OAL mm	SDL_1 mm	LCF mm	MK	T2 Article no. 10 405 ... EUR	
M5	5,5	10	168	13	87	1	41,33	**050**
M6	6,6	11	175	15	94	1	41,86	**060**
M8	9,0	15	212	19	114	2	55,01	**080**
M10	11,0	18	228	23	130	2	73,55	**100**
M12	13,5	20	238	27	140	2	89,13	**120**
M14	15,5	24	281	31	160	3	114,50	**140**
M16	17,5	26	286	35	165	3	135,60	**160**
M18	20,0	30	296	39	175	3	156,80	**180**
M20	22,0	33	334	43	185	4	182,30	**200**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

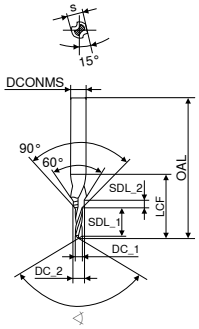
Stepped drills for centring, factory standard

- with flat
- countersinking angle 60°
- special drill for creating tapping drill holes with centring, 60° countersinking angle according to DIN 332, sheet 2, form D.
- point thinning ≥ Ø 3,3 mm



SB

vap.





118°
HSS

For threads	DC_1 h8	DCONMS h7	DC_2	s	OAL	SDL_1	LCF	SDL_2	T2 Article no. 10 350 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	EUR	
M4	3,3	8,0	4,3	6,75	63	11,0	23	1,60	48,86	**040**
M5	4,2	10,0	5,3	8,45	67	13,0	27	2,15	53,62	**050**
M6	5,0	12,5	6,4	10,45	71	16,0	33	2,90	58,71	**060**
M8	6,8	14,0	8,4	12,50	88	19,5	41	3,50	55,64	**080**
M10	8,5	16,0	10,5	14,85	94	23,0	47	4,70	63,79	**100**
M12	10,2	20,0	13,0	18,45	105	28,0	59	6,50	83,93	**120**
M16	14,0	25,0	17,0	23,40	132	33,0	67	8,30	117,60	**160**
M20	17,5	31,5	21,0	29,35	145	38,0	77	10,35	156,80	**200**
M24	21,0	40,0	25,0	36,50	160	45,0	90	12,00	251,20	**240**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values – Hole depth 3xD

	Type VX-TiN 10 122 ...		Type UNI-PM-TiN 10 113 ...		Type UNI-TiN 10 107 ...		Type N 10 105 ...		Type VA 10 130 ...		Type WNX 10 106 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**33–38**	5-6	**37-42**	**5-6**	**33–38**	5-6	**22–27**	5-6			**22–27**	5-6
1.2	**40–44**	6	**44-47**	**6-7**	**40–44**	6	**26–34**	5-6			**22–30**	5-6
1.3	**44**	6	**47**	**4**	**44**	6	**30**	6	36	6	**30**	6
1.4	**18–22**	3-4	**20-25**	**4-5**	**18–22**	3-4			18-32	3-4	**15–18**	3-4
1.5	**40–44**	6	**47**	**6**	**40–44**	6	**25**	5			**25**	5
1.6	**26**	5	**44**	**5**	**26**	5	**16**	5			**20**	5
1.7	**27**	4	**30**	**4**	**27**	4					**18**	4
1.8	**22**	3	**25**	**3**	**22**	3					**15**	3
1.9	**20**	4	**22**	**4**	**20**	4					**18**	4
1.10	**22**	4	**25**	**4**	**22**	4			20	4	**18**	4
1.11	**16**	3	**20**	**4**	**16**	3			15	3	**13**	4
1.12	**20**	4	**25**	**4**	**20**	4	**16**	4			**18**	4
1.13	**9**	2	**10**	**2**	**9**	2			12	2	**6**	2
1.14	**13**	3	**16**	**3**	**13**	3					**12**	3
1.15	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4			**13–18**	3-4
1.16	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4			**13–18**	3-4
2.1	**20**	4	19	**4**	**20**	4			**18**	4	13	4
2.2	**18**	4	17	**4**	**18**	4			**15**	4	11	4
2.3	**18**	4	16	**4**	**18**	4			**14**	3	12	4
2.4	**18**	4	15	**4**	**18**	4					11	4
2.5	**15**	3	14	**3**	**15**	3			**13**	3	10	3
2.6	**16**	3	15	**3**	**16**	3			**12**	3	9	3
2.7	**12**	3	13	**3**	**12**	3					8	3
3.1	**45**	6	**50**	6	**45**	6	**34**	6			31	6
3.2	**40**	6	**44**	6	**40**	6	**26**	6			28	6
3.3	**40**	6	**44**	6	**40**	6	**25**	6			21	6
3.4	**30**	6	**33**	6	**30**	6	**20**	6			17	6
3.5	**42**	6	**44**	6	**42**	6	**26**	6	45	6	21	6
3.6	**35**	6	**33**	6	**35**	6	**23**	6	32	6	18	6
3.7	**32**	6	**44**	6	**32**	6	**22**	6			24	6
3.8	**30**	6	**33**	6	**30**	6	**21**	6			23	6
4.1	**70**	7			**70**	7			90	7	**70**	7
4.2	**70**	7			**70**	7			90	7	**70**	7
4.3	**85**	7			**85**	7			80	7	**50**	7
4.4	**70**	7			**70**	7			70	6	**50**	6
4.5	**70**	6			**70**	6			70	6	**50**	6
4.6	**88**	5	88	5	**88**	5			40	5	**60**	5
4.7	**44**	5	50	5	**44**	5			38	4	**40**	4
4.8	**50**	4	33	5	**50**	4			48	4	**36**	4
4.9	**45**	4	29	5	**45**	4			43	4	**35**	4
4.10	**40**	4	28	5	**40**	4			37	4	**32**	4
4.11	**77**	5	84	5	**77**	5	36-40	4				
4.12	**44**	5	46	5	**44**	5			40	5	**40**	5
4.13	**15**	4	27	5	**15**	4					**28**	4
4.14	**25**	4	22	4	**25**	4	18	4	20	4	**18**	4
4.15												
4.16	**70**	6			**70**	6					**70**	6
4.17												
4.18	**14**	3			**14**	3						
4.19	**18**	4			**18**	4						
5.1	8	2			8	2						
5.2	10	2			10	2						
5.3	8	1			8	1						
5.4	8	1	5	**2**	8	1						
5.5	8	2			8	2						
5.6	8	2			8	2						
5.7	10	2	10	**2**	10	2			7	2	6	2
5.8	8	1			8	1						
5.9	8	1			8	1						
5.10	12	2			12	2			10	2		
5.11	8	2			8	2			6	2		
6.1	8	1			8	1						
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

	Type WT 10 109 ...		Type WT-TiN 10 110 ...		Type WTL-L 10 112 ...		Type WT-MK 10 285 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**30–35**	5	**35–45**	5	**22–27**	5-6	**30–35**	5
1.2	**30–35**	5	**35–45**	5	**26–34**	5-6	**30–40**	5
1.3	**36**	4	**44**	4	**30**	6	**36**	6
1.4	**15–20**	3-4	**18–22**	3-4	**13–16**	3-4	**15–20**	3-4
1.5	**40**	5	**44**	5	**25–34**	5	**35–40**	5
1.6	**35**	4	**38**	4	**16**	5	**35**	4
1.7	**20**	4	**27**	4	**16**	4	**20**	4
1.8	**16**	3	**22**	3	**13**	3	**16**	3
1.9	**16**	3	**18**	3	**16**	4	**16**	3
1.10	**16**	4	**22**	4	**16**	4	**16**	4
1.11	**12**	3	**18**	3	**11**	4	**12**	3
1.12	**15**	4	**17**	4	**16**	4	**20**	4
1.13	**8**	2	**9**	2	**12**	2	**8**	2
1.14	**12**	3	**15**	3	**12**	3	**15**	3
1.15	**12–15**	3-4	**14–19**	3-4	**12–16**	3-4	**12–20**	3-4
1.16	**12–15**	3-4	**14–19**	3-4	**12–16**	3-4	**12–20**	3-4
2.1	16	4	18	4	12	4	16	4
2.2	14	4	15	4	10	3	14	4
2.3	15	3	17	3	11	3	15	3
2.4	14	3	15	3	10	3	14	3
2.5	13	3	15	3	9	3	13	3
2.6	12	3	14	3	8	3	12	3
2.7	11	3	13	3	7	3	11	3
3.1	35	6	40	6	30	6	35	6
3.2	30	6	35	6	25	6	30	6
3.3	30	6	33	6	25	6	30	6
3.4	25	6	27	6	20	6	25	6
3.5	30	6	36	6	26	6	30	6
3.6	28	6	34	6	23	6	28	6
3.7	26	6	30	6	22	6	26	6
3.8	24	6	28	6	21	6	24	6
4.1					**70**	7		
4.2					**70**	7		
4.3					**50**	7		
4.4					**50**	6		
4.5					**45**	6		
4.6					**60**	5		
4.7	38	5	40	5	**40**	4	38	5
4.8	38	4	40	4	**32**	4	38	4
4.9	25	4	32	4	**30**	4	25	4
4.10					**28**	4		
4.11								
4.12					**40**	5		
4.13					**28**	5		
4.14	20	4	25	4	**18**	4	20	4
4.15								
4.16					**70**	6		
4.17								
4.18								
4.19								
5.1								
5.2								
5.3	7	1	8	1			7	1
5.4	7	1	8	1			7	1
5.5	7	1	8	1			7	1
5.6	8	2	10	2			8	2
5.7								
5.8								
5.9	12	2	15	2			10	2
5.10	12	2	15	2			10	2
5.11	8	2	10	2			6	2
6.1	4	1	8	1	6	1-2	4	1
6.2			4	1				
6.3								
6.4								
6.5								

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10%, at drilling depths > 6xD by 15–20%. It is also recommended to use an emulsion for cooling.

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 53**

Cutting data standard values – Hole depth 5xD

	Type VX-TiN 10 124 ...		Type UNI-PM-TiN 10 173 ...		Type UNI-TiN 10 171 ...		Type N 10 152 ...		Type VA 10 175 ...		Type W 10 161 ...		Type WTL 10 168 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**33–38**	5-6	**37-42**	**5-6**	**33–38**	5-6	**22–27**	5-6					**30–35**	5
1.2	**40–44**	5-6	**44-47**	**6-7**	**40–44**	5-6	**26–34**	5-6					**40**	5
1.3	**44**	6	**47**	**4**	**44**	6	**30**	6					**36**	5
1.4	**18–22**	3-4	**20-25**	**4-5**	**18–22**	3-4			16-28	3-4			**15–20**	3-4
1.5	**40–44**	6	**47**	**6**	**40–44**	6	**25**	5					**40**	5
1.6	**26**	5	**44**	**5**	**26**	5							**35**	4
1.7	**27**	4	**30**	**4**	**27**	4							**20**	4
1.8	**22**	3	**25**	**3**	**22**	3							**16**	3
1.9	**20**	4	**22**	**4**	**20**	4							**14**	3
1.10	**22**	4	**25**	**4**	**22**	4			18	4			**16**	4
1.11	**16**	3	**20**	**4**	**16**	3			15	3			**12**	3
1.12	**20**	4	**25**	**4**	**20**	4	**16**	4					**10**	3
1.13	**9**	2	**10**	**2**	**9**	2								
1.14	**13**	3	**16**	**3**	**13**	3							**15**	3
1.15	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4					**15**	4
1.16	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4					**12**	3
2.1	**20**	4	19	**4**	**20**	4			**16**	4			15	4
2.2	**18**	4	17	**4**	**18**	4			**14**	4			14	4
2.3	**18**	4	16	**4**	**18**	4			**13**	4			12	3
2.4	**18**	4	15	**4**	**18**	4			**14**	3			13	3
2.5	**15**	3	14	**3**	**15**	3			**12**	3				
2.6	**16**	3	15	**3**	**16**	3			**11**	3				
2.7	**12**	3	13	**3**	**12**	3			**10**	3				
3.1	**45**	6	**50**	6	**45**	6	**34**	6					36	6
3.2	**40**	6	**44**	6	**40**	6	**26**	6					28	6
3.3	**40**	6	**44**	6	**40**	6	**25**	6					30	6
3.4	**30**	6	**33**	6	**30**	6	**20**	6					22	6
3.5	**42**	6	**44**	6	**42**	6	**26**	6	42	6			28	6
3.6	**35**	6	**33**	6	**35**	6	**23**	6	30	6			23	6
3.7	**32**	6	**44**	6	**32**	6	**22**	6					20	6
3.8	**30**	6	**33**	6	**30**	6	**21**	6					18	6
4.1	**70**	7			**70**	7					**80**	7		
4.2	**70**	7			**70**	7			90	7	**80**	7		
4.3	**85**	7			**85**	7			90	7	**63**	7	70	7
4.4	**70**	7			**70**	7			70	6			55	6
4.5	**70**	6			**70**	6			70	6			55	6
4.6	**88**	5	88	5	**88**	5			55	5	**50**	5	40	5
4.7	**44**	5	50	5	**44**	5			44	4			36	5
4.8	**47**	4	33	5	**47**	4			36	4			28	4
4.9	**43**	4	29	5	**43**	4			30	4			22	4
4.10	**38**	4	28	5	**38**	4			30	3			20	4
4.11	**77**	5	84	5	**77**	5								
4.12	**44**	5	46	5	**44**	5			45	5			45	4
4.13	**15**	4	27	5	**15**	4					**28**	5		
4.14	**25**	4	22	4	**25**	4	18	4					20	4
4.15														
4.16	**70**	6			**70**	6								
4.17														
4.18	**14**	3			**14**	3			11	3				
4.19	**18**	4			**18**	4			13	4				
5.1	8	2			8	2								
5.2	10	2			10	2								
5.3	8	1			8	1								
5.4	8	1	5	**2**	8	1								
5.5	8	2			8	2								
5.6	8	2			8	2								
5.7	10	1	10	**2**	10	1			9	2				
5.8	8	1			8	1								
5.9	8	1			8	1								
5.10	12	2			12	2			10	2				
5.11	8	2			8	2								
6.1	8	1			8	1								
6.2														
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

	Type WTL-TiN 10 170 ...		Type WTL-TiCN 10 172 ...		Type WTL-L 10 169 ...		Type WNXi 10 180 ...		Type WNXi-TiN 10 181 ...		Type N-MK 10 265 ...		Type WTL-MK 10 280 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**36–42**	5	**36–42**	6	**22–27**	5-6	**42–50**	6-7	**42–60**	6-7	**22–27**	5-6	**30–35**	5
1.2	**42–48**	5	**42–48**	6	**25–32**	5-6	**42–50**	6-7	**42–60**	6-7	**25–32**	5-6	**40**	5
1.3	**48**	4	**48**	7	**32**	6	**50**	7	**62**	7	**30**	6	**36**	6
1.4	**20–24**	3-4	**20–24**	4-5			**16–22**	4-5	**20–31**	4-5			**15–20**	3-4
1.5	**48**	5	**48**	6	**25**	5	**38–48**	6	**48–60**	6	**25**	5	**28–40**	5
1.6	**42**	4	**42**	5			**28**	5	**30**	5			**28**	4
1.7	**34**	4	**34**	5			**25**	5	**30**	5			**18–20**	4
1.8	**30**	3	**30**	4			**20**	4	**25**	4			**16**	3
1.9	**18**	3	**20**	4			**22**	5	**25**	5			**14**	3
1.10	**24**	4	**20**	5			**22**	5	**28**	5			**14–16**	4
1.11	**20**	3	**15**	4			**14**	4	**20**	4			**12**	3
1.12	**13**	3	**15**	4			**24**	5	**26**	5	**16**	4	**10**	3
1.13			**11**	3			**15**	3	**18**	3				
1.14	**17**	3	**17**	4			**18**	4	**20**	4			**10–15**	3
1.15	**18**	4	**21**	5	**16**	4	**16–24**	4-5	**18–30**	4-5	**12–16**	3-4	**15**	4
1.16	**14**	3	**15**	4			**16–24**	4-5	**18–30**	4-5	**12–16**	3-4	**12**	3
2.1	18	4	20	5			**20**	5	**25**	5			15	4
2.2	16	4	18	4			**18**	5	**22**	5			14	4
2.3	14	3	16	4			**16**	5	**20**	5			12	3
2.4	15	3	17	4			**18**	5	**22**	5			13	3
2.5							**15**	4	**19**	4				
2.6							**14**	4	**18**	4				
2.7							**12**	4	**17**	4				
3.1	45	6			32	6	**48**	7	**60**	7	**32**	6	36	6
3.2	36	6			25	6	**42**	7	**52**	7	**25**	6	28	6
3.3	40	6			28	6	**42**	7	**52**	7	**28**	6	30	6
3.4	28	6			20	6	**40**	7	**50**	7	**20**	6	22	6
3.5	36	6			25	6	**42**	7	**52**	7	**25**	6	28	6
3.6	30	6			22	6	**35**	7	**45**	7	**22**	6	23	6
3.7	25	6			18	6	**32**	7	**42**	7	**21**	6	20	6
3.8	22	6			16	6	**30**	7	**40**	7	**20**	6	18	6
4.1					80	7								
4.2					80	7								
4.3	85	7			63	7	95	7	120	7			70-80	7
4.4	70	6			50	6	75	8	95	8			60-70	6
4.5	70	6			50	6	75	8	95	8			60-70	6
4.6	88	5			32	5	78	6	98	6			40	5
4.7	45	5			50	5	55	6	62	6			36	5
4.8	32	4			15	4							28	4
4.9	25	4					42	5	48	5			22	4
4.10	22	4					38	5	44	5			20	4
4.11														
4.12					40	5	55	6	55	6			45	4
4.13							38	6	44	6	28	5		
4.14	24	4			16	4					18	4	18	4
4.15														
4.16														
4.17														
4.18							15	4	20	4				
4.19							18	4	22	5				
5.1							9	3	11	3				
5.2							11	3	13	3				
5.3							9	2	11	2				
5.4							9	2	11	2				
5.5							9	2	11	2				
5.6							11	3	13	3				
5.7							9	2	11	2				
5.8							9	3	11	3				
5.9							9	2	11	2				
5.10							14	3	17	3				
5.11							10	3	12	3				
6.1							8	3	10	3				
6.2							4	3	5	3				
6.3														
6.4														
6.5														

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10 %, at drilling depths > 6xD by 15–20 %. It is also recommended to use an emulsion for cooling.

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 53**

Cutting data standard values – Hole depth 10xD and over 10xD

	Hole depth 10xD													
	Type NC 10 223 ...		Type NC-TiALN 10 224 ...		Type UNI-TiN 10 270 ...		Type WTL 10 225 ...		Type WTL 10 215 ...		Type WTL-TiN 10 210 ...		Type WTW 10 200 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**30–40**	5-6	**50–65**	6-7	**25–32**	5-6	**28–32**	5-6	**22–28**	5-6	**24–30**	5-6		
1.2	**30–40**	5-6	**50–65**	6-7	**28–35**	6	**28–32**	5-6	**22–28**	5-6	**28–32**	5-6		
1.3	**40**	6	**65**	7	**28**	6	**32**	6	**28**	6	**32**	6		
1.4	**12–17**	3-4	**18–25**	4-5	**12–14**	3-4	**13–18**	3-4			**10–14**	4		
1.5	**30–40**	5	**45–55**	6	**25–28**	6	**26–36**	5	**22**	5	**26–36**	5		
1.6	**22**	4	**35**	5	**15**	5	**24**	4-5			**24**	4		
1.7	**20**	3	**30**	4	**13**	4	**16**	4			**18**	4		
1.8	**14**	3	**20**	4	**12**	3	**12**	3						
1.9	**14**	3	**20**	4	**13**	4	**12**	3						
1.10	**14**	4	**20**	5	**13**	4	**14**	4			**12**	4		
1.11	**10**	3	**15**	4	**8**	3	**10**	3						
1.12	**10**	3	**15**	4			**8**	3			**8**	3		
1.13	**7**	2	**12**	3			**6**	2						
1.14	**10**	3	**15**	4	**10**	3	**12**	3						
1.15	**20**	4	**30**	4	**10–13**	3-4	**16**	8	**14**	4	**15**	4		
1.16	**10**	3	**15**	4	**10–13**	3-4	**8**	3			**8**	3		
2.1	14	4	20	4	13	4	**12**	4						
2.2	14	4	20	4			**13**	4						
2.3	12	3	18	3	12	4	**10**	3						
2.4	13	3	20	3			**11**	3						
2.5	11	3	16	3			**9**	3						
2.6	10	3	15	3	8-13	3-4	**8**	3						
2.7							**7**	2-3						
3.1	**40**	6	**65**	7	**32**	6	**28**	6	**28**	6	**36**	6-7		
3.2	**30**	6	**50**	7	**26**	6	**22**	6	**22**	6	**28**	6-7		
3.3	**35**	6	**60**	7	**28**	6	**30**	6	**22**	6	**28**	6-7		
3.4	**25**	6	**40**	7	**20**	6	**24**	6	**18**	6	**22**	6-7		
3.5	**30**	6	**50**	7	**28**	6	**24**	6	**22**	6	**28**	6-7		
3.6	**32**	6	**55**	7	**20**	6	**20**	6	**16**	6	**30**	6-7		
3.7	**24**	6	**36**	7	**28**	6	**16**	6	**14**	6	**20**	6-7		
3.8	**22**	6	**32**	7	**20**	6	**15**	6	**13**	6	**18**	6-7		
4.1					50	7							**65**	7
4.2	80	6	110	7	60	7							**65**	7
4.3	80	6	110	7	60	7	**70**	7	**55**	7	**70**	7		
4.4	75	7	95	8	50	6	**60**	6	**45**	6	**55**	6		
4.5	60	6	80	7	50	6	**60**	6	**45**	6	**55**	6		
4.6	60	5	60	6	24	5	**54**	5	**54**	5	**65**	5		
4.7	40	5	60	6			**30**	5	**28**	5	**36**	5		
4.8	36	4	55	5			**26**	4	**24**	4	**28**	4		
4.9	25	4	35	5			**22**	4	**20**	4	**22**	4		
4.10	23	4	30	5			**20**	4	**18**	4	**20**	4		
4.11					35-50	4-5								
4.12	50	5	65	5	28	5	**38**	5	**34**	5	**44**	5		
4.13	30	5	40	5	12	4							**22**	5
4.14					18	4	**16**	4	**14**	4	**18**	4		
4.15														
4.16					50	6							**63**	6
4.17														
4.18	8	2	10	3										
4.19	7	2	9	3										
5.1	8	2	11	2-3										
5.2	6	2	7	2-3										
5.3	6	1	7	2										
5.4	6	2	7	2										
5.5	6	1	7	2										
5.6	5	1	6	2										
5.7	5	1	6	2										
5.8	5	1	6	1										
5.9	5	1	6	1										
5.10	6	2	7	2-3										
5.11	6	1	7	2-3										
6.1	6	3	7	3										
6.2	4	2	5	2										
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

	Hole depth 10xD				Hole depth above 10xD									
	Type N-MK 10 295 ...		Type WTL-MK 10 297 ...		Type WTL-R1 10 235 ...		Type WTL-R2 10 245 ...		Type WTL-R3 10 255 ...		Type WTL-MK-R1 10 305 ...		Type WTL-MK-R2 10 315 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**28–36**	5-6	**28–32**	5-6	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5
1.2	**28–36**	5-6	**28–32**	5-6	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5
1.3	**27**	6	**32**	6	**22**	4	**22**	4	**22**	4	**22**	4	**22**	4
1.4	**14**	4	**10–14**	3-4	**10**	3	**10**	3	**10**	3	**10**	3	**10**	3
1.5	**28–36**	5	**36**	5	**18–22**	4	**18–22**	4	**18–22**	4	**18–22**	4	**18–22**	4
1.6	**22**	4	**24**	4										
1.7	**18**	4	**16**	4	**12**	3	**12**	3	**12**	3	**12**	3	**12**	3
1.8			**12**	3										
1.9			**12**	3										
1.10	**12**	4	**12**	4	**8**	3	**8**	3	**8**	3	**8**	3	**8**	3
1.11			**8**	3										
1.12	**8**	3	**8**	3										
1.13			**6**	2										
1.14			**8**	3	**6**	2	**6**	2	**6**	2	**6**	2	**6**	2
1.15	**18**	4	**16**	4										
1.16	**8**	3	**8**	3										
2.1			**12**	4	8	3	8	3	8	3	8	3	8	3
2.2			**13**	4	8	3	8	3	8	3	8	3	8	3
2.3			**10**	3										
2.4			**11**	3										
2.5			**9**	3										
2.6			**8**	3										
2.7			**7**	2-3										
3.1	**36**	6-7	**28**	6	**22**	5	**22**	5	**22**	5	**22**	5	**22**	5
3.2	**28**	6-7	**22**	6	**18**	5	**18**	5	**18**	5	**18**	5	**18**	5
3.3	**28**	6-7	**30**	6	**20**	5	**20**	5	**20**	5	**20**	5	**20**	5
3.4	**22**	6-7	**24**	6	**14**	5	**14**	5	**14**	5	**14**	5	**14**	5
3.5	**28**	6-7	**22**	6	**18**	5	**18**	5	**18**	5	**18**	5	**18**	5
3.6	**30**	6-7	**20**	6	**16**	5	**16**	5	**16**	5	**16**	5	**16**	5
3.7	**20**	6-7	**16**	6	**14**	5	**14**	5	**14**	5	**14**	5	**14**	5
3.8	**18**	6-7	**15**	6	**12**	5	**12**	5	**12**	5	**12**	5	**12**	5
4.1														
4.2														
4.3	70	7	**70**	7	**45**	6	**45**	6	**45**	6	**45**	6	**45**	6
4.4	55	6	**60**	6	**36**	5	**36**	5	**36**	5	**36**	5	**36**	5
4.5	55	6	**50**	6	**36**	5	**36**	5	**36**	5	**36**	5	**36**	5
4.6	54	5	**54**	5	**22**	4	**22**	4	**22**	4	**22**	4	**22**	4
4.7	36	5	**30**	5	**20**	3	**20**	3	**20**	3	**20**	3	**20**	3
4.8	28	4	**26**	4	**22**	3	**22**	3	**22**	3	**22**	3	**22**	3
4.9	22	4	**22**	4	**22**	3	**22**	3	**22**	3	**22**	3	**22**	3
4.10	20	4	**20**	4	**20**	3	**20**	3	**20**	3	**20**	3	**20**	3
4.11														
4.12	36	4	**38**	5	**28**	4	**28**	4	**28**	4	**28**	4	**28**	4
4.13	22	5			**20**	3	**20**	3	**20**	3	**20**	3	**20**	3
4.14	14	4	**16**	4	**14**	4	**14**	4	**14**	4	**14**	4	**14**	4
4.15														
4.16					**55**	5	**55**	5	**55**	5	**55**	5	**55**	5
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1														
6.2														
6.3														
6.4														
6.5														

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10 %, at drilling depths > 6xD by 15–20 %. It is also recommended to use an emulsion for cooling.

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 53**

Cutting data standard values – micro drills 10 103 ...

		Nominal Ø in mm						
		Ø 0,15	Ø 0,20–0,25	Ø 0,30–0,35	Ø 0,40–0,55	Ø 0,60–0,75	Ø 0,80–0,95	Ø 1,00–1,45
Index	v_c in m/min	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
1.2	**18**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
1.3	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
1.4	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.5	**18**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
1.6	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.7	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.8	**12**	0,004	0,005	0,007	0,009	0,012	0,016	0,029
1.9	**12**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.10	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.11	**12**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.12	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.13	**8**	0,003	0,004	0,005	0,007	0,009	0,013	0,024
1.14	**14**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.15	**12–14**	0,004	0,006	0,008	0,007	0,010	0,014	0,026
1.16	**12–14**	0,004	0,006	0,008	0,007	0,010	0,014	0,026
2.1	**12**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
2.2	**10**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
2.3	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.4	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.5	**6**	0,004	0,006	0,008	0,007	0,010	0,014	0,026
2.6	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.7	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
3.1	**25**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.2	**22**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.3	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.4	**22**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.5	**22**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.6	**20**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.7	**22**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
3.8	**20**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.1								
4.2								
4.3	**26**	0,012	0,014	0,019	0,024	0,034	0,038	0,060
4.4	**24**	0,012	0,014	0,019	0,024	0,034	0,038	0,060
4.5	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.6	**42**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.7	**38**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.8	**45**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.9	**35**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.10	**30**	0,007	0,009	0,011	0,014	0,02	0,024	0,041
4.11								
4.12	**22**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.13	**18**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
4.14	**16**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
4.15								
4.16	**75**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.17								
4.18	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
4.19	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.1	5	0,004	,0,005	0,007	0,008	0,012	0,016	0,029
5.2	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.3	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.4	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.5	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.6	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.7	6	0,005	0,007	0,009	0,011	0,015	0,020	0,035
5.8	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.9	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.10	4	0,003	0,004	0,005	0,007	0,009	0,013	0,024
5.11	4	0,003	0,004	0,005	0,007	0,009	0,013	0,024
6.1	3	0,002	0,003	0,004	0,005	0,007	0,010	0,020
6.2								
6.3								
6.4								
6.5								

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Feed rate guide values for HSS twist drills

Factor F	Drill diameter in mm															
	0,5	1	2	3	4	5	6	8	10	12	14	16	18	20	26	30
	Feed rate f in mm/rev.															
1	0,004	0,006	0,02	0,03	0,04	0,04	0,05	0,06	0,08	0,08	0,09	0,1	0,12	0,15	0,18	0,19
2	0,006	0,008	0,02	0,03	0,05	0,05	0,05	0,08	0,1	0,1	0,1	0,12	0,12	0,2	0,2	0,2
3	0,007	0,012	0,03	0,05	0,06	0,069	0,08	0,1	0,12	0,13	0,13	0,16	0,16	0,25	0,25	0,25
4	0,008	0,014	0,04	0,06	0,08	0,09	0,1	0,14	0,16	0,16	0,16	0,2	0,2	0,3	0,3	0,3
5	0,01	0,016	0,06	0,08	0,1	0,12	0,13	0,16	0,2	0,2	0,22	0,25	0,25	0,4	0,4	0,4
6	0,012	0,018	0,06	0,1	0,12	0,14	0,16	0,2	0,25	0,25	0,25	0,3	0,3	0,5	0,5	0,5
7	0,014	0,02	0,08	0,13	0,16	0,18	0,2	0,25	0,35	0,35	0,35	0,4	0,4	0,6	0,6	0,6
8	0,016	0,023	0,1	0,16	0,2	0,2	0,25	0,35	0,4	0,4	0,4	0,4	0,5	0,6	0,7	0,8
9	0,019	0,025	0,13	0,17	0,2	0,23	0,32	0,4	0,4	0,5	0,5	0,5	0,6	0,8	0,9	0,9

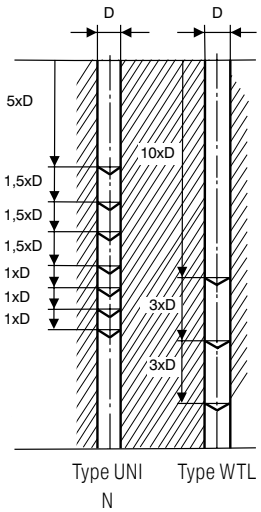
All the indicated data are guide values only and represent average values.

Speed for HSS drills

v_c m/min	Drill diameter in mm															
	2,0	2,5	3,15	4,0	5,0	6,3	8,0	10,0	12,5	16,0	20,0	25,0	31,5	40,0	50,0	63,0	80,0
	Speed in U/min																
80	12500	10000	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320
63	10000	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250
50	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200
40	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160
32	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125
25	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100
20	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80
16	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63
12	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50
10	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40
8	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32
6	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25
5	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20
4	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16
3	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16	12

Peck frequency for deep drilling

- drill must be sufficiently cooled
- by use of a drill with flat chip gullet profile (type WTL) chip transport is substantially improved
- for extremely deep drilling or when machining horizontally through coolant drills with internal coolant supply are recommended



Coatings

TiN

- TiN coating
- maximum application temperature: 450 °C

TiAlN

- TiAlN multilayer coating
- maximum application temperature: 900 °C

vap.

- vaporised
- vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance

TiCN

- TiCN multilayer coating
- maximum application temperature: 450 °C

F.-nit

- titanium carbon nitride based PVD coating particularly suitable for steel machining
- applicable up to approx. 450 °C



New products for machining technicians

NEW WTX – Speed UNI

≤ 3xD | ≤ 5xD | ≤ 8xD



The new WTX – Speed UNI raises your productivity and increases process security thanks to a new geometry and new Dragonskin coating DPX14S.

NEW WTX – Feed UNI

≤ 5xD | ≤ 8xD | ≤ 12xD



The update means the WTX – Feed UNI is even more versatile and capable thanks to several geometrical changes and the tried-and-tested universal Dragonskin coating DPX74S. Now available from Ø 4.00 mm.

NEW WTX – Quattro 4F

≤ 5xD | ≤ 8xD | ≤ 12xD



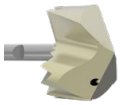
The high-performance drill with four guide lands has been made even more capable through geometrical changes and the universal Dragonskin coating DPX74S.

NEW WTX – short step drill



The WTX short step drill with tried-and-tested universal Dragonskin coating DPX74S.

NEW WTX – Change UNI



The WTX – Change UNI exchangeable head with tried-and-tested universal Dragonskin coating DPX74S.

NEW WTX – AL

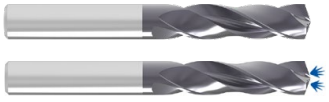
≤ 5xD | ≤ 8xD | ≤ 12xD



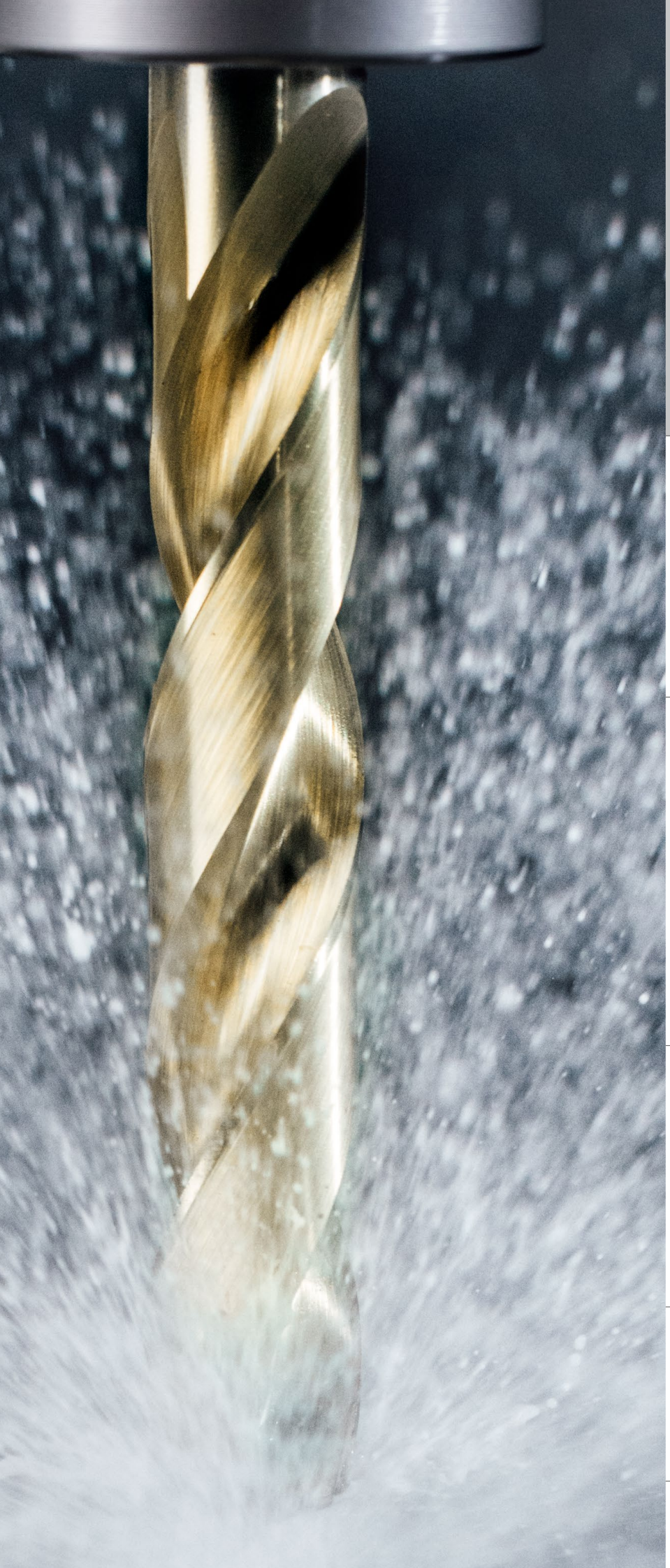
DLC-coated high-performance drill for aluminium machining.

NEW WTX – H

≤ 3xD



High-performance drill for hardened steels from 45 to 70 HRC.



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder	3+4
List of contents	5–8
Product programme	9–93
Technical Information:	
Cutting Data	94–131
Type overview	132
Application notes: WTX, solid carbide, Change, deep hole drilling	133–136
Coatings	137

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank











Version



Int. coolant supply



self-centering



▲ Pilot drilling
▲ min. 2xD

● = **Main Application**

○ = Extended application

Toolfinder

Steel/Universal

Product name	Tool type	Description	Int. coolant supply	Heads	1xD	3xD	5xD	8xD	12xD
Solid carbide drilling									
WTX	Speed UNI	▲ High performance drill for high cutting speeds ▲ Using new DPX14S Dragonskin coating ▲ new cutting geometry	✓			21–24	38–42	55–58	
WTX	Feed UNI	▲ High feed drills with 3 cutting edges ▲ for difficult drilling conditions ▲ high positional accuracy	✓				38–42	55–58	63–65
WTX	UNI	▲ highest performance for all materials up to 1200 N/mm² ▲ suitable for volume production	✗ ✓			9–13 21–24	32–35 38–42	 55–58	
WPC	UNI	▲ Quality Tools for Standard Applications	✗ ✓			14–17 25–28	36 50–53	 59	 66
WTX	180	▲ for inclined surfaces up to 45 ° and flat bottom holes	✓			31	54		
WTX	Quattro 4F	▲ with additional guide land for best alignment accuracy, concentricity and positional accuracy	✗ ✓				32–35 38–42	 55–58	 63–65
	N	▲ Uncoated solid carbide drills ▲ Universal application	✗			20	37		
Mini-drill									
WTX	MINI	▲ Standard shank Ø 3.0 mm ▲ Optimal chip formation and removal thanks to WTX flute geometry	✗ ✓				70 71	 71	 72
Drill Reamers									
WTX	Finish BR/ BR100	▲ Solid carbide high performance drill reamer ▲ Excellent surface quality ▲ For blind and through holes	✓			73+74	74		
Stepped drills									
WTX	SB	▲ Core hole plus countersink for thread forming and tapping	✗			75			
NC Spot Drill									
	NC-A	▲ spiral fluted ▲ 90°, 120°, 142°	✗		76+77				
Centre drills									
	ZB	▲ spiral fluted ▲ 120°	✗		78				
Exchange head drill									
WTX	Change Feed UNI	▲ Three-edged exchangeable head drill with solid carbide drill head type Feed UNI from Ø 14.0 mm to 32.0 mm ▲ Universal application (steel, cast iron)	✓	79+80		81	81	82	
WTX	Change UNI	▲ Exchangeable head drill with type UNI solid carbide drill head from Ø 12.0 mm to 41.0 mm ▲ for steels < 700 N/mm²	✓	83–88	89	89	90	90	91
WTX	Change P	▲ Exchangeable head drill with type P solid carbide drill head from Ø 12.0 mm to 41.0 mm ▲ for steels > 700 N/mm²	✓	83–88	89	89	90	90	91
Exchangeable head NC spot drill									
	NC-A	▲ NC spot drill – Exchange Head System ▲ 90°, 120°, 142°	✗	93					

✗ = without through coolant | ✓ = with thro' coolant

Toolfinder

	Product name	Tool type	Description	Int. coolant supply	Heads	1xD	3xD	5xD	8xD	12xD
Stainless steel	**Solid carbide drilling**									
	WTX	VA	▲ highest performance for corrosion and acid resistant steels and aluminium ▲ for volume production	✖ ✓			9–13 21–24	32–35 43–49	 60–62	
	WPC	VA	▲ Quality tools for corrosion and acid-resistant steels and aluminum	✖ ✓			14–17 25–28	 50–53		
	WTX	Speed VA	▲ double the cutting speed in corrosion and acid-resistant steels and aluminum	✓				43–49		
	Exchange head drill									
	WTX	Change VA	▲ Exchangeable head drill with solid carbide drill head type VA from Ø 12.0 mm to 32.0 mm	✓	83–88	89	89	90	90	91
Cast iron	**Solid carbide drilling**									
	WTX	GG	▲ highest performance in cast materials to 250 HB	✓				43–49	60–62	
	Exchange head drill									
	WTX	Change GG	▲ Exchangeable head drill with solid carbide drill head type GG from Ø 12.0 mm to 32.0 mm	✓	83–88	89	89	90	90	91
Non-ferrous metals	**Solid carbide drilling**									
	WTX	AL	▲ Solid carbide high performance drill, especially for the machining of aluminum, copper and brass ▲ for volume production	✓				43–49	60–62	63–65
	Exchange head drill									
	WTX	Change AL	▲ Exchangeable head drill with solid carbide drill head type AL from Ø 12.0 mm to 32.0 mm	✓	83–88	89	89	90	90	91
Heat-resistant	**Solid carbide drilling**									
	WTX	Ti	▲ highest performance in titanium, titanium alloys and heat resistant alloys	✓			29+30	43–49		
Tempered steel	**Solid carbide drilling**									
	WTX	H	▲ highest performance in hardened steel from 46 to 70 HRC	✖ ✓			19 18			

	Product name	Tool type	Description	Int. coolant supply	16xD	20xD	25xD	30xD	40xD	50xD
	Deep Hole Drills									
Steel/ Universal	WTX	TB UNI	▲ Solid carbide deep hole drill to 50xD without peck ▲ 4 facet geometry for excellent alignment accuracy	✓	67	67	68	68	69	69
Non-ferrous metals	WTX	TB ALU	▲ Solid carbide deep hole drills, up to 30xD without pecking ▲ 6-facet head geometry for excellent alignment accuracy	✓	67	67	68	68		

✖ = without through coolant | ✓ = with thro' coolant

Overview Solid Carbide Drills

	Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■	uncoated □	WNT \ Performance	WNT \ Standard
3xD without thro' coolant															
	WTX	UNI	≤ 3xD	3–25	●		●	○		○		■		9–13	
	WTX	VA	≤ 3xD	2–20	○	●	○	●		○		■		9–13	
	WPC	UNI	≤ 3xD	1–20	●		●	○				■			14–17
	WPC	VA	≤ 3xD	1–20	○	●	○	●		○		■			14–17
	WTX	H	≤ 3xD	2,55–14						●	up to 70 HRC	■		19	
		N	≤ 3xD	0,5–20	●	○	○	●	○				□		20
3xD with thro' coolant															
	WTX	Speed UNI	≤ 3xD	3–20	●		●	○		○		■		21–24	
	WTX	UNI	≤ 3xD	3–25	●	○	●	○		○		■		21–24	
	WTX	VA	≤ 3xD	3–20	○	●	○	●	○			■		21–24	
	WPC	UNI	≤ 3xD	1–20	●	○	●	○				■			25–28
	WPC	VA	≤ 3xD	1–20	○	●	○	●	●			■			25–28
	WTX	Ti	≤ 3xD	3–20		●				●		■		29+30	
	WTX	180	≤ 3xD	3–20	●	○	●	○		○		■		31	
	WTX	H	≤ 3xD	2,55–14	○		○			●	up to 58 HRC	■		18	
5xD without thro' coolant															
	WTX	UNI	≤ 5xD	3–20	●		●	○				■		32–35	
	WTX	Quattro 4F	≤ 5xD	3–20	●		●					■		32–35	
	WTX	VA	≤ 5xD	3–20	○	●	○	●		○		■		32–35	
	WPC	UNI	≤ 5xD	3–20	●		●	○				■			36
		N	≤ 5xD	0,5–16	●	○	○	●	○				□		37

Overview Solid Carbide Drills

5xD with thro‘ coolant

	Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■	uncoated □	WNT \ Performance	WNT \ Standard
	WTX	Feed UNI	≤ 5xD	4–20	●	●	●	○			3 flute	■		38–42	
	WTX	Speed UNI	≤ 5xD	3–20	●	●	●	○		○		■		38–42	
	WTX	UNI	≤ 5xD	3–25	●	○	●	○				■		38–42	
	WTX	Quattro 4F	≤ 5xD	3–20	●	○	●	○				■		38–42	
	WTX	Speed VA	≤ 5xD	3–20	○	●	○	○	○			■		43–49	
	WTX	VA	≤ 5xD	3–20	○	●	○	●	○			■		43–49	
	WTX	GG	≤ 5xD	3–20			●	●				■		43–49	
	WTX	AL	≤ 5xD	2,5–20			○	●				■		43–49	
	WTX	Ti	≤ 5xD	3–20		●			●			■		43–49	
	WPC	UNI	≤ 5xD	1–20	●	○	●	○				■		50–53	
	WPC	VA	≤ 5xD	1–20	○	●	○	●	●			■		50–53	
	WTX	180	≤ 5xD	3–20	●	○	●			○		■		54	

8xD with thro‘ coolant

	Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■	uncoated □	WNT \ Performance	WNT \ Standard
	WTX	Feed UNI	≤ 8xD	4–20	●	●	●				3 flute	■		55–58	
	WTX	Speed UNI	≤ 8xD	3–20	●		●					■		55–58	
	WTX	UNI	≤ 8xD	3–25	●		●	○				■		55–58	
	WTX	Quattro 4F	≤ 8xD	3–20	●		●	○		○		■		55–58	
	WPC	UNI	≤ 8xD	3–20	●	○	●	○				■		59	
	WTX	VA	≤ 8xD	3–20	○	●	○	●	○			■		60–62	
	WTX	GG	≤ 8xD	3–20			●	●				■		60–62	
	WTX	AL	≤ 8xD	3–20			○	●				■		60–62	

Overview Solid Carbide Drills

Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■ uncoated □	WNT \ Performance	WNT \ Standard
12xD with thro‘ coolant													
 WTX	Feed UNI	≤ 12xD	4–20	●	●	●	○			HA	■	63–65	
 WTX	Quattro 4F	≤ 12xD	3–20	●		●	○			HA	■	63–65	
 WTX	AL	≤ 12xD	3–20			○	●			HA	■	63–65	
 WPC	UNI	≤ 12xD	3–18	●	○	●	○			HA	■		66
Deep Hole Drills													
WTX	TB UNI	≤ 16xD ≤ 20xD	2–12	●	●	●				HA	■	67	
WTX	TB UNI	≤ 25xD ≤ 30xD	2–12	●	●	●				HA	■	68	
WTX	TB UNI	≤ 40xD	3–9	●	●	●				HA	■	69	
WTX	TB UNI	≤ 50xD	3–6,8	●	●	●				HA	■	69	
WTX	TB ALU	≤ 16xD ≤ 20xD	2–12				●			HA	■	67	
WTX	TB ALU	≤ 25xD ≤ 30xD	2–12				●			HA	■	68	
Micro Drills 5xD/8xD/12xD													
 WTX	MINI	≤ 5xD	0,1–2,9	●		●	○	○		HA	■	70	
 WTX	MINI	≤ 5xD	1,0–2,9	●	●	●	●	●		HA	with thro‘ coolant ■	71	
 WTX	MINI	≤ 8xD	1,0–2,9	●	●	●	●	●		HA	with thro‘ coolant ■	71	
 WTX	MINI	≤ 12xD	1,0–2,9	●		●	●			HA	with thro‘ coolant ■	72	
Drill Reamers													
 WTX	Finish BR100	≤ 3xD	3,97–12,02	●		●	○			HA	■	73	
 WTX	Finish BR	≤ 3xD	4–16	●		●	○			HA	Tolerance H7 ■	74	
 WTX	Finish BR	≤ 5xD	4–20	●		●	○			HA	Tolerance H7 ■	74	

Overview Solid Carbide Drills

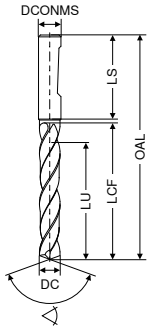
	Product name	Tool type	Point angle	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance	WNT \ Standard
Stepped drills															
	WTX	SB		2,5–14	●		○	○			Thread cutting	■		75	
					HA										
	WTX	SB		2,8–15	●		○	○			Thread forming	■		75	
					HA										
NC Spot Drill															
		NC–A	◁ 90° ◁ 120° ◁ 142°	2–20	●		●	●					□		76
					HA										
		NC–A	◁ 90° ◁ 120° ◁ 142°	2–20	●		●					■			76
					HB										
		NC–A	◁ 90° ◁ 120° ◁ 142°	3–16	●		●				Long version	■			77
					HA						HB				
Centre drills															
		ZB	◁ 120°	0,5–6,3	●		●	●					□	78	
Exchangeable head system – heads															
	WTX	Change Feed		14–32	●		●					■		79+80	
	WTX	Change UNI		12–41	●		●					■		83–88	
	WTX	Change P		12–41	●		●					■		83–88	
	WTX	Change VA		12–32	○	●	○					■		83–88	
	WTX	Change GG		12–32			●					■		83–88	
	WTX	Change ALU		12–32				●				■		83–88	
Exchangeable head system – holders 1xD/3xD/5xD/8xD/12xD															
	WTX	Change Feed		14–32										81+82	
					HB										
	WTX	Change		12–41										89–91	
					HB										
MultiChange NC spot drill															
		NC–A	◁ 90° ◁ 120° ◁ 142°	8–20	●	●	●	●				■		93	

WTX – High Performance Drill, DIN 6537

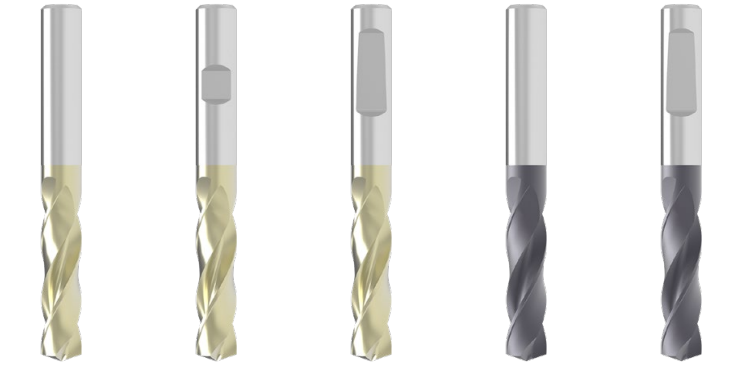
2

≤ 3xD





UNI	UNI	UNI	VA	VA
DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...		Article no. 11 778 ...		Article no. 11 776 ...		Article no. 10 731 ...		Article no. 10 732 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
2,00	6	58	16	11	36							36,81	020	36,81	020
2,10	6	58	16	11	36							36,81	021	36,81	021
2,20	6	58	16	11	36							36,81	022	36,81	022
2,30	6	58	16	11	36							36,81	023	36,81	023
2,33	6	58	16	11	36							36,81	823		
2,40	6	58	16	11	36							36,81	024	36,81	024
2,43	6	58	16	11	36							36,81	824		
2,50	6	58	16	11	36							36,81	025	36,81	025
2,55	6	58	16	11	36							36,81	825		
2,60	6	58	16	11	36							36,81	026	36,81	026
2,62	6	58	16	11	36							36,81	826		
2,70	6	58	16	11	36							36,81	027	36,81	027
2,80	6	58	16	11	36							36,81	028	36,81	028
2,90	6	58	16	11	36							36,81	029	36,81	029
3,00	6	62	20	14	36	32,41	03000	32,41	03000	32,41	03000	36,81	030	36,81	030
3,10	6	62	20	14	36	32,41	03100	32,41	03100	32,41	03100	36,81	031	36,81	031
3,15	6	62	20	14	36	32,41	03150	32,41	03150	32,41	03150	36,81	831		
3,20	6	62	20	14	36	32,41	03200	32,41	03200	32,41	03200	36,81	032	36,81	032
3,22	6	62	20	14	36	32,41	03220	32,41	03220	32,41	03220	36,81	832		
3,25	6	62	20	14	36	32,41	03250	32,41	03250	32,41	03250	36,81	890		
3,30	6	62	20	14	36	32,41	03300	32,41	03300	32,41	03300	36,81	033	36,81	033
3,40	6	62	20	14	36	32,41	03400	32,41	03400	32,41	03400	36,81	034	36,81	034
3,50	6	62	20	14	36	32,41	03500	32,41	03500	32,41	03500	36,81	035	36,81	035
3,60	6	62	20	14	36	32,41	03600	32,41	03600	32,41	03600	36,81	036	36,81	036
3,70	6	62	20	14	36	32,41	03700	32,41	03700	32,41	03700	36,81	037	36,81	037
3,80	6	66	24	17	36	32,41	03800	32,41	03800	32,41	03800	36,81	038	36,81	038
3,85	6	66	24	17	36	32,41	03850	32,41	03850	32,41	03850	36,81	838		
3,90	6	66	24	17	36	32,41	03900	32,41	03900	32,41	03900	36,81	039	36,81	039
4,00	6	66	24	17	36	32,41	04000	32,41	04000	32,41	04000	36,81	040	36,81	040
4,10	6	66	24	17	36	32,41	04100	32,41	04100	32,41	04100	36,81	041	36,81	041
4,20	6	66	24	17	36	32,41	04200	32,41	04200	32,41	04200	36,81	042	36,81	042
4,25	6	66	24	17	36	32,41	04250	32,41	04250	32,41	04250				
4,30	6	66	24	17	36	32,41	04300	32,41	04300	32,41	04300	36,81	043	36,81	043
4,35	6	66	24	17	36	32,41	04350	32,41	04350	32,41	04350	36,81	843		
4,40	6	66	24	17	36	32,41	04400	32,41	04400	32,41	04400	36,81	044	36,81	044
4,45	6	66	24	17	36	32,41	04450	32,41	04450	32,41	04450	36,81	844		
4,50	6	66	24	17	36	32,41	04500	32,41	04500	32,41	04500	36,81	045	36,81	045
4,60	6	66	24	17	36	32,41	04600	32,41	04600	32,41	04600	36,81	046	36,81	046
4,65	6	66	24	17	36	32,41	04650	32,41	04650	32,41	04650	36,81	900	36,81	900
4,70	6	66	24	17	36	32,41	04700	32,41	04700	32,41	04700	36,81	047	36,81	047
4,80	6	66	28	20	36	32,41	04800	32,41	04800	32,41	04800	36,81	048	36,81	048
4,90	6	66	28	20	36	32,41	04900	32,41	04900	32,41	04900	36,81	049	36,81	049
4,95	6	66	28	20	36	32,41	04950	32,41	04950	32,41	04950				

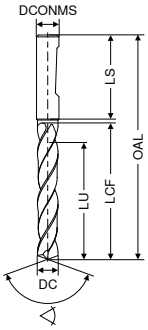
Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

→ v_c Page 100+102

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	UNI	VA	VA
DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5
DC m7	Article no. 11 777 ...	Article no. 11 778 ...	Article no. 11 776 ...	Article no. 10 731 ...	Article no. 10 732 ...
mm	EUR	EUR	EUR	EUR	EUR

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 777 ... EUR		11 778 ... EUR		11 776 ... EUR		10 731 ... EUR		10 732 ... EUR	
5,00	6	66	28	20	36	32,41	05000	32,41	05000	32,41	05000	36,81	050	36,81	050
5,05	6	66	28	20	36	32,41	05050	32,41	05050	32,41	05050				
5,10	6	66	28	20	36	32,41	05100	32,41	05100	32,41	05100	36,81	051	36,81	051
5,20	6	66	28	20	36	32,41	05200	32,41	05200	32,41	05200	36,81	052	36,81	052
5,30	6	66	28	20	36	32,41	05300	32,41	05300	32,41	05300	36,81	053	36,81	053
5,40	6	66	28	20	36	32,41	05400	32,41	05400	32,41	05400	36,81	054	36,81	054
5,50	6	66	28	20	36	32,41	05500	32,41	05500	32,41	05500	36,81	055	36,81	055
5,55	6	66	28	20	36	32,41	05550	32,41	05550	32,41	05550	36,81	902	36,81	902
5,60	6	66	28	20	36	32,41	05600	32,41	05600	32,41	05600	36,81	056	36,81	056
5,70	6	66	28	20	36	32,41	05700	32,41	05700	32,41	05700	36,81	057	36,81	057
5,75	6	66	28	20	36	32,41	05750	32,41	05750	32,41	05750	36,81	916		
5,80	6	66	28	20	36	32,41	05800	32,41	05800	32,41	05800	36,81	058	36,81	058
5,90	6	66	28	20	36	32,41	05900	32,41	05900	32,41	05900	36,81	059	36,81	059
5,95	6	66	28	20	36	32,41	05950	32,41	05950	32,41	05950	36,81	959		
6,00	6	66	28	20	36	32,41	06000	32,41	06000	32,41	06000	36,81	060	36,81	060
6,10	8	79	34	24	36	34,83	06100	34,83	06100	34,83	06100	42,33	061	42,33	061
6,20	8	79	34	24	36	34,83	06200	34,83	06200	34,83	06200	42,33	062	42,33	062
6,30	8	79	34	24	36	34,83	06300	34,83	06300	34,83	06300	42,33	063	42,33	063
6,40	8	79	34	24	36	34,83	06400	34,83	06400	34,83	06400	42,33	064	42,33	064
6,50	8	79	34	24	36	34,83	06500	34,83	06500	34,83	06500	42,33	065	42,33	065
6,60	8	79	34	24	36	34,83	06600	34,83	06600	34,83	06600	42,33	066	42,33	066
6,70	8	79	34	24	36	34,83	06700	34,83	06700	34,83	06700	42,33	067	42,33	067
6,80	8	79	34	24	36	34,83	06800	34,83	06800	34,83	06800	42,33	068	42,33	068
6,90	8	79	34	24	36	34,83	06900	34,83	06900	34,83	06900	42,33	069	42,33	069
7,00	8	79	34	24	36	34,83	07000	34,83	07000	34,83	07000	42,33	070	42,33	070
7,10	8	79	41	29	36	34,83	07100	34,83	07100	34,83	07100	42,33	071	42,33	071
7,20	8	79	41	29	36	34,83	07200	34,83	07200	34,83	07200	42,33	072	42,33	072
7,30	8	79	41	29	36	34,83	07300	34,83	07300	34,83	07300	42,33	073	42,33	073
7,40	8	79	41	29	36	34,83	07400	34,83	07400	34,83	07400	42,33	074	42,33	074
7,45	8	79	41	29	36	34,83	07450	34,83	07450	34,83	07450	42,33	924		
7,50	8	79	41	29	36	34,83	07500	34,83	07500	34,83	07500	42,33	075	42,33	075
7,60	8	79	41	29	36	34,83	07600	34,83	07600	34,83	07600	42,33	076	42,33	076
7,70	8	79	41	29	36	34,83	07700	34,83	07700	34,83	07700	42,33	077	42,33	077
7,80	8	79	41	29	36	34,83	07800	34,83	07800	34,83	07800	42,33	078	42,33	078
7,90	8	79	41	29	36	34,83	07900	34,83	07900	34,83	07900	42,33	079	42,33	079
8,00	8	79	41	29	36	34,83	08000	34,83	08000	34,83	08000	42,33	080	42,33	080
8,10	10	89	47	35	40	38,69	08100	38,69	08100	38,69	08100	47,94	081	47,94	081
8,20	10	89	47	35	40	38,69	08200	38,69	08200	38,69	08200	47,94	082	47,94	082
8,30	10	89	47	35	40	38,69	08300	38,69	08300	38,69	08300	47,94	083	47,94	083
8,40	10	89	47	35	40	38,69	08400	38,69	08400	38,69	08400	47,94	084	47,94	084
8,50	10	89	47	35	40	38,69	08500	38,69	08500	38,69	08500	47,94	085	47,94	085
8,60	10	89	47	35	40	38,69	08600	38,69	08600	38,69	08600	47,94	086	47,94	086
8,70	10	89	47	35	40	38,69	08700	38,69	08700	38,69	08700	47,94	087	47,94	087

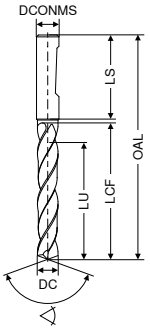
Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

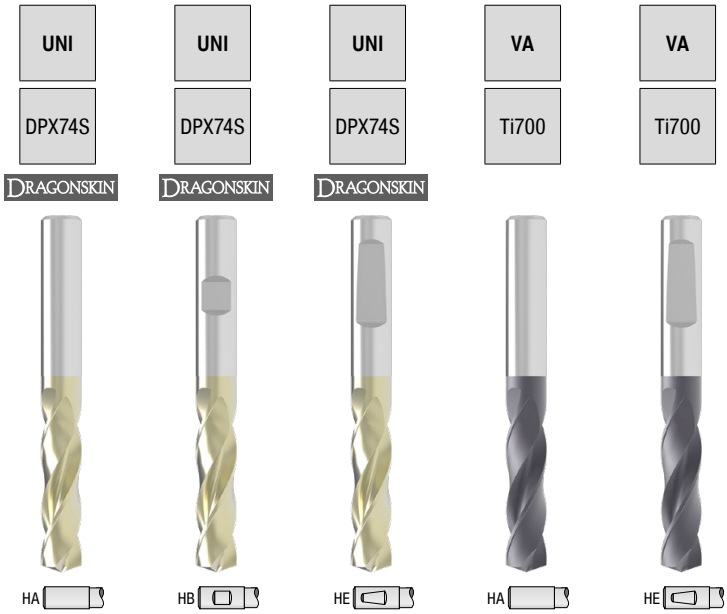
→ v_c Page 100+102

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T7

140°
Solid carbide
T7

140°
Solid carbide
T7

140°
Solid carbide
T5

140°
Solid carbide
T5

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...		Article no. 11 778 ...		Article no. 11 776 ...		Article no. 10 731 ...		Article no. 10 732 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
8,80	10	89	47	35	40	38,69	08800	38,69	08800	38,69	08800	47,94	088	47,94	088
8,90	10	89	47	35	40	38,69	08900	38,69	08900	38,69	08900	47,94	089	47,94	089
9,00	10	89	47	35	40	38,69	09000	38,69	09000	38,69	09000	47,94	090	47,94	090
9,10	10	89	47	35	40	38,69	09100	38,69	09100	38,69	09100	47,94	091	47,94	091
9,20	10	89	47	35	40	38,69	09200	38,69	09200	38,69	09200	47,94	092	47,94	092
9,30	10	89	47	35	40	38,69	09300	38,69	09300	38,69	09300	47,94	093	47,94	093
9,35	10	89	47	35	40	38,69	09350	38,69	09350	38,69	09350	47,94	930		
9,40	10	89	47	35	40	38,69	09400	38,69	09400	38,69	09400	47,94	094	47,94	094
9,45	10	89	47	35	40	38,69	09450	38,69	09450	38,69	09450	47,94	994		
9,50	10	89	47	35	40	38,69	09500	38,69	09500	38,69	09500	47,94	095	47,94	095
9,60	10	89	47	35	40	38,69	09600	38,69	09600	38,69	09600	47,94	096	47,94	096
9,70	10	89	47	35	40	38,69	09700	38,69	09700	38,69	09700	47,94	097	47,94	097
9,80	10	89	47	35	40	38,69	09800	38,69	09800	38,69	09800	47,94	098	47,94	098
9,90	10	89	47	35	40	38,69	09900	38,69	09900	38,69	09900	47,94	099	47,94	099
10,00	10	89	47	35	40	38,69	10000	38,69	10000	38,69	10000	47,94	100	47,94	100
10,10	12	102	55	40	45	55,33	10100	55,33	10100	55,33	10100	66,34	101	66,34	101
10,20	12	102	55	40	45	55,33	10200	55,33	10200	55,33	10200	66,34	102	66,34	102
10,30	12	102	55	40	45	55,33	10300	55,33	10300	55,33	10300	66,34	103	66,34	103
10,40	12	102	55	40	45	55,33	10400	55,33	10400	55,33	10400	66,34	104	66,34	104
10,50	12	102	55	40	45	55,33	10500	55,33	10500	55,33	10500	66,34	105	66,34	105
10,55	12	102	55	40	45	55,33	10550	55,33	10550	55,33	10550	66,34	932		
10,60	12	102	55	40	45	55,33	10600	55,33	10600	55,33	10600	66,34	106	66,34	106
10,70	12	102	55	40	45	55,33	10700	55,33	10700	55,33	10700	66,34	107	66,34	107
10,75	12	102	55	40	45	55,33	10750	55,33	10750	55,33	10750				
10,80	12	102	55	40	45	55,33	10800	55,33	10800	55,33	10800	66,34	108	66,34	108
10,90	12	102	55	40	45	55,33	10900	55,33	10900	55,33	10900	66,34	109	66,34	109
11,00	12	102	55	40	45	55,33	11000	55,33	11000	55,33	11000	66,34	110	66,34	110
11,10	12	102	55	40	45	55,33	11100	55,33	11100	55,33	11100	66,34	111	66,34	111
11,20	12	102	55	40	45	55,33	11200	55,33	11200	55,33	11200	66,34	112	66,34	112
11,25	12	102	55	40	45	55,33	11250	55,33	11250	55,33	11250	66,34	912		
11,30	12	102	55	40	45	55,33	11300	55,33	11300	55,33	11300	66,34	113	66,34	113
11,35	12	102	55	40	45	55,33	11350	55,33	11350	55,33	11350	66,34	913		
11,40	12	102	55	40	45	55,33	11400	55,33	11400	55,33	11400	66,34	114	66,34	114
11,45	12	102	55	40	45	55,33	11450	55,33	11450	55,33	11450	66,34	914		
11,50	12	102	55	40	45	55,33	11500	55,33	11500	55,33	11500	66,34	115	66,34	115
11,60	12	102	55	40	45	55,33	11600	55,33	11600	55,33	11600	66,34	116	66,34	116
11,70	12	102	55	40	45	55,33	11700	55,33	11700	55,33	11700	66,34	117	66,34	117
11,80	12	102	55	40	45	55,33	11800	55,33	11800	55,33	11800	66,34	118	66,34	118
11,90	12	102	55	40	45	55,33	11900	55,33	11900	55,33	11900	66,34	119	66,34	119
12,00	12	102	55	40	45	55,33	12000	55,33	12000	55,33	12000	66,34	120	66,34	120
12,15	14	107	60	43	45	74,51	12150	74,51	12150	74,51	12150	84,75	921		
12,25	14	107	60	43	45	74,51	12250	74,51	12250	74,51	12250				
12,50	14	107	60	43	45	74,51	12500	74,51	12500	74,51	12500	84,75	125	84,75	125

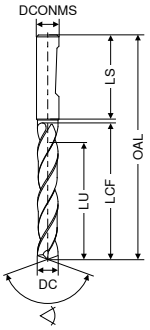
Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

→ v_c Page 100+102

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	UNI	VA	VA
DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5
	Article no. 11 777 ...	Article no. 11 778 ...	Article no. 11 776 ...	Article no. 10 731 ...	Article no. 10 732 ...

DC_{m7}	$DCONMS_{h6}$	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm										
12,55	14	107	60	43	45	74,51	12550	74,51	12550	74,51	12550	84,75	925		
12,70	14	107	60	43	45	74,51	12700	74,51	12700	74,51	12700				
12,80	14	107	60	43	45	74,51	12800	74,51	12800	74,51	12800	84,75	128	84,75	128
12,90	14	107	60	43	45	74,51	12900	74,51	12900	74,51	12900				
13,00	14	107	60	43	45	74,51	13000	74,51	13000	74,51	13000	84,75	130	84,75	130
13,10	14	107	60	43	45	74,51	13100	74,51	13100	74,51	13100				
13,30	14	107	60	43	45	74,51	13300	74,51	13300	74,51	13300				
13,35	14	107	60	43	45	74,51	13350	74,51	13350	74,51	13350	84,75	933		
13,50	14	107	60	43	45	74,51	13500	74,51	13500	74,51	13500	84,75	135	84,75	135
13,70	14	107	60	43	45	74,51	13700	74,51	13700	74,51	13700				
13,80	14	107	60	43	45	74,51	13800	74,51	13800	74,51	13800	84,75	138	84,75	138
14,00	14	107	60	43	45	74,51	14000	74,51	14000	74,51	14000	84,75	140	84,75	140
14,20	16	115	65	45	48	93,90	14200	93,90	14200	93,90	14200				
14,50	16	115	65	45	48	93,90	14500	93,90	14500	93,90	14500	114,60	145	114,60	145
14,80	16	115	65	45	48	93,90	14800	93,90	14800	93,90	14800	114,60	148	114,60	148
15,00	16	115	65	45	48	93,90	15000	93,90	15000	93,90	15000	114,60	150	114,60	150
15,10	16	115	65	45	48	93,90	15100	93,90	15100	93,90	15100				
15,25	16	115	65	45	48	93,90	15250	93,90	15250	93,90	15250				
15,30	16	115	65	45	48	93,90	15300	93,90	15300	93,90	15300				
15,35	16	115	65	45	48	93,90	15350	93,90	15350	93,90	15350	114,60	953		
15,50	16	115	65	45	48	93,90	15500	93,90	15500	93,90	15500	114,60	155	114,60	155
15,60	16	115	65	45	48	93,90	15600	93,90	15600	93,90	15600				
15,80	16	115	65	45	48	93,90	15800	93,90	15800	93,90	15800	114,60	158	114,60	158
16,00	16	115	65	45	48	93,90	16000	93,90	16000	93,90	16000	114,60	160	114,60	160
16,05	18	123	73	51	48	176,30	16050	176,30	16050	176,30	16050	230,40	960		
16,50	18	123	73	51	48	176,30	16500	176,30	16500	176,30	16500	230,40	165	230,40	165
16,80	18	123	73	51	48	176,30	16800	176,30	16800	176,30	16800	230,40	168	230,40	168
16,90	18	123	73	51	48	176,30	16900	176,30	16900	176,30	16900				
17,00	18	123	73	51	48	176,30	17000	176,30	17000	176,30	17000	230,40	170	230,40	170
17,50	18	123	73	51	48	176,30	17500	176,30	17500	176,30	17500	230,40	175	230,40	175
17,60	18	123	73	51	48	176,30	17600	176,30	17600	176,30	17600				
17,80	18	123	73	51	48	176,30	17800	176,30	17800	176,30	17800	230,40	178	230,40	178
18,00	18	123	73	51	48	176,30	18000	176,30	18000	176,30	18000	230,40	180	230,40	180
18,50	20	131	79	55	50	195,10	18500	195,10	18500	195,10	18500	253,60	185	253,60	185
18,80	20	131	79	55	50	195,10	18800	195,10	18800	195,10	18800	253,60	188	253,60	188
18,90	20	131	79	55	50	195,10	18900	195,10	18900	195,10	18900				
19,00	20	131	79	55	50	195,10	19000	195,10	19000	195,10	19000	253,60	190	253,60	190
19,35	20	131	79	55	50	195,10	19350	195,10	19350	195,10	19350	253,60	993		
19,50	20	131	79	55	50	195,10	19500	195,10	19500	195,10	19500	253,60	195	253,60	195
19,60	20	131	79	55	50	195,10	19600	195,10	19600	195,10	19600				
19,80	20	131	79	55	50	195,10	19800	195,10	19800	195,10	19800	253,60	198	253,60	198
20,00	20	131	79	55	50	195,10	20000	195,10	20000	195,10	20000	253,60	200	253,60	200
20,50	25	151	93	66	56	339,60	20500	339,60	20500	339,60	20500				

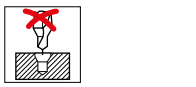
Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

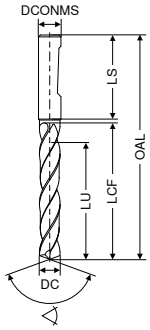
→ v_c Page 100+102

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD





	UNI	UNI	UNI	VA	VA
	DPX74S	DPX74S	DPX74S	Ti700	Ti700
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
					
	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5
DC m7	Article no. 11 777 ...	Article no. 11 778 ...	Article no. 11 776 ...	Article no. 10 731 ...	Article no. 10 732 ...
mm	EUR	EUR	EUR	EUR	EUR

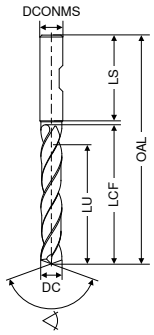
DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 777 ... EUR	11 778 ... EUR	11 776 ... EUR	10 731 ... EUR	10 732 ... EUR
21,00	25	151	93	66	56	339,60 **21000**	339,60 **21000**	339,60 **21000**		
21,50	25	151	93	66	56	339,60 **21500**	339,60 **21500**	339,60 **21500**		
22,00	25	151	93	66	56	339,60 **22000**	339,60 **22000**	339,60 **22000**		
22,50	25	153	96	72	56	339,60 **22500**	339,60 **22500**	339,60 **22500**		
23,00	25	153	96	72	56	339,60 **23000**	339,60 **23000**	339,60 **23000**		
23,50	25	153	96	72	56	339,60 **23500**	339,60 **23500**	339,60 **23500**		
24,00	25	153	96	72	56	339,60 **24000**	339,60 **24000**	339,60 **24000**		
24,50	25	153	96	75	56	339,60 **24500**	339,60 **24500**	339,60 **24500**		
25,00	25	153	96	75	56	339,60 **25000**	339,60 **25000**	339,60 **25000**		

Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

→ v_c Page 100+102

WPC – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN



HA / HB

140°

Solid carbide

T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
1,00	4	45	5,0	4,5	32,0	26,23	010			26,23	010		
1,10	4	45	5,5	5,0	31,5	26,23	011			26,23	011		
1,20	4	45	6,0	5,4	31,0	26,23	012			26,23	012		
1,30	4	45	6,5	5,9	31,5	26,23	013			26,23	013		
1,40	4	45	7,0	6,3	30,0	26,23	014			26,23	014		
1,50	4	50	7,5	6,8	35,0	26,23	015			26,23	015		
1,60	4	50	8,0	7,2	34,5	26,23	016			26,23	016		
1,70	4	50	8,5	7,7	34,0	26,23	017			26,23	017		
1,80	4	50	9,0	8,1	33,5	26,23	018			26,23	018		
1,90	4	50	9,5	8,6	33,0	26,23	019			26,23	019		
2,00	6	58	14,0	11,0	36,0	23,91	020	23,91	020	23,91	020	23,91	020
2,10	6	58	14,0	11,0	36,0	23,91	021	23,91	021	23,91	021	23,91	021
2,20	6	58	14,0	11,0	36,0	23,91	022	23,91	022	23,91	022	23,91	022
2,30	6	58	14,0	11,0	36,0	23,91	023	23,91	023	23,91	023	23,91	023
2,40	6	58	14,0	11,0	36,0	23,91	024	23,91	024	23,91	024	23,91	024
2,50	6	58	14,0	11,0	36,0	23,91	025	23,91	025	23,91	025	23,91	025
2,60	6	58	14,0	11,0	36,0	23,91	026	23,91	026	23,91	026	23,91	026
2,70	6	58	14,0	11,0	36,0	23,91	027	23,91	027	23,91	027	23,91	027
2,80	6	58	14,0	11,0	36,0	23,91	028	23,91	028	23,91	028	23,91	028
2,90	6	58	14,0	11,0	36,0	23,91	029	23,91	029	23,91	029	23,91	029
3,00	6	62	20,0	14,0	36,0	23,15	030	23,15	030	23,15	030	23,15	030
3,10	6	62	20,0	14,0	36,0	23,15	031	23,15	031	23,15	031	23,15	031
3,20	6	62	20,0	14,0	36,0	23,15	032	23,15	032	23,15	032	23,15	032
3,30	6	62	20,0	14,0	36,0	23,15	033	23,15	033	23,15	033	23,15	033
3,40	6	62	20,0	14,0	36,0	23,15	034	23,15	034	23,15	034	23,15	034
3,50	6	62	20,0	14,0	36,0	23,15	035	23,15	035	23,15	035	23,15	035
3,60	6	62	20,0	14,0	36,0	23,15	036	23,15	036	23,15	036	23,15	036
3,70	6	62	20,0	14,0	36,0	23,15	037	23,15	037	23,15	037	23,15	037
3,80	6	66	24,0	17,0	36,0	23,15	038	23,15	038	23,15	038	23,15	038
3,90	6	66	24,0	17,0	36,0	23,15	039	23,15	039	23,15	039	23,15	039
4,00	6	66	24,0	17,0	36,0	23,15	040	23,15	040	23,15	040	23,15	040
4,10	6	66	24,0	17,0	36,0	23,15	041	23,15	041	23,15	041	23,15	041
4,20	6	66	24,0	17,0	36,0	23,15	042	23,15	042	23,15	042	23,15	042
4,30	6	66	24,0	17,0	36,0	23,15	043	23,15	043	23,15	043	23,15	043
4,40	6	66	24,0	17,0	36,0	23,15	044	23,15	044	23,15	044	23,15	044
4,50	6	66	24,0	17,0	36,0	23,15	045	23,15	045	23,15	045	23,15	045
4,60	6	66	24,0	17,0	36,0	23,15	046	23,15	046	23,15	046	23,15	046
4,65	6	66	24,0	17,0	36,0	23,15	900	23,15	900	23,15	900	23,15	900
4,70	6	66	24,0	17,0	36,0	23,15	047	23,15	047	23,15	047	23,15	047

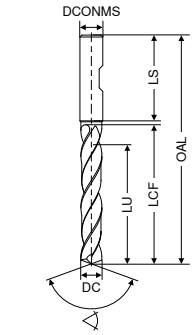
Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

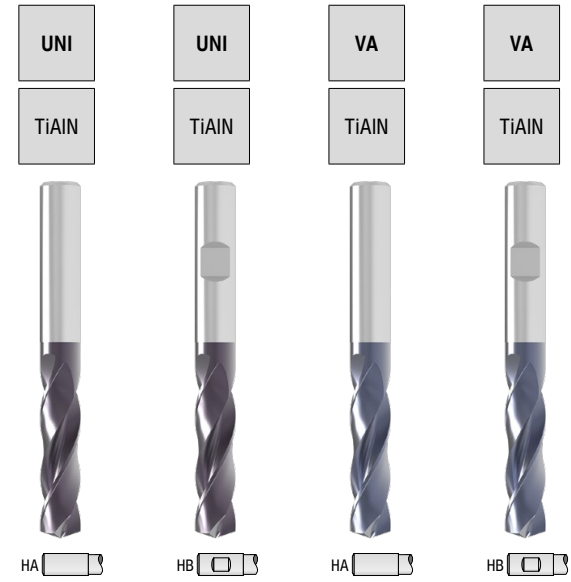
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
4,80	6	66	28,0	20,0	36,0	23,15	048	23,15	048	23,15	048	23,15	048
4,90	6	66	28,0	20,0	36,0	23,15	049	23,15	049	23,15	049	23,15	049
5,00	6	66	28,0	20,0	36,0	23,15	050	23,15	050	23,15	050	23,15	050
5,10	6	66	28,0	20,0	36,0	23,15	051	23,15	051	23,15	051	23,15	051
5,20	6	66	28,0	20,0	36,0	23,15	052	23,15	052	23,15	052	23,15	052
5,30	6	66	28,0	20,0	36,0	23,15	053	23,15	053	23,15	053	23,15	053
5,40	6	66	28,0	20,0	36,0	23,15	054	23,15	054	23,15	054	23,15	054
5,50	6	66	28,0	20,0	36,0	23,15	055	23,15	055	23,15	055	23,15	055
5,55	6	66	28,0	20,0	36,0	23,15	902	23,15	902	23,15	902	23,15	902
5,60	6	66	28,0	20,0	36,0	23,15	056	23,15	056	23,15	056	23,15	056
5,70	6	66	28,0	20,0	36,0	23,15	057	23,15	057	23,15	057	23,15	057
5,80	6	66	28,0	20,0	36,0	23,15	058	23,15	058	23,15	058	23,15	058
5,90	6	66	28,0	20,0	36,0	23,15	059	23,15	059	23,15	059	23,15	059
6,00	6	66	28,0	20,0	36,0	23,15	060	23,15	060	23,15	060	23,15	060
6,10	8	79	34,0	24,0	36,0	23,25	061	23,25	061	23,25	061	23,25	061
6,20	8	79	34,0	24,0	36,0	23,25	062	23,25	062	23,25	062	23,25	062
6,30	8	79	34,0	24,0	36,0	23,25	063	23,25	063	23,25	063	23,25	063
6,40	8	79	34,0	24,0	36,0	23,25	064	23,25	064	23,25	064	23,25	064
6,50	8	79	34,0	24,0	36,0	23,25	065	23,25	065	23,25	065	23,25	065
6,60	8	79	34,0	24,0	36,0	23,25	066	23,25	066	23,25	066	23,25	066
6,70	8	79	34,0	24,0	36,0	23,25	067	23,25	067	23,25	067	23,25	067
6,80	8	79	34,0	24,0	36,0	23,25	068	23,25	068	23,25	068	23,25	068
6,90	8	79	34,0	24,0	36,0	23,25	069	23,25	069	23,25	069	23,25	069
7,00	8	79	34,0	24,0	36,0	23,25	070	23,25	070	23,25	070	23,25	070
7,10	8	79	41,0	29,0	36,0	23,25	071	23,25	071	23,25	071	23,25	071
7,20	8	79	41,0	29,0	36,0	23,25	072	23,25	072	23,25	072	23,25	072
7,30	8	79	41,0	29,0	36,0	23,25	073	23,25	073	23,25	073	23,25	073
7,40	8	79	41,0	29,0	36,0	23,25	074	23,25	074	23,25	074	23,25	074
7,50	8	79	41,0	29,0	36,0	23,25	075	23,25	075	23,25	075	23,25	075
7,55	8	79	41,0	29,0	36,0	23,25	975	23,25	975	23,25	975	23,25	975
7,60	8	79	41,0	29,0	36,0	23,25	076	23,25	076	23,25	076	23,25	076
7,70	8	79	41,0	29,0	36,0	23,25	077	23,25	077	23,25	077	23,25	077
7,80	8	79	41,0	29,0	36,0	23,25	078	23,25	078	23,25	078	23,25	078
7,90	8	79	41,0	29,0	36,0	23,25	079	23,25	079	23,25	079	23,25	079
8,00	8	79	41,0	29,0	36,0	23,25	080	23,25	080	23,25	080	23,25	080
8,10	10	89	47,0	35,0	40,0	26,01	081	26,01	081	26,01	081	26,01	081
8,20	10	89	47,0	35,0	40,0	26,01	082	26,01	082	26,01	082	26,01	082
8,30	10	89	47,0	35,0	40,0	26,01	083	26,01	083	26,01	083	26,01	083
8,40	10	89	47,0	35,0	40,0	26,01	084	26,01	084	26,01	084	26,01	084

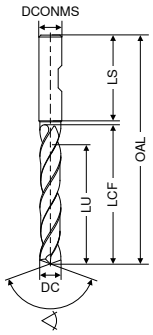
Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN



HA / HB

140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
8,50	10	89	47,0	35,0	40,0	26,01	085	26,01	085	26,01	085	26,01	085
8,60	10	89	47,0	35,0	40,0	26,01	086	26,01	086	26,01	086	26,01	086
8,70	10	89	47,0	35,0	40,0	26,01	087	26,01	087	26,01	087	26,01	087
8,80	10	89	47,0	35,0	40,0	26,01	088	26,01	088	26,01	088	26,01	088
8,90	10	89	47,0	35,0	40,0	26,01	089	26,01	089	26,01	089	26,01	089
9,00	10	89	47,0	35,0	40,0	26,01	090	26,01	090	26,01	090	26,01	090
9,10	10	89	47,0	35,0	40,0	26,01	091	26,01	091	26,01	091	26,01	091
9,20	10	89	47,0	35,0	40,0	26,01	092	26,01	092	26,01	092	26,01	092
9,25	10	89	47,0	35,0	40,0	26,01	925	26,01	925	26,01	925	26,01	925
9,30	10	89	47,0	35,0	40,0	26,01	093	26,01	093	26,01	093	26,01	093
9,40	10	89	47,0	35,0	40,0	26,01	094	26,01	094	26,01	094	26,01	094
9,50	10	89	47,0	35,0	40,0	26,01	095	26,01	095	26,01	095	26,01	095
9,60	10	89	47,0	35,0	40,0	26,01	096	26,01	096	26,01	096	26,01	096
9,70	10	89	47,0	35,0	40,0	26,01	097	26,01	097	26,01	097	26,01	097
9,80	10	89	47,0	35,0	40,0	26,01	098	26,01	098	26,01	098	26,01	098
9,90	10	89	47,0	35,0	40,0	26,01	099	26,01	099	26,01	099	26,01	099
10,00	10	89	47,0	35,0	40,0	26,01	100	26,01	100	26,01	100	26,01	100
10,10	12	102	55,0	40,0	45,0	39,24	101	39,24	101	39,24	101	39,24	101
10,20	12	102	55,0	40,0	45,0	39,24	102	39,24	102	39,24	102	39,24	102
10,30	12	102	55,0	40,0	45,0	39,24	103	39,24	103	39,24	103	39,24	103
10,40	12	102	55,0	40,0	45,0	39,24	104	39,24	104	39,24	104	39,24	104
10,50	12	102	55,0	40,0	45,0	39,24	105	39,24	105	39,24	105	39,24	105
10,60	12	102	55,0	40,0	45,0	39,24	106	39,24	106	39,24	106	39,24	106
10,70	12	102	55,0	40,0	45,0	39,24	107	39,24	107	39,24	107	39,24	107
10,80	12	102	55,0	40,0	45,0	39,24	108	39,24	108	39,24	108	39,24	108
10,90	12	102	55,0	40,0	45,0	39,24	109	39,24	109	39,24	109	39,24	109
11,00	12	102	55,0	40,0	45,0	39,24	110	39,24	110	39,24	110	39,24	110
11,10	12	102	55,0	40,0	45,0	39,24	111	39,24	111	39,24	111	39,24	111
11,20	12	102	55,0	40,0	45,0	39,24	112	39,24	112	39,24	112	39,24	112
11,30	12	102	55,0	40,0	45,0	39,24	113	39,24	113	39,24	113	39,24	113
11,40	12	102	55,0	40,0	45,0	39,24	114	39,24	114	39,24	114	39,24	114
11,50	12	102	55,0	40,0	45,0	39,24	115	39,24	115	39,24	115	39,24	115
11,60	12	102	55,0	40,0	45,0	39,24	116	39,24	116	39,24	116	39,24	116
11,70	12	102	55,0	40,0	45,0	39,24	117	39,24	117	39,24	117	39,24	117
11,80	12	102	55,0	40,0	45,0	39,24	118	39,24	118	39,24	118	39,24	118
11,90	12	102	55,0	40,0	45,0	39,24	119	39,24	119	39,24	119	39,24	119
12,00	12	102	55,0	40,0	45,0	39,24	120	39,24	120	39,24	120	39,24	120
12,25	14	107	60,0	43,0	45,0	52,57	122	52,57	122				
12,50	14	107	60,0	43,0	45,0	52,57	125	52,57	125	52,57	125	52,57	125

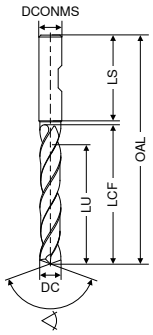
Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN



HA	HB	HA	HB
140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide
T1	T1	T1	T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
12,70	14	107	60,0	43,0	45,0	52,57	127	52,57	127	52,57	127	52,57	127
12,80	14	107	60,0	43,0	45,0	52,57	128	52,57	128				
12,90	14	107	60,0	43,0	45,0	52,57	129	52,57	129				
13,00	14	107	60,0	43,0	45,0	52,57	130	52,57	130	52,57	130	52,57	130
13,30	14	107	60,0	43,0	45,0	52,57	133	52,57	133				
13,50	14	107	60,0	43,0	45,0	52,57	135	52,57	135	52,57	135	52,57	135
13,70	14	107	60,0	43,0	45,0	52,57	137	52,57	137	52,57	137	52,57	137
13,80	14	107	60,0	43,0	45,0	52,57	138	52,57	138				
14,00	14	107	60,0	43,0	45,0	52,57	140	52,57	140	52,57	140	52,57	140
14,20	16	115	65,0	45,0	48,0	68,34	142	68,34	142				
14,50	16	115	65,0	45,0	48,0	68,34	145	68,34	145	68,34	145	68,34	145
14,70	16	115	65,0	45,0	48,0	68,34	147	68,34	147	68,34	147	68,34	147
14,80	16	115	65,0	45,0	48,0	68,34	148	68,34	148				
15,00	16	115	65,0	45,0	48,0	68,34	150	68,34	150	68,34	150	68,34	150
15,25	16	115	65,0	45,0	48,0	68,34	152	68,34	152				
15,30	16	115	65,0	45,0	48,0	68,34	153	68,34	153				
15,50	16	115	65,0	45,0	48,0	68,34	155	68,34	155	68,34	155	68,34	155
15,70	16	115	65,0	45,0	48,0	68,34	157	68,34	157	68,34	157	68,34	157
15,80	16	115	65,0	45,0	48,0	68,34	158	68,34	158				
16,00	16	115	65,0	45,0	48,0	68,34	160	68,34	160	68,34	160	68,34	160
16,50	18	123	73,0	51,0	48,0	115,80	165	115,80	165	115,80	165	115,80	165
16,80	18	123	73,0	51,0	48,0	115,80	168	115,80	168				
17,00	18	123	73,0	51,0	48,0	115,80	170	115,80	170	115,80	170	115,80	170
17,50	18	123	73,0	51,0	48,0	115,80	175	115,80	175	115,80	175	115,80	175
17,80	18	123	73,0	51,0	48,0	115,80	178	115,80	178				
18,00	18	123	73,0	51,0	48,0	115,80	180	115,80	180	115,80	180	115,80	180
18,50	20	131	79,0	55,0	50,0	126,80	185	126,80	185	126,80	185	126,80	185
18,80	20	131	79,0	55,0	50,0	126,80	188	126,80	188				
19,00	20	131	79,0	55,0	50,0	126,80	190	126,80	190	126,80	190	126,80	190
19,50	20	131	79,0	55,0	50,0	126,80	195	126,80	195	126,80	195	126,80	195
19,80	20	131	79,0	55,0	50,0	126,80	198	126,80	198				
20,00	20	131	79,0	55,0	50,0	126,80	200	126,80	200	126,80	200	126,80	200

Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

→ v_c Page 116+120

WTX – High Performance Drill, factory standard

- ▲ Special cutting edge geometry
- ▲ Special flute geometry
- ▲ Special core diameter
- ▲ 46–58 HRC

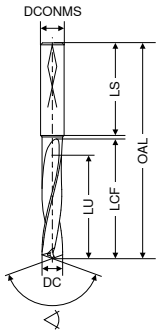
≤ 3xD



H

DPX64S

DRAGONSKIN





140°

Solid carbide

DC h7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 776 ...	
mm	mm	mm	mm	mm	mm	EUR	
2,55	4	55	20	7,6	28	43,79	02550
2,60	4	55	20	7,8	28	43,79	02600
2,70	4	55	20	8,1	28	43,79	02700
2,80	4	55	20	8,4	28	43,79	02800
2,90	4	55	20	8,7	28	43,79	02900
3,00	6	62	20	9,0	36	63,16	03000
3,10	6	62	20	9,3	36	63,16	03100
3,20	6	62	20	9,6	36	63,16	03200
3,30	6	62	20	9,9	36	63,16	03300
3,40	6	62	20	10,2	36	63,16	03400
3,50	6	62	20	10,5	36	63,16	03500
3,60	6	62	20	10,8	36	63,16	03600
3,70	6	62	20	11,1	36	63,16	03700
3,80	6	66	24	11,4	36	63,16	03800
3,90	6	66	24	11,7	36	63,16	03900
4,00	6	66	24	12,0	36	63,16	04000
4,10	6	66	24	12,3	36	63,16	04100
4,20	6	66	24	12,6	36	63,16	04200
4,30	6	66	24	12,9	36	63,16	04300
4,40	6	66	24	13,2	36	63,16	04400
4,50	6	66	24	13,5	36	63,16	04500
4,60	6	66	24	13,8	36	63,16	04600
4,70	6	66	24	14,1	36	63,16	04700
4,80	6	66	28	14,4	36	63,16	04800
4,90	6	66	28	14,7	36	63,16	04900
5,00	6	66	28	15,0	36	63,16	05000
5,10	6	66	28	15,3	36	63,16	05100
5,20	6	66	28	15,6	36	63,16	05200
5,30	6	66	28	15,9	36	63,16	05300
5,40	6	66	28	16,2	36	63,16	05400
5,50	6	66	28	16,5	36	63,16	05500
5,60	6	66	28	16,8	36	63,16	05600
5,70	6	66	28	17,1	36	63,16	05700
5,80	6	66	28	17,4	36	63,16	05800
5,90	6	66	28	17,7	36	63,16	05900
6,00	6	66	28	18,0	36	63,16	06000
6,10	8	79	34	18,3	36	82,08	06100
6,20	8	79	34	18,6	36	82,08	06200
6,30	8	79	34	18,9	36	82,08	06300
6,40	8	79	34	19,2	36	82,08	06400
6,50	8	79	34	19,5	36	82,08	06500
6,60	8	79	34	19,8	36	82,08	06600
6,70	8	79	34	20,1	36	82,08	06700
6,80	8	79	34	20,4	36	82,08	06800
6,90	8	79	34	20,7	36	82,08	06900
7,00	8	79	34	21,0	36	82,08	07000
7,10	8	79	41	21,3	36	82,08	07100
7,20	8	79	41	21,6	36	82,08	07200
7,30	8	79	41	21,9	36	82,08	07300
7,40	8	79	41	22,2	36	82,08	07400
7,50	8	79	41	22,5	36	82,08	07500
7,60	8	79	41	22,8	36	82,08	07600
7,70	8	79	41	23,1	36	82,08	07700
7,80	8	79	41	23,4	36	82,08	07800
7,90	8	79	41	23,7	36	82,08	07900
8,00	8	79	41	24,0	36	82,08	08000
8,10	10	89	47	24,3	40	105,50	08100
8,20	10	89	47	24,6	40	105,50	08200
8,30	10	89	47	24,9	40	105,50	08300
8,40	10	89	47	25,2	40	105,50	08400
8,50	10	89	47	25,5	40	105,50	08500
8,60	10	89	47	25,8	40	105,50	08600
8,70	10	89	47	26,1	40	105,50	08700
8,80	10	89	47	26,4	40	105,50	08800
8,90	10	89	47	26,7	40	105,50	08900
9,00	10	89	47	27,0	40	105,50	09000
9,10	10	89	47	27,3	40	105,50	09100
9,20	10	89	47	27,6	40	105,50	09200
9,30	10	89	47	27,9	40	105,50	09300
9,40	10	89	47	28,2	40	105,50	09400
9,50	10	89	47	28,5	40	105,50	09500
9,60	10	89	47	28,8	40	105,50	09600
9,70	10	89	47	29,1	40	105,50	09700
9,80	10	89	47	29,4	40	105,50	09800
9,90	10	89	47	29,7	40	105,50	09900
10,00	10	89	47	30,0	40	105,50	10000
10,10	12	102	55	30,3	45	150,60	10100
10,20	12	102	55	30,6	45	150,60	10200
10,30	12	102	55	30,9	45	150,60	10300
10,40	12	102	55	31,2	45	150,60	10400
10,50	12	102	55	31,5	45	150,60	10500
10,60	12	102	55	31,8	45	150,60	10600
10,70	12	102	55	32,1	45	150,60	10700
10,80	12	102	55	32,4	45	150,60	10800
10,90	12	102	55	32,7	45	150,60	10900
11,00	12	102	55	33,0	45	150,60	11000
11,10	12	102	55	33,3	45	150,60	11100
11,20	12	102	55	33,6	45	150,60	11200
11,30	12	102	55	33,9	45	150,60	11300
11,40	12	102	55	34,2	45	150,60	11400
11,50	12	102	55	34,5	45	150,60	11500
11,60	12	102	55	34,8	45	150,60	11600
11,70	12	102	55	35,1	45	150,60	11700
11,80	12	102	55	35,4	45	150,60	11800
11,90	12	102	55	35,7	45	150,60	11900
12,00	12	102	55	36,0	45	150,60	12000
12,10	14	107	60	36,3	45	194,60	12100
12,20	14	107	60	36,6	45	194,60	12200
12,30	14	107	60	36,9	45	194,60	12300
12,40	14	107	60	37,2	45	194,60	12400
12,50	14	107	60	37,5	45	194,60	12500
12,60	14	107	60	37,8	45	194,60	12600
12,70	14	107	60	38,1	45	194,60	12700
12,80	14	107	60	38,4	45	194,60	12800
12,90	14	107	60	38,7	45	194,60	12900
13,00	14	107	60	39,0	45	194,60	13000
13,10	14	107	60	39,3	45	194,60	13100
13,20	14	107	60	39,6	45	194,60	13200
13,30	14	107	60	39,9	45	194,60	13300
13,40	14	107	60	40,2	45	194,60	13400
13,50	14	107	60	40,5	45	194,60	13500
13,60	14	107	60	40,8	45	194,60	13600
13,70	14	107	60	41,1	45	194,60	13700
13,80	14	107	60	41,4	45	194,60	13800
13,90	14	107	60	41,7	45	194,60	13900
14,00	14	107	60	42,0	45	194,60	14000

Steel	○
Cast iron	○
Hardened < 45 HRC	●
Hardened 46–55 HRC	●
Hardened 56–60 HRC	○
Hardened 61–65 HRC	
Hardened 65–70 HRC	

→ v_c Page 111

WTX – High Performance Drill, factory standard

- ▲ Special cutting edge geometry
- ▲ Special flute geometry
- ▲ Special core diameter
- ▲ 46–70 HRC

2

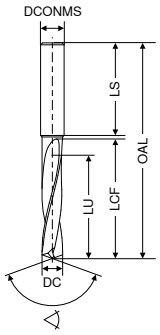
≤ 3xD



H

DPX64U

DRAGONSKIN





140°

Solid carbide

DC h7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 777 ... EUR	
mm	mm	mm	mm	mm	mm		
2,55	4	55	20	7,6	28	54,74	02550
2,60	4	55	20	7,8	28	54,74	02600
2,70	4	55	20	8,1	28	54,74	02700
2,80	4	55	20	8,4	28	54,74	02800
2,90	4	55	20	8,7	28	54,74	02900
3,00	6	62	20	9,0	36	78,95	03000
3,10	6	62	20	9,3	36	78,95	03100
3,20	6	62	20	9,6	36	78,95	03200
3,30	6	62	20	9,9	36	78,95	03300
3,40	6	62	20	10,2	36	78,95	03400
3,50	6	62	20	10,5	36	78,95	03500
3,60	6	62	20	10,8	36	78,95	03600
3,70	6	62	20	11,1	36	78,95	03700
3,80	6	66	24	11,4	36	78,95	03800
3,90	6	66	24	11,7	36	78,95	03900
4,00	6	66	24	12,0	36	78,95	04000
4,10	6	66	24	12,3	36	78,95	04100
4,20	6	66	24	12,6	36	78,95	04200
4,30	6	66	24	12,9	36	78,95	04300
4,40	6	66	24	13,2	36	78,95	04400
4,50	6	66	24	13,5	36	78,95	04500
4,60	6	66	24	13,8	36	78,95	04600
4,70	6	66	24	14,1	36	78,95	04700
4,80	6	66	28	14,4	36	78,95	04800
4,90	6	66	28	14,7	36	78,95	04900
5,00	6	66	28	15,0	36	78,95	05000
5,10	6	66	28	15,3	36	78,95	05100
5,20	6	66	28	15,6	36	78,95	05200
5,30	6	66	28	15,9	36	78,95	05300
5,40	6	66	28	16,2	36	78,95	05400
5,50	6	66	28	16,5	36	78,95	05500
5,60	6	66	28	16,8	36	78,95	05600
5,70	6	66	28	17,1	36	78,95	05700
5,80	6	66	28	17,4	36	78,95	05800
5,90	6	66	28	17,7	36	78,95	05900
6,00	6	66	28	18,0	36	78,95	06000
6,10	8	79	34	18,3	36	102,60	06100
6,20	8	79	34	18,6	36	102,60	06200
6,30	8	79	34	18,9	36	102,60	06300
6,40	8	79	34	19,2	36	102,60	06400
6,50	8	79	34	19,5	36	102,60	06500
6,60	8	79	34	19,8	36	102,60	06600
6,70	8	79	34	20,1	36	102,60	06700
6,80	8	79	34	20,4	36	102,60	06800
6,90	8	79	34	20,7	36	102,60	06900
7,00	8	79	34	21,0	36	102,60	07000
7,10	8	79	41	21,3	36	102,60	07100
7,20	8	79	41	21,6	36	102,60	07200
7,30	8	79	41	21,9	36	102,60	07300
7,40	8	79	41	22,2	36	102,60	07400
7,50	8	79	41	22,5	36	102,60	07500
7,60	8	79	41	22,8	36	102,60	07600
7,70	8	79	41	23,1	36	102,60	07700
7,80	8	79	41	23,4	36	102,60	07800
7,90	8	79	41	23,7	36	102,60	07900
8,00	8	79	41	24,0	36	102,60	08000
8,10	10	89	47	24,3	40	116,00	08100
8,20	10	89	47	24,6	40	116,00	08200
8,30	10	89	47	24,9	40	116,00	08300
8,40	10	89	47	25,2	40	116,00	08400
8,50	10	89	47	25,5	40	116,00	08500
8,60	10	89	47	25,8	40	116,00	08600
8,70	10	89	47	26,1	40	116,00	08700
8,80	10	89	47	26,4	40	116,00	08800
8,90	10	89	47	26,7	40	116,00	08900
9,00	10	89	47	27,0	40	116,00	09000
9,10	10	89	47	27,3	40	116,00	09100
9,20	10	89	47	27,6	40	116,00	09200
9,30	10	89	47	27,9	40	116,00	09300
9,40	10	89	47	28,2	40	116,00	09400
9,50	10	89	47	28,5	40	116,00	09500
9,60	10	89	47	28,8	40	116,00	09600
9,70	10	89	47	29,1	40	116,00	09700
9,80	10	89	47	29,4	40	116,00	09800
9,90	10	89	47	29,7	40	116,00	09900
10,00	10	89	47	30,0	40	116,00	10000
10,10	12	102	55	30,3	45	150,60	10100
10,20	12	102	55	30,6	45	150,60	10200
10,30	12	102	55	30,9	45	150,60	10300
10,40	12	102	55	31,2	45	150,60	10400
10,50	12	102	55	31,5	45	150,60	10500
10,60	12	102	55	31,8	45	150,60	10600
10,70	12	102	55	32,1	45	150,60	10700
10,80	12	102	55	32,4	45	150,60	10800
10,90	12	102	55	32,7	45	150,60	10900
11,00	12	102	55	33,0	45	150,60	11000
11,10	12	102	55	33,3	45	150,60	11100
11,20	12	102	55	33,6	45	150,60	11200
11,30	12	102	55	33,9	45	150,60	11300
11,40	12	102	55	34,2	45	150,60	11400
11,50	12	102	55	34,5	45	150,60	11500
11,60	12	102	55	34,8	45	150,60	11600
11,70	12	102	55	35,1	45	150,60	11700
11,80	12	102	55	35,4	45	150,60	11800
11,90	12	102	55	35,7	45	150,60	11900
12,00	12	102	55	36,0	45	150,60	12000
12,10	14	107	60	36,3	45	177,90	12100
12,20	14	107	60	36,6	45	177,90	12200
12,30	14	107	60	36,9	45	177,90	12300
12,40	14	107	60	37,2	45	177,90	12400
12,50	14	107	60	37,5	45	177,90	12500
12,60	14	107	60	37,8	45	177,90	12600
12,70	14	107	60	38,1	45	177,90	12700
12,80	14	107	60	38,4	45	177,90	12800
12,90	14	107	60	38,7	45	177,90	12900
13,00	14	107	60	39,0	45	177,90	13000
13,10	14	107	60	39,3	45	177,90	13100
13,20	14	107	60	39,6	45	177,90	13200
13,30	14	107	60	39,9	45	177,90	13300
13,40	14	107	60	40,2	45	177,90	13400
13,50	14	107	60	40,5	45	177,90	13500
13,60	14	107	60	40,8	45	177,90	13600
13,70	14	107	60	41,1	45	177,90	13700
13,80	14	107	60	41,4	45	177,90	13800
13,90	14	107	60	41,7	45	177,90	13900
14,00	14	107	60	42,0	45	177,90	14000

Hardened < 45 HRC	●
Hardened 46–55 HRC	●
Hardened 56–60 HRC	●
Hardened 61–65 HRC	●
Hardened 65–70 HRC	●

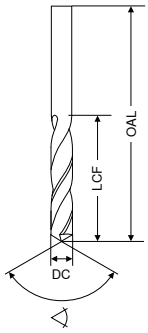
→ v_c Page 111

Twist drill similar to DIN 1897

- Rake angle 30°
- Shank Ø h7

≤ 3xD

N





118°
Solid carbide

DC h7	OAL	LCF	T3 Article no. 10 700 ...	
mm	mm	mm	EUR	
0,5	20	3,0	5,94	005
0,6	21	3,5	6,12	006
0,7	23	4,5	6,12	007
0,8	24	5,0	6,12	008
0,9	25	5,5	6,12	009
1,0	26	6,0	6,12	010
1,2	30	8,0	6,12	012
1,3	30	8,0	6,12	013
1,4	32	9,0	6,12	014
1,5	32	9,0	6,12	015
1,6	34	10,0	6,12	016
1,7	34	10,0	6,12	017
1,8	36	11,0	6,12	018
1,9	36	11,0	6,12	019
2,0	38	12,0	6,12	020
2,1	38	12,0	6,49	021
2,2	40	13,0	6,49	022
2,3	40	13,0	6,49	023
2,4	43	14,0	6,49	024
2,5	43	14,0	6,49	025
2,6	43	14,0	6,49	026
2,7	46	16,0	8,57	027
2,8	46	16,0	8,57	028
2,9	46	16,0	8,57	029
3,0	46	16,0	8,57	030
3,1	49	18,0	8,72	031
3,2	49	18,0	8,72	032
3,3	49	18,0	8,72	033
3,4	52	20,0	9,32	034
3,5	52	20,0	9,32	035
3,6	52	20,0	10,30	036
3,7	52	20,0	10,30	037
3,8	55	22,0	11,24	038
3,9	55	22,0	11,24	039
4,0	55	22,0	11,24	040
4,1	55	22,0	11,79	041
4,2	55	22,0	11,79	042
4,3	58	24,0	12,45	043
4,4	58	24,0	12,45	044
4,5	58	24,0	12,45	045
4,6	58	24,0	12,45	046
4,7	58	24,0	13,33	047
4,8	62	26,0	13,33	048
4,9	62	26,0	13,33	049
5,0	62	26,0	13,33	050
5,1	62	26,0	13,33	051
5,2	62	26,0	17,31	052
5,3	62	26,0	17,31	053
5,4	66	28,0	17,31	054
5,5	66	28,0	17,31	055
5,6	66	28,0	18,41	056
5,7	66	28,0	18,41	057
5,8	66	28,0	18,41	058
5,9	66	28,0	18,41	059
6,0	66	28,0	18,41	060
6,1	70	31,0	22,93	061
6,2	70	31,0	22,93	062
6,3	70	31,0	22,93	063
6,4	70	31,0	22,93	064
6,5	70	31,0	22,38	065
6,6	70	31,0	27,01	066
6,7	70	31,0	27,01	067
6,8	74	34,0	27,01	068
6,9	74	34,0	27,01	069
7,0	74	34,0	26,68	070
7,1	74	34,0	32,07	071
7,2	74	34,0	32,07	072
7,3	74	34,0	32,07	073
7,4	74	34,0	32,07	074
7,5	74	34,0	32,07	075
7,6	79	37,0	36,38	076
7,7	79	37,0	36,38	077
7,8	79	37,0	36,38	078
7,9	79	37,0	36,38	079
8,0	79	37,0	35,60	080
8,1	79	37,0	44,74	081
8,2	79	37,0	44,74	082
8,3	79	37,0	44,74	083
8,4	79	37,0	44,74	084
8,5	79	37,0	44,74	085
8,6	84	40,0	47,72	086
8,7	84	40,0	47,72	087
8,8	84	40,0	47,72	088
8,9	84	40,0	47,72	089
9,0	84	40,0	45,30	090
9,1	84	40,0	50,14	091
9,2	84	40,0	50,14	092
9,3	84	40,0	50,14	093
9,4	84	40,0	50,14	094
9,5	84	40,0	50,14	095
9,6	89	43,0	54,23	096
9,7	89	43,0	54,23	097
9,8	89	43,0	54,23	098
9,9	89	43,0	51,58	099
10,0	89	43,0	51,58	100
10,2	89	43,0	61,50	102
10,5	89	43,0	61,50	105
10,8	95	47,0	61,50	108
11,0	95	47,0	68,11	110
11,2	95	47,0	79,47	112
11,5	95	47,0	79,47	115
11,8	95	47,0	79,47	118
12,0	102	51,0	79,47	120
12,5	102	51,0	96,44	125
13,0	102	51,0	96,44	130
13,5	107	54,0	127,80	135
14,0	107	54,0	127,80	140
14,5	111	56,0	141,00	145
15,0	111	56,0	141,00	150
15,5	115	58,0	157,60	155
16,0	115	58,0	157,60	160
18,0	123	62,0	237,00	180
20,0	131	66,0	318,60	200

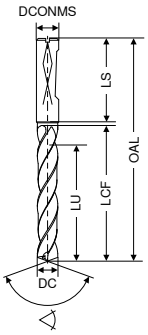
Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	○

→ v_c Page 119

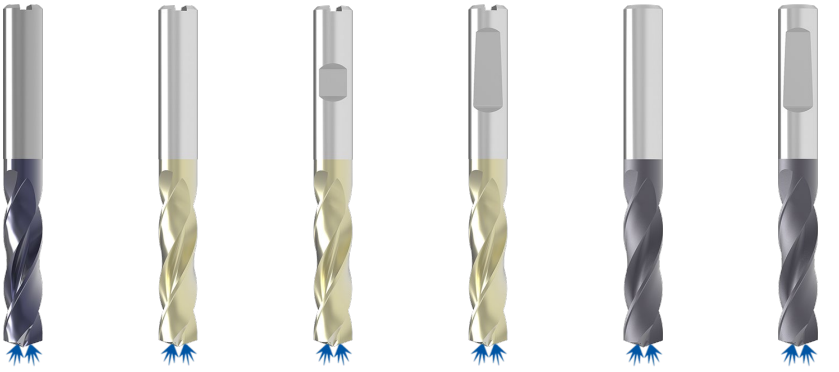
WTX – High Performance Drill, DIN 6537

≤ 3xD





Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



HA	HA	HB	HE	HA	HE
◁ 145°	◁ 140°	◁ 140°	◁ 140°	◁ 140°	◁ 140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	T7	T7	T7	T5	T5
Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
3,00	6	62	20	14	36	59,96	03000	45,74	03000	45,74	03000	45,74	03000	55,21	030	55,21	030
3,10	6	62	20	14	36	59,96	03100	45,74	03100	45,74	03100	45,74	03100	55,21	031	55,21	031
3,15	6	62	20	14	36			45,74	03150	45,74	03150	45,74	03150	55,21	831		
3,20	6	62	20	14	36	59,96	03200	45,74	03200	45,74	03200	45,74	03200	55,21	032	55,21	032
3,22	6	62	20	14	36			45,74	03220	45,74	03220	45,74	03220	55,21	832		
3,25	6	62	20	14	36			45,74	03250	45,74	03250	45,74	03250	55,21	890		
3,30	6	62	20	14	36	59,96	03300	45,74	03300	45,74	03300	45,74	03300	55,21	033	55,21	033
3,40	6	62	20	14	36	59,96	03400	45,74	03400	45,74	03400	45,74	03400	55,21	034	55,21	034
3,50	6	62	20	14	36	59,96	03500	45,74	03500	45,74	03500	45,74	03500	55,21	035	55,21	035
3,60	6	62	20	14	36	59,96	03600	45,74	03600	45,74	03600	45,74	03600	55,21	036	55,21	036
3,70	6	62	20	14	36	59,96	03700	45,74	03700	45,74	03700	45,74	03700	55,21	037	55,21	037
3,80	6	66	24	17	36	59,96	03800	45,74	03800	45,74	03800	45,74	03800	55,21	038	55,21	038
3,85	6	66	24	17	36			45,74	03850	45,74	03850	45,74	03850	55,21	838		
3,90	6	66	24	17	36	59,96	03900	45,74	03900	45,74	03900	45,74	03900	55,21	039	55,21	039
4,00	6	66	24	17	36	59,96	04000	45,74	04000	45,74	04000	45,74	04000	55,21	040	55,21	040
4,10	6	66	24	17	36	59,96	04100	45,74	04100	45,74	04100	45,74	04100	55,21	041	55,21	041
4,20	6	66	24	17	36	59,96	04200	45,74	04200	45,74	04200	45,74	04200	55,21	042	55,21	042
4,25	6	66	24	17	36			45,74	04250	45,74	04250	45,74	04250				
4,30	6	66	24	17	36	59,96	04300	45,74	04300	45,74	04300	45,74	04300	55,21	043	55,21	043
4,35	6	66	24	17	36			45,74	04350	45,74	04350	45,74	04350	55,21	843		
4,40	6	66	24	17	36	59,96	04400	45,74	04400	45,74	04400	45,74	04400	55,21	044	55,21	044
4,45	6	66	24	17	36			45,74	04450	45,74	04450	45,74	04450	55,21	844		
4,50	6	66	24	17	36	59,96	04500	45,74	04500	45,74	04500	45,74	04500	55,21	045	55,21	045
4,60	6	66	24	17	36	59,96	04600	45,74	04600	45,74	04600	45,74	04600	55,21	046	55,21	046
4,65	6	66	24	17	36	59,96	04650	45,74	04650	45,74	04650	45,74	04650	55,21	900	55,21	900
4,70	6	66	24	17	36	59,96	04700	45,74	04700	45,74	04700	45,74	04700	55,21	047	55,21	047
4,80	6	66	28	20	36	59,96	04800	45,74	04800	45,74	04800	45,74	04800	55,21	048	55,21	048
4,90	6	66	28	20	36	59,96	04900	45,74	04900	45,74	04900	45,74	04900	55,21	049	55,21	049
4,95	6	66	28	20	36			45,74	04950	45,74	04950	45,74	04950				
5,00	6	66	28	20	36	59,96	05000	45,74	05000	45,74	05000	45,74	05000	55,21	050	55,21	050
5,05	6	66	28	20	36			45,74	05050	45,74	05050	45,74	05050				
5,10	6	66	28	20	36	59,96	05100	45,74	05100	45,74	05100	45,74	05100	55,21	051	55,21	051
5,20	6	66	28	20	36	59,96	05200	45,74	05200	45,74	05200	45,74	05200	55,21	052	55,21	052
5,30	6	66	28	20	36	59,96	05300	45,74	05300	45,74	05300	45,74	05300	55,21	053	55,21	053
5,40	6	66	28	20	36	59,96	05400	45,74	05400	45,74	05400	45,74	05400	55,21	054	55,21	054
5,50	6	66	28	20	36	59,96	05500	45,74	05500	45,74	05500	45,74	05500	55,21	055	55,21	055
5,55	6	66	28	20	36	59,96	05550	45,74	05550	45,74	05550	45,74	05550	55,21	902	55,21	902
5,60	6	66	28	20	36	59,96	05600	45,74	05600	45,74	05600	45,74	05600	55,21	056	55,21	056
5,70	6	66	28	20	36	59,96	05700	45,74	05700	45,74	05700	45,74	05700	55,21	057	55,21	057
5,75	6	66	28	20	36			45,74	05750	45,74	05750	45,74	05750	55,21	916		
5,80	6	66	28	20	36	59,96	05800	45,74	05800	45,74	05800	45,74	05800	55,21	058	55,21	058
5,90	6	66	28	20	36	59,96	05900	45,74	05900	45,74	05900	45,74	05900	55,21	059	55,21	059

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

→ v_c Page 96–102

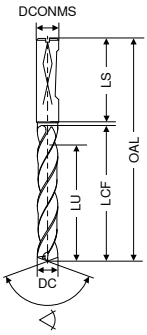
Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

Continued on next page

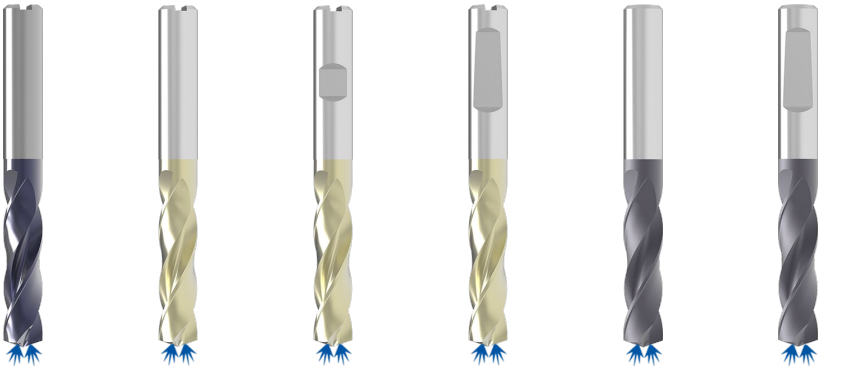
WTX – High Performance Drill, DIN 6537

≤ 3xD





Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



HA	HA	HB	HE	HA	HE
145°	140°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	T7	T7	T7	T5	T5
Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...

$DC_{m7/h7}$	$DCONMS_{h6}$	OAL	LCF	LU	LS	EUR	EUR	EUR	EUR	EUR	EUR
mm	mm	mm	mm	mm	mm						
5,95	6	66	28	20	36		45,74 05950	45,74 05950	45,74 05950	55,21 959	
6,00	6	66	28	20	36	59,96 06000	45,74 06000	45,74 06000	45,74 06000	55,21 060	55,21 060
6,10	8	79	34	24	36	78,58 06100	59,96 06100	59,96 06100	59,96 06100	70,21 061	70,21 061
6,20	8	79	34	24	36	78,58 06200	59,96 06200	59,96 06200	59,96 06200	70,21 062	70,21 062
6,30	8	79	34	24	36	78,58 06300	59,96 06300	59,96 06300	59,96 06300	70,21 063	70,21 063
6,40	8	79	34	24	36	78,58 06400	59,96 06400	59,96 06400	59,96 06400	70,21 064	70,21 064
6,50	8	79	34	24	36	78,58 06500	59,96 06500	59,96 06500	59,96 06500	70,21 065	70,21 065
6,60	8	79	34	24	36	78,58 06600	59,96 06600	59,96 06600	59,96 06600	70,21 066	70,21 066
6,70	8	79	34	24	36	78,58 06700	59,96 06700	59,96 06700	59,96 06700	70,21 067	70,21 067
6,80	8	79	34	24	36	78,58 06800	59,96 06800	59,96 06800	59,96 06800	70,21 068	70,21 068
6,90	8	79	34	24	36	78,58 06900	59,96 06900	59,96 06900	59,96 06900	70,21 069	70,21 069
7,00	8	79	34	24	36	78,58 07000	59,96 07000	59,96 07000	59,96 07000	70,21 070	70,21 070
7,10	8	79	41	29	36	78,58 07100	59,96 07100	59,96 07100	59,96 07100	70,21 071	70,21 071
7,20	8	79	41	29	36	78,58 07200	59,96 07200	59,96 07200	59,96 07200	70,21 072	70,21 072
7,30	8	79	41	29	36	78,58 07300	59,96 07300	59,96 07300	59,96 07300	70,21 073	70,21 073
7,40	8	79	41	29	36	78,58 07400	59,96 07400	59,96 07400	59,96 07400	70,21 074	70,21 074
7,45	8	79	41	29	36		59,96 07450	59,96 07450	59,96 07450	70,21 924	
7,50	8	79	41	29	36	78,58 07500	59,96 07500	59,96 07500	59,96 07500	70,21 075	70,21 075
7,60	8	79	41	29	36	78,58 07600	59,96 07600	59,96 07600	59,96 07600	70,21 076	70,21 076
7,70	8	79	41	29	36	78,58 07700	59,96 07700	59,96 07700	59,96 07700	70,21 077	70,21 077
7,80	8	79	41	29	36	78,58 07800	59,96 07800	59,96 07800	59,96 07800	70,21 078	70,21 078
7,90	8	79	41	29	36	78,58 07900	59,96 07900	59,96 07900	59,96 07900	70,21 079	70,21 079
8,00	8	79	41	29	36	78,58 08000	59,96 08000	59,96 08000	59,96 08000	70,21 080	70,21 080
8,10	10	89	47	35	40	88,07 08100	67,34 08100	67,34 08100	67,34 08100	81,22 081	81,22 081
8,20	10	89	47	35	40	88,07 08200	67,34 08200	67,34 08200	67,34 08200	81,22 082	81,22 082
8,30	10	89	47	35	40	88,07 08300	67,34 08300	67,34 08300	67,34 08300	81,22 083	81,22 083
8,40	10	89	47	35	40	88,07 08400	67,34 08400	67,34 08400	67,34 08400	81,22 084	81,22 084
8,50	10	89	47	35	40	88,07 08500	67,34 08500	67,34 08500	67,34 08500	81,22 085	81,22 085
8,60	10	89	47	35	40	88,07 08600	67,34 08600	67,34 08600	67,34 08600	81,22 086	81,22 086
8,70	10	89	47	35	40	88,07 08700	67,34 08700	67,34 08700	67,34 08700	81,22 087	81,22 087
8,80	10	89	47	35	40	88,07 08800	67,34 08800	67,34 08800	67,34 08800	81,22 088	81,22 088
8,90	10	89	47	35	40	88,07 08900	67,34 08900	67,34 08900	67,34 08900	81,22 089	81,22 089
9,00	10	89	47	35	40	88,07 09000	67,34 09000	67,34 09000	67,34 09000	81,22 090	81,22 090
9,10	10	89	47	35	40	88,07 09100	67,34 09100	67,34 09100	67,34 09100	81,22 091	81,22 091
9,20	10	89	47	35	40	88,07 09200	67,34 09200	67,34 09200	67,34 09200	81,22 092	81,22 092
9,30	10	89	47	35	40	88,07 09300	67,34 09300	67,34 09300	67,34 09300	81,22 093	81,22 093
9,35	10	89	47	35	40		67,34 09350	67,34 09350	67,34 09350	81,22 930	
9,40	10	89	47	35	40	88,07 09400	67,34 09400	67,34 09400	67,34 09400	81,22 094	81,22 094
9,45	10	89	47	35	40		67,34 09450	67,34 09450	67,34 09450	81,22 994	
9,50	10	89	47	35	40	88,07 09500	67,34 09500	67,34 09500	67,34 09500	81,22 095	81,22 095
9,60	10	89	47	35	40	88,07 09600	67,34 09600	67,34 09600	67,34 09600	81,22 096	81,22 096
9,70	10	89	47	35	40	88,07 09700	67,34 09700	67,34 09700	67,34 09700	81,22 097	81,22 097

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

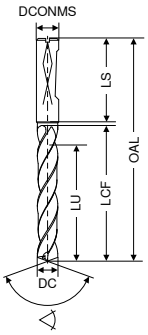
→ v_c Page 96–102

Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

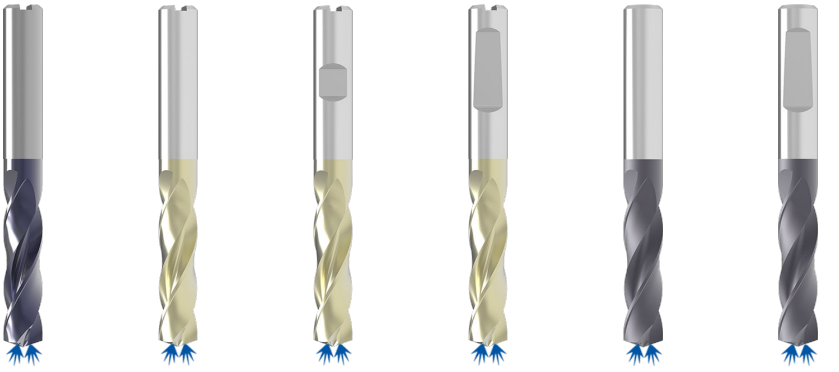
WTX – High Performance Drill, DIN 6537

≤ 3xD





Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



HA	HA	HB	HE	HA	HE
◁ 145°	◁ 140°	◁ 140°	◁ 140°	◁ 140°	◁ 140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	T7	T7	T7	T5	T5
Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
9,80	10	89	47	35	40	88,07	09800	67,34	09800	67,34	09800	67,34	09800	81,22	098	81,22	098
9,90	10	89	47	35	40	88,07	09900	67,34	09900	67,34	09900	67,34	09900	81,22	099	81,22	099
10,00	10	89	47	35	40	88,07	10000	67,34	10000	67,34	10000	67,34	10000	81,22	100	81,22	100
10,10	12	102	55	40	45	125,70	10100	94,79	10100	94,79	10100	94,79	10100	114,60	101	114,60	101
10,20	12	102	55	40	45	125,70	10200	94,79	10200	94,79	10200	94,79	10200	114,60	102	114,60	102
10,30	12	102	55	40	45	125,70	10300	94,79	10300	94,79	10300	94,79	10300	114,60	103	114,60	103
10,40	12	102	55	40	45	125,70	10400	94,79	10400	94,79	10400	94,79	10400	114,60	104	114,60	104
10,50	12	102	55	40	45	125,70	10500	94,79	10500	94,79	10500	94,79	10500	114,60	105	114,60	105
10,55	12	102	55	40	45			94,79	10550	94,79	10550	94,79	10550	114,60	932		
10,60	12	102	55	40	45	125,70	10600	94,79	10600	94,79	10600	94,79	10600	114,60	106	114,60	106
10,70	12	102	55	40	45	125,70	10700	94,79	10700	94,79	10700	94,79	10700	114,60	107	114,60	107
10,75	12	102	55	40	45			94,79	10750	94,79	10750	94,79	10750				
10,80	12	102	55	40	45	125,70	10800	94,79	10800	94,79	10800	94,79	10800	114,60	108	114,60	108
10,90	12	102	55	40	45	125,70	10900	94,79	10900	94,79	10900	94,79	10900	114,60	109	114,60	109
11,00	12	102	55	40	45	125,70	11000	94,79	11000	94,79	11000	94,79	11000	114,60	110	114,60	110
11,10	12	102	55	40	45	125,70	11100	94,79	11100	94,79	11100	94,79	11100	114,60	111	114,60	111
11,20	12	102	55	40	45	125,70	11200	94,79	11200	94,79	11200	94,79	11200	114,60	112	114,60	112
11,25	12	102	55	40	45			94,79	11250	94,79	11250	94,79	11250	114,60	912		
11,30	12	102	55	40	45	125,70	11300	94,79	11300	94,79	11300	94,79	11300	114,60	113	114,60	113
11,35	12	102	55	40	45			94,79	11350	94,79	11350	94,79	11350	114,60	913		
11,40	12	102	55	40	45	125,70	11400	94,79	11400	94,79	11400	94,79	11400	114,60	114	114,60	114
11,45	12	102	55	40	45			94,79	11450	94,79	11450	94,79	11450	114,60	914		
11,50	12	102	55	40	45	125,70	11500	94,79	11500	94,79	11500	94,79	11500	114,60	115	114,60	115
11,60	12	102	55	40	45	125,70	11600	94,79	11600	94,79	11600	94,79	11600	114,60	116	114,60	116
11,70	12	102	55	40	45	125,70	11700	94,79	11700	94,79	11700	94,79	11700	114,60	117	114,60	117
11,80	12	102	55	40	45	125,70	11800	94,79	11800	94,79	11800	94,79	11800	114,60	118	114,60	118
11,90	12	102	55	40	45	125,70	11900	94,79	11900	94,79	11900	94,79	11900	114,60	119	114,60	119
12,00	12	102	55	40	45	125,70	12000	94,79	12000	94,79	12000	94,79	12000	114,60	120	114,60	120
12,15	14	107	60	43	45			133,30	12150	133,30	12150	133,30	12150	155,50	921		
12,25	14	107	60	43	45			133,30	12250	133,30	12250	133,30	12250				
12,50	14	107	60	43	45	176,30	12500	133,30	12500	133,30	12500	133,30	12500	155,50	125	155,50	125
12,55	14	107	60	43	45			133,30	12550	133,30	12550	133,30	12550	155,50	925		
12,70	14	107	60	43	45			133,30	12700	133,30	12700	133,30	12700				
12,80	14	107	60	43	45	176,30	12800	133,30	12800	133,30	12800	133,30	12800	155,50	128	155,50	128
12,90	14	107	60	43	45			133,30	12900	133,30	12900	133,30	12900				
13,00	14	107	60	43	45	176,30	13000	133,30	13000	133,30	13000	133,30	13000	155,50	130	155,50	130
13,10	14	107	60	43	45			133,30	13100	133,30	13100	133,30	13100				
13,30	14	107	60	43	45			133,30	13300	133,30	13300	133,30	13300				
13,35	14	107	60	43	45			133,30	13350	133,30	13350	133,30	13350	155,50	933		
13,50	14	107	60	43	45	176,30	13500	133,30	13500	133,30	13500	133,30	13500	155,50	135	155,50	135
13,70	14	107	60	43	45			133,30	13700	133,30	13700	133,30	13700				
13,80	14	107	60	43	45	176,30	13800	133,30	13800	133,30	13800	133,30	13800	155,50	138	155,50	138

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

→ v_c Page 96–102

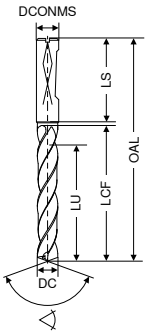
Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

Continued on next page

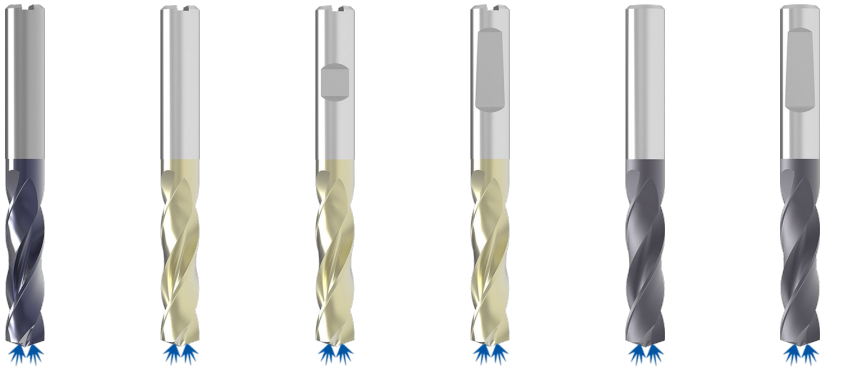
WTX – High Performance Drill, DIN 6537

≤ 3xD





Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HA	HB	HE	HA	HE
	145°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	T7	T7	T7	T5	T5
	Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...

DC $_{m7/h7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
14,00	14	107	60	43	45	176,30	14000	133,30	14000	133,30	14000	133,30	14000	155,50	140	155,50	140
14,20	16	115	65	45	48			159,90	14200	159,90	14200	159,90	14200				
14,50	16	115	65	45	48	210,50	14500	159,90	14500	159,90	14500	159,90	14500	195,10	145	195,10	145
14,80	16	115	65	45	48	210,50	14800	159,90	14800	159,90	14800	159,90	14800	195,10	148	195,10	148
15,00	16	115	65	45	48	210,50	15000	159,90	15000	159,90	15000	159,90	15000	195,10	150	195,10	150
15,10	16	115	65	45	48			159,90	15100	159,90	15100	159,90	15100				
15,25	16	115	65	45	48			159,90	15250	159,90	15250	159,90	15250				
15,30	16	115	65	45	48			159,90	15300	159,90	15300	159,90	15300				
15,35	16	115	65	45	48			159,90	15350	159,90	15350	159,90	15350	195,10	953		
15,50	16	115	65	45	48	210,50	15500	159,90	15500	159,90	15500	159,90	15500	195,10	155	195,10	155
15,60	16	115	65	45	48			159,90	15600	159,90	15600	159,90	15600				
15,80	16	115	65	45	48	210,50	15800	159,90	15800	159,90	15800	159,90	15800	195,10	158	195,10	158
16,00	16	115	65	45	48	210,50	16000	159,90	16000	159,90	16000	159,90	16000	195,10	160	195,10	160
16,05	18	123	73	51	48			246,90	16050	246,90	16050	246,90	16050	294,30	960		
16,50	18	123	73	51	48	321,90	16500	246,90	16500	246,90	16500	246,90	16500	294,30	165	294,30	165
16,80	18	123	73	51	48	321,90	16800	246,90	16800	246,90	16800	246,90	16800	294,30	168	294,30	168
16,90	18	123	73	51	48			246,90	16900	246,90	16900	246,90	16900				
17,00	18	123	73	51	48	321,90	17000	246,90	17000	246,90	17000	246,90	17000	294,30	170	294,30	170
17,50	18	123	73	51	48	321,90	17500	246,90	17500	246,90	17500	246,90	17500	294,30	175	294,30	175
17,60	18	123	73	51	48			246,90	17600	246,90	17600	246,90	17600				
17,80	18	123	73	51	48	321,90	17800	246,90	17800	246,90	17800	246,90	17800	294,30	178	294,30	178
18,00	18	123	73	51	48	321,90	18000	246,90	18000	246,90	18000	246,90	18000	294,30	180	294,30	180
18,50	20	131	79	55	50	349,30	18500	270,10	18500	270,10	18500	270,10	18500	379,10	185	379,10	185
18,80	20	131	79	55	50	349,30	18800	270,10	18800	270,10	18800	270,10	18800	379,10	188	379,10	188
18,90	20	131	79	55	50			270,10	18900	270,10	18900	270,10	18900				
19,00	20	131	79	55	50	349,30	19000	270,10	19000	270,10	19000	270,10	19000	379,10	190	379,10	190
19,35	20	131	79	55	50			270,10	19350	270,10	19350	270,10	19350	379,10	993		
19,50	20	131	79	55	50	349,30	19500	270,10	19500	270,10	19500	270,10	19500	379,10	195	379,10	195
19,60	20	131	79	55	50			270,10	19600	270,10	19600	270,10	19600				
19,80	20	131	79	55	50	349,30	19800	270,10	19800	270,10	19800	270,10	19800	379,10	198	379,10	198
20,00	20	131	79	55	50	349,30	20000	270,10	20000	270,10	20000	270,10	20000	379,10	200	379,10	200
20,50	25	151	93	66	56			488,30	20500	488,30	20500	488,30	20500				
21,00	25	151	93	66	56			488,30	21000	488,30	21000	488,30	21000				
21,50	25	151	93	66	56			488,30	21500	488,30	21500	488,30	21500				
22,00	25	151	93	66	56			488,30	22000	488,30	22000	488,30	22000				
22,50	25	153	96	72	56			488,30	22500	488,30	22500	488,30	22500				
23,00	25	153	96	72	56			488,30	23000	488,30	23000	488,30	23000				
23,50	25	153	96	72	56			488,30	23500	488,30	23500	488,30	23500				
24,00	25	153	96	72	56			488,30	24000	488,30	24000	488,30	24000				
24,50	25	153	96	75	56			488,30	24500	488,30	24500	488,30	24500				
25,00	25	153	96	75	56			488,30	25000	488,30	25000	488,30	25000				

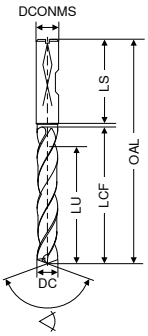
Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

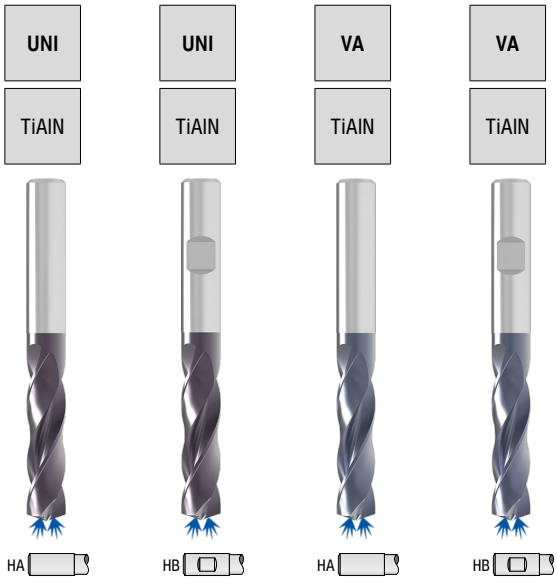
→ v_c Page 96–102

Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
1,00	4	45	6,0	4,5	32,0	35,93	010			35,93	010		
1,10	4	45	6,6	5,0	31,5	35,93	011			35,93	011		
1,20	4	45	7,2	5,4	31,0	35,93	012			35,93	012		
1,30	4	45	7,8	5,9	31,5	35,93	013			35,93	013		
1,40	4	45	8,4	6,3	30,0	35,93	014			35,93	014		
1,50	4	50	9,0	6,8	35,0	35,93	015			35,93	015		
1,60	4	50	9,6	7,2	34,5	35,93	016			35,93	016		
1,70	4	50	10,2	7,7	34,0	35,93	017			35,93	017		
1,80	4	50	10,8	8,1	33,5	35,93	018			35,93	018		
1,90	4	50	11,4	8,6	33,0	35,93	019			35,93	019		
2,00	4	50	12,0	9,0	33,0	35,93	020			35,93	020		
2,10	4	55	12,6	9,5	37,5	35,93	021			35,93	021		
2,20	4	55	13,2	9,9	37,0	35,93	022			35,93	022		
2,30	4	55	13,8	10,4	36,5	35,93	023			35,93	023		
2,40	4	55	14,4	10,8	36,0	35,93	024			35,93	024		
2,50	4	55	15,0	11,3	35,5	35,93	025			35,93	025		
2,60	4	55	15,6	11,7	35,5	35,93	026			35,93	026		
2,70	4	55	16,2	12,2	35,0	35,93	027			35,93	027		
2,80	4	55	16,8	12,6	34,0	35,93	028			35,93	028		
2,90	4	55	17,4	13,1	34,0	35,93	029			35,93	029		
3,00	6	62	20,0	14,0	36,0	30,20	030	30,20	030	30,20	030	30,20	030
3,10	6	62	20,0	14,0	36,0	30,20	031	30,20	031	30,20	031	30,20	031
3,20	6	62	20,0	14,0	36,0	30,20	032	30,20	032	30,20	032	30,20	032
3,25	6	62	20,0	14,0	36,0	30,20	890	30,20	890	29,44	03250		
3,30	6	62	20,0	14,0	36,0	30,20	033	30,20	033	30,20	033	30,20	033
3,40	6	62	20,0	14,0	36,0	30,20	034	30,20	034	30,20	034	30,20	034
3,50	6	62	20,0	14,0	36,0	30,20	035	30,20	035	30,20	035	30,20	035
3,60	6	62	20,0	14,0	36,0	30,20	036	30,20	036	30,20	036	30,20	036
3,70	6	62	20,0	14,0	36,0	30,20	037	30,20	037	30,20	037	30,20	037
3,80	6	66	24,0	17,0	36,0	30,20	038	30,20	038	30,20	038	30,20	038
3,90	6	66	24,0	17,0	36,0	30,20	039	30,20	039	30,20	039	30,20	039
4,00	6	66	24,0	17,0	36,0	30,20	040	30,20	040	30,20	040	30,20	040
4,10	6	66	24,0	17,0	36,0	30,20	041	30,20	041	30,20	041	30,20	041
4,20	6	66	24,0	17,0	36,0	30,20	042	30,20	042	30,20	042	30,20	042
4,30	6	66	24,0	17,0	36,0	30,20	043	30,20	043	30,20	043	30,20	043
4,40	6	66	24,0	17,0	36,0	30,20	044	30,20	044	30,20	044	30,20	044
4,50	6	66	24,0	17,0	36,0	30,20	045	30,20	045	30,20	045	30,20	045
4,60	6	66	24,0	17,0	36,0	30,20	046	30,20	046	30,20	046	30,20	046
4,65	6	66	24,0	17,0	36,0	30,20	900	30,20	900	30,20	900	30,20	900
4,70	6	66	24,0	17,0	36,0	30,20	047	30,20	047	30,20	047	30,20	047
4,80	6	66	28,0	20,0	36,0	30,20	048	30,20	048	30,20	048	30,20	048

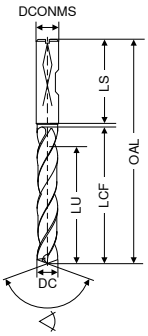
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

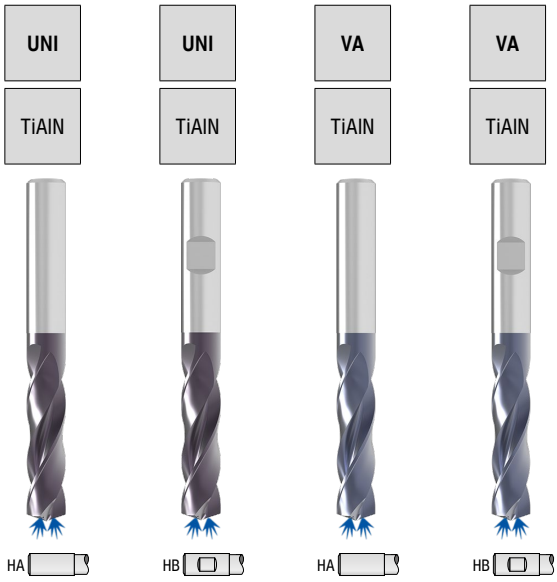
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
4,90	6	66	28,0	20,0	36,0	30,20	049	30,20	049	30,20	049	30,20	049
5,00	6	66	28,0	20,0	36,0	30,20	050	30,20	050	30,20	050	30,20	050
5,10	6	66	28,0	20,0	36,0	30,20	051	30,20	051	30,20	051	30,20	051
5,20	6	66	28,0	20,0	36,0	30,20	052	30,20	052	30,20	052	30,20	052
5,30	6	66	28,0	20,0	36,0	30,20	053	30,20	053	30,20	053	30,20	053
5,40	6	66	28,0	20,0	36,0	30,20	054	30,20	054	30,20	054	30,20	054
5,50	6	66	28,0	20,0	36,0	30,20	055	30,20	055	30,20	055	30,20	055
5,55	6	66	28,0	20,0	36,0	30,20	902	30,20	902	30,20	902	30,20	902
5,60	6	66	28,0	20,0	36,0	30,20	056	30,20	056	30,20	056	30,20	056
5,70	6	66	28,0	20,0	36,0	30,20	057	30,20	057	30,20	057	30,20	057
5,80	6	66	28,0	20,0	36,0	30,20	058	30,20	058	30,20	058	30,20	058
5,90	6	66	28,0	20,0	36,0	30,20	059	30,20	059	30,20	059	30,20	059
6,00	6	66	28,0	20,0	36,0	30,20	060	30,20	060	30,20	060	30,20	060
6,10	8	79	34,0	24,0	36,0	40,88	061	40,88	061	40,88	061	40,88	061
6,20	8	79	34,0	24,0	36,0	40,88	062	40,88	062	40,88	062	40,88	062
6,30	8	79	34,0	24,0	36,0	40,88	063	40,88	063	40,88	063	40,88	063
6,40	8	79	34,0	24,0	36,0	40,88	064	40,88	064	40,88	064	40,88	064
6,50	8	79	34,0	24,0	36,0	40,88	065	40,88	065	40,88	065	40,88	065
6,60	8	79	34,0	24,0	36,0	40,88	066	40,88	066	40,88	066	40,88	066
6,70	8	79	34,0	24,0	36,0	40,88	067	40,88	067	40,88	067	40,88	067
6,80	8	79	34,0	24,0	36,0	40,88	068	40,88	068	40,88	068	40,88	068
6,90	8	79	34,0	24,0	36,0	40,88	069	40,88	069	40,88	069	40,88	069
7,00	8	79	34,0	24,0	36,0	40,88	070	40,88	070	40,88	070	40,88	070
7,10	8	79	41,0	29,0	36,0	40,88	071	40,88	071	40,88	071	40,88	071
7,20	8	79	41,0	29,0	36,0	40,88	072	40,88	072	40,88	072	40,88	072
7,30	8	79	41,0	29,0	36,0	40,88	073	40,88	073	40,88	073	40,88	073
7,40	8	79	41,0	29,0	36,0	40,88	074	40,88	074	40,88	074	40,88	074
7,45	8	79	41,0	29,0	36,0	40,88	924	40,88	924	39,47	07450		
7,50	8	79	41,0	29,0	36,0	40,88	075	40,88	075	40,88	075	40,88	075
7,55	8	79	41,0	29,0	36,0	40,88	975	40,88	975	40,88	975	40,88	975
7,60	8	79	41,0	29,0	36,0	40,88	076	40,88	076	40,88	076	40,88	076
7,70	8	79	41,0	29,0	36,0	40,88	077	40,88	077	40,88	077	40,88	077
7,80	8	79	41,0	29,0	36,0	40,88	078	40,88	078	40,88	078	40,88	078
7,90	8	79	41,0	29,0	36,0	40,88	079	40,88	079	40,88	079	40,88	079
8,00	8	79	41,0	29,0	36,0	40,88	080	40,88	080	40,88	080	40,88	080
8,10	10	89	47,0	35,0	40,0	46,96	081	46,96	081	46,96	081	46,96	081
8,20	10	89	47,0	35,0	40,0	46,96	082	46,96	082	46,96	082	46,96	082
8,30	10	89	47,0	35,0	40,0	46,96	083	46,96	083	46,96	083	46,96	083
8,40	10	89	47,0	35,0	40,0	46,96	084	46,96	084	46,96	084	46,96	084
8,50	10	89	47,0	35,0	40,0	46,96	085	46,96	085	46,96	085	46,96	085
8,60	10	89	47,0	35,0	40,0	46,96	086	46,96	086	46,96	086	46,96	086

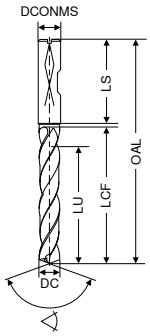
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

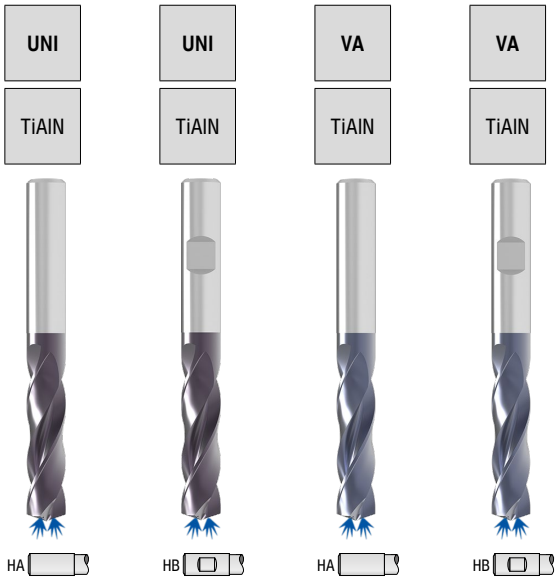
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
8,70	10	89	47,0	35,0	40,0	46,96	087	46,96	087	46,96	087	46,96	087
8,80	10	89	47,0	35,0	40,0	46,96	088	46,96	088	46,96	088	46,96	088
8,90	10	89	47,0	35,0	40,0	46,96	089	46,96	089	46,96	089	46,96	089
9,00	10	89	47,0	35,0	40,0	46,96	090	46,96	090	46,96	090	46,96	090
9,10	10	89	47,0	35,0	40,0	46,96	091	46,96	091	46,96	091	46,96	091
9,20	10	89	47,0	35,0	40,0	46,96	092	46,96	092	46,96	092	46,96	092
9,25	10	89	47,0	35,0	40,0	46,96	925	46,96	925	46,96	925	46,96	925
9,30	10	89	47,0	35,0	40,0	46,96	093	46,96	093	46,96	093	46,96	093
9,35	10	89	47,0	35,0	40,0	46,96	930	46,96	930	45,67	09350		
9,40	10	89	47,0	35,0	40,0	46,96	094	46,96	094	46,96	094	46,96	094
9,50	10	89	47,0	35,0	40,0	46,96	095	46,96	095	46,96	095	46,96	095
9,60	10	89	47,0	35,0	40,0	46,96	096	46,96	096	46,96	096	46,96	096
9,70	10	89	47,0	35,0	40,0	46,96	097	46,96	097	46,96	097	46,96	097
9,80	10	89	47,0	35,0	40,0	46,96	098	46,96	098	46,96	098	46,96	098
9,90	10	89	47,0	35,0	40,0	46,96	099	46,96	099	46,96	099	46,96	099
10,00	10	89	47,0	35,0	40,0	46,96	100	46,96	100	46,96	100	46,96	100
10,10	12	102	55,0	40,0	45,0	67,34	101	67,34	101	67,34	101	67,34	101
10,20	12	102	55,0	40,0	45,0	67,34	102	67,34	102	67,34	102	67,34	102
10,30	12	102	55,0	40,0	45,0	67,34	103	67,34	103	67,34	103	67,34	103
10,40	12	102	55,0	40,0	45,0	67,34	104	67,34	104	67,34	104	67,34	104
10,50	12	102	55,0	40,0	45,0	67,34	105	67,34	105	67,34	105	67,34	105
10,60	12	102	55,0	40,0	45,0	67,34	106	67,34	106	67,34	106	67,34	106
10,70	12	102	55,0	40,0	45,0	67,34	107	67,34	107	67,34	107	67,34	107
10,75	12	102	55,0	40,0	45,0	67,34	904	67,34	904	64,97	10750		
10,80	12	102	55,0	40,0	45,0	67,34	108	67,34	108	67,34	108	67,34	108
10,90	12	102	55,0	40,0	45,0	67,34	109	67,34	109	67,34	109	67,34	109
11,00	12	102	55,0	40,0	45,0	67,34	110	67,34	110	67,34	110	67,34	110
11,10	12	102	55,0	40,0	45,0	67,34	111	67,34	111	67,34	111	67,34	111
11,20	12	102	55,0	40,0	45,0	67,34	112	67,34	112	67,34	112	67,34	112
11,25	12	102	55,0	40,0	45,0	67,34	912	67,34	912	64,51	11250		
11,30	12	102	55,0	40,0	45,0	67,34	113	67,34	113	67,34	113	67,34	113
11,40	12	102	55,0	40,0	45,0	67,34	114	67,34	114	67,34	114	67,34	114
11,50	12	102	55,0	40,0	45,0	67,34	115	67,34	115	67,34	115	67,34	115
11,60	12	102	55,0	40,0	45,0	67,34	116	67,34	116	67,34	116	67,34	116
11,70	12	102	55,0	40,0	45,0	67,34	117	67,34	117	67,34	117	67,34	117
11,80	12	102	55,0	40,0	45,0	67,34	118	67,34	118	67,34	118	67,34	118
11,90	12	102	55,0	40,0	45,0	67,34	119	67,34	119	67,34	119	67,34	119
12,00	12	102	55,0	40,0	45,0	67,34	120	67,34	120	67,34	120	67,34	120
12,25	14	107	60,0	43,0	45,0	93,46	122	93,46	122	87,97	12250		
12,50	14	107	60,0	43,0	45,0	93,46	125	93,46	125	93,46	125	93,46	125
12,70	14	107	60,0	43,0	45,0	93,46	127	93,46	127	93,46	127	93,46	127

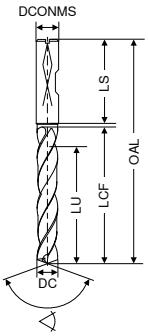
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

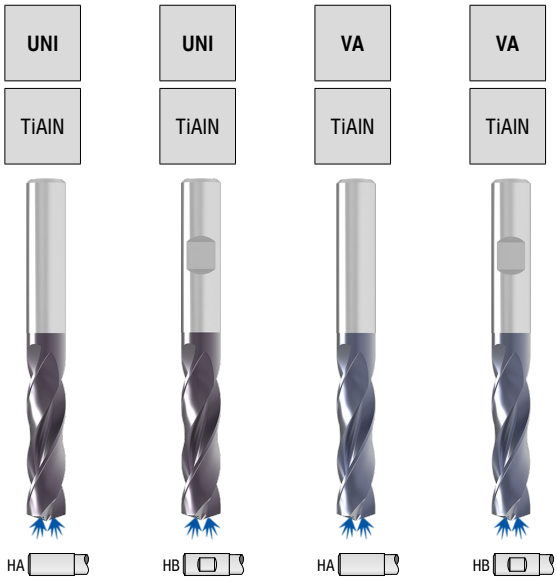
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
12,80	14	107	60,0	43,0	45,0	93,46	128	93,46	128				
12,90	14	107	60,0	43,0	45,0	93,46	129	93,46	129				
13,00	14	107	60,0	43,0	45,0	93,46	130	93,46	130	93,46	130	93,46	130
13,10	14	107	60,0	43,0	45,0	93,46	131	93,46	131				
13,30	14	107	60,0	43,0	45,0	93,46	133	93,46	133				
13,50	14	107	60,0	43,0	45,0	93,46	135	93,46	135	93,46	135	93,46	135
13,70	14	107	60,0	43,0	45,0	93,46	137	93,46	137	93,46	137	93,46	137
13,80	14	107	60,0	43,0	45,0	93,46	138	93,46	138				
14,00	14	107	60,0	43,0	45,0	93,46	140	93,46	140	93,46	140	93,46	140
14,20	16	115	65,0	45,0	48,0	115,80	142	115,80	142				
14,50	16	115	65,0	45,0	48,0	115,80	145	115,80	145	115,80	145	115,80	145
14,70	16	115	65,0	45,0	48,0	115,80	147	115,80	147	115,80	147	115,80	147
14,80	16	115	65,0	45,0	48,0	115,80	148	115,80	148				
15,00	16	115	65,0	45,0	48,0	115,80	150	115,80	150	115,80	150	115,80	150
15,10	16	115	65,0	45,0	48,0	115,80	151	115,80	151				
15,25	16	115	65,0	45,0	48,0	115,80	152	115,80	152				
15,30	16	115	65,0	45,0	48,0	115,80	153	115,80	153				
15,50	16	115	65,0	45,0	48,0	115,80	155	115,80	155	115,80	155	115,80	155
15,60	16	115	65,0	45,0	48,0	115,80	156	115,80	156				
15,70	16	115	65,0	45,0	48,0	115,80	157	115,80	157	115,80	157	115,80	157
15,80	16	115	65,0	45,0	48,0	115,80	158	115,80	158				
16,00	16	115	65,0	45,0	48,0	115,80	160	115,80	160	115,80	160	115,80	160
16,50	18	123	73,0	51,0	48,0	183,00	165	183,00	165	183,00	165	183,00	165
16,80	18	123	73,0	51,0	48,0	183,00	168	183,00	168				
16,90	18	123	73,0	51,0	48,0	183,00	169	183,00	169				
17,00	18	123	73,0	51,0	48,0	183,00	170	183,00	170	183,00	170	183,00	170
17,50	18	123	73,0	51,0	48,0	183,00	175	183,00	175	183,00	175	183,00	175
17,60	18	123	73,0	51,0	48,0	183,00	176	183,00	176				
17,80	18	123	73,0	51,0	48,0	183,00	178	183,00	178				
18,00	18	123	73,0	51,0	48,0	183,00	180	183,00	180	183,00	180	183,00	180
18,50	20	131	79,0	55,0	50,0	201,80	185	201,80	185	201,80	185	201,80	185
18,80	20	131	79,0	55,0	50,0	201,80	188	201,80	188				
18,90	20	131	79,0	55,0	50,0	201,80	189	201,80	189				
19,00	20	131	79,0	55,0	50,0	201,80	190	201,80	190	201,80	190	201,80	190
19,50	20	131	79,0	55,0	50,0	201,80	195	201,80	195	201,80	195	201,80	195
19,60	20	131	79,0	55,0	50,0	201,80	196	201,80	196				
19,80	20	131	79,0	55,0	50,0	201,80	198	201,80	198				
20,00	20	131	79,0	55,0	50,0	201,80	200	201,80	200	201,80	200	201,80	200

Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

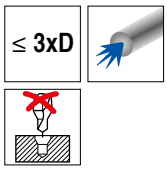
→ v_c Page 116+120

WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials

2

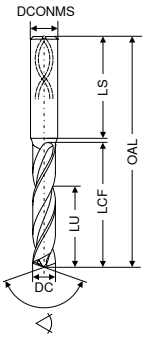
≤ 3xD



Ti

DPA54

DRAGONSKIN





140°

Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	T4 Article no. 10 786 ...	
mm	mm	mm	mm	mm	mm	EUR	
3,00	6	62	20	14	36	55,66	030
3,10	6	62	20	14	36	55,66	031
3,20	6	62	20	14	36	55,66	032
3,30	6	62	20	14	36	55,66	033
3,40	6	62	20	14	36	55,66	034
3,50	6	62	20	14	36	55,66	035
3,60	6	62	20	14	36	55,66	036
3,70	6	62	20	14	36	55,66	037
3,80	6	66	24	17	36	55,66	038
3,90	6	66	24	17	36	55,66	039
3,97	6	66	24	17	36	55,66	900
4,00	6	66	24	17	36	55,66	040
4,10	6	66	24	17	36	55,66	041
4,20	6	66	24	17	36	55,66	042
4,23	6	66	24	17	36	55,66	901
4,30	6	66	24	17	36	55,66	043
4,40	6	66	24	17	36	55,66	044
4,50	6	66	24	17	36	55,66	045
4,60	6	66	24	17	36	55,66	046
4,70	6	66	24	17	36	55,66	047
4,80	6	66	28	20	36	55,66	048
4,90	6	66	28	20	36	55,66	049
5,00	6	66	28	20	36	55,66	050
5,10	6	66	28	20	36	55,66	051
5,20	6	66	28	20	36	55,66	052
5,30	6	66	28	20	36	55,66	053
5,40	6	66	28	20	36	55,66	054
5,50	6	66	28	20	36	55,66	055
5,56	6	66	28	20	36	55,66	902
5,60	6	66	28	20	36	55,66	056
5,70	6	66	28	20	36	55,66	057
5,80	6	66	28	20	36	55,66	058
5,90	6	66	28	20	36	55,66	059
6,00	6	66	28	20	36	55,66	060
6,10	8	79	34	24	36	74,72	061
6,20	8	79	34	24	36	74,72	062
6,30	8	79	34	24	36	74,72	063
6,35	8	79	34	24	36	74,72	903
6,40	8	79	34	24	36	74,72	064
6,50	8	79	34	24	36	74,72	065
6,60	8	79	34	24	36	74,72	066
6,70	8	79	34	24	36	74,72	067
6,80	8	79	34	24	36	74,72	068
6,90	8	79	34	24	36	74,72	069
7,00	8	79	34	24	36	74,72	070
7,10	8	79	41	29	36	74,72	071
7,20	8	79	41	29	36	74,72	072
7,30	8	79	41	29	36	74,72	073
7,40	8	79	41	29	36	74,72	074
7,50	8	79	41	29	36	74,72	075
7,60	8	79	41	29	36	74,72	076
7,70	8	79	41	29	36	74,72	077
7,80	8	79	41	29	36	74,72	078
7,90	8	79	41	29	36	74,72	079
7,94	8	79	41	29	36	74,72	904
8,00	8	79	41	29	36	74,72	080
8,10	10	89	47	35	40	90,38	081
8,20	10	89	47	35	40	90,38	082
8,30	10	89	47	35	40	90,38	083
8,40	10	89	47	35	40	90,38	084
8,50	10	89	47	35	40	90,38	085
8,60	10	89	47	35	40	90,38	086
8,70	10	89	47	35	40	90,38	087
8,80	10	89	47	35	40	90,38	088
8,90	10	89	47	35	40	90,38	089
9,00	10	89	47	35	40	90,38	090
9,10	10	89	47	35	40	90,38	091
9,20	10	89	47	35	40	90,38	092
9,30	10	89	47	35	40	90,38	093
9,40	10	89	47	35	40	90,38	094
9,50	10	89	47	35	40	90,38	095
9,55	10	89	47	35	40	90,38	905
9,60	10	89	47	35	40	90,38	096
9,70	10	89	47	35	40	90,38	097
9,80	10	89	47	35	40	90,38	098
9,90	10	89	47	35	40	90,38	099
10,00	10	89	47	35	40	90,38	100
10,10	12	102	55	40	45	130,00	101
10,20	12	102	55	40	45	130,00	102
10,30	12	102	55	40	45	130,00	103
10,40	12	102	55	40	45	130,00	104
10,50	12	102	55	40	45	130,00	105
10,60	12	102	55	40	45	130,00	106
10,70	12	102	55	40	45	130,00	107
10,80	12	102	55	40	45	130,00	108
10,90	12	102	55	40	45	130,00	109
11,00	12	102	55	40	45	130,00	110
11,10	12	102	55	40	45	130,00	111
11,11	12	102	55	40	45	130,00	906
11,20	12	102	55	40	45	130,00	112
11,30	12	102	55	40	45	130,00	113
11,40	12	102	55	40	45	130,00	114
11,50	12	102	55	40	45	130,00	115
11,60	12	102	55	40	45	130,00	116
11,70	12	102	55	40	45	130,00	117
11,80	12	102	55	40	45	130,00	118
11,90	12	102	55	40	45	130,00	119
12,00	12	102	55	40	45	130,00	120
12,10	14	107	60	43	45	168,60	121
12,20	14	107	60	43	45	168,60	122
12,30	14	107	60	43	45	168,60	123
12,40	14	107	60	43	45	168,60	124
12,50	14	107	60	43	45	168,60	125
12,60	14	107	60	43	45	168,60	126
12,70	14	107	60	43	45	168,60	907
12,80	14	107	60	43	45	168,60	128
12,90	14	107	60	43	45	168,60	129
13,00	14	107	60	43	45	168,60	130
13,10	14	107	60	43	45	168,60	131
13,20	14	107	60	43	45	168,60	132
13,30	14	107	60	43	45	168,60	133
13,40	14	107	60	43	45	168,60	134
13,50	14	107	60	43	45	168,60	135
13,60	14	107	60	43	45	168,60	136
13,70	14	107	60	43	45	168,60	137
13,80	14	107	60	43	45	168,60	138
13,90	14	107	60	43	45	168,60	139

Steel	
Stainless steel	●
Cast iron	
Non ferrous metals	
Heat resistant alloys	●

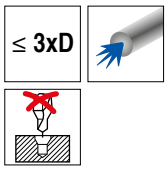
→ v_c Page 95

Continued on next page

WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials

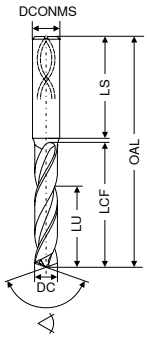
≤ 3xD



Ti

DPA54

DRAGONSKIN





140°

Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	T4 Article no. 10 786 ...	
mm	mm	mm	mm	mm	mm	EUR	
14,0	14	107	60	43	45	168,60	140
14,1	16	115	65	45	48	200,60	141
14,2	16	115	65	45	48	200,60	142
14,3	16	115	65	45	48	200,60	143
14,4	16	115	65	45	48	200,60	144
14,5	16	115	65	45	48	200,60	145
14,6	16	115	65	45	48	200,60	146
14,7	16	115	65	45	48	200,60	147
14,8	16	115	65	45	48	200,60	148
14,9	16	115	65	45	48	200,60	149
15,0	16	115	65	45	48	200,60	150
15,1	16	115	65	45	48	200,60	151
15,2	16	115	65	45	48	200,60	152
15,3	16	115	65	45	48	200,60	153
15,4	16	115	65	45	48	200,60	154
15,5	16	115	65	45	48	200,60	155
15,6	16	115	65	45	48	200,60	156
15,7	16	115	65	45	48	200,60	157
15,8	16	115	65	45	48	200,60	158
15,9	16	115	65	45	48	200,60	159
16,0	16	115	65	45	48	200,60	160
16,1	18	123	73	51	48	200,60	161
16,2	18	123	73	51	48	200,60	162
16,3	18	123	73	51	48	200,60	163
16,4	18	123	73	51	48	200,60	164
16,5	18	123	73	51	48	282,20	165
16,6	18	123	73	51	48	282,20	166
16,7	18	123	73	51	48	282,20	167
16,8	18	123	73	51	48	282,20	168
16,9	18	123	73	51	48	282,20	169
17,0	18	123	73	51	48	282,20	170
17,1	18	123	73	51	48	282,20	171
17,2	18	123	73	51	48	282,20	172
17,3	18	123	73	51	48	282,20	173
17,4	18	123	73	51	48	282,20	174
17,5	18	123	73	51	48	282,20	175
17,6	18	123	73	51	48	282,20	176
17,7	18	123	73	51	48	282,20	177
17,8	18	123	73	51	48	282,20	178
17,9	18	123	73	51	48	282,20	179
18,0	18	123	73	51	48	282,20	180
18,1	20	131	79	55	50	352,70	181
18,2	20	131	79	55	50	352,70	182
18,3	20	131	79	55	50	352,70	183
18,4	20	131	79	55	50	352,70	184
18,5	20	131	79	55	50	352,70	185
18,6	20	131	79	55	50	352,70	186
18,7	20	131	79	55	50	352,70	187
18,8	20	131	79	55	50	352,70	188
18,9	20	131	79	55	50	352,70	189
19,0	20	131	79	55	50	352,70	190
19,1	20	131	79	55	50	352,70	191
19,2	20	131	79	55	50	352,70	192
19,3	20	131	79	55	50	352,70	193
19,4	20	131	79	55	50	352,70	194
19,5	20	131	79	55	50	352,70	195
19,6	20	131	79	55	50	352,70	196
19,7	20	131	79	55	50	352,70	197
19,8	20	131	79	55	50	352,70	198
19,9	20	131	79	55	50	352,70	199
20,0	20	131	79	55	50	352,70	200

Steel	
Stainless steel	●
Cast iron	
Non ferrous metals	
Heat resistant alloys	●

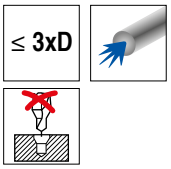
→ v_c Page 95

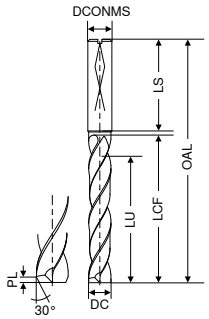
WTX – High Performance Drill, DIN 6537

- universal application
- four guidance lands
- polished chip flutes
- Type ALU 3xD (10 722 ...) on request
- PL = corner chamfers

2

≤ 3xD





180

Ti800





180°
Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 720 ... EUR	
mm	mm	mm	mm	mm	mm	mm		
3,00	6	62	20	14	36	0,15	71,31	030
3,10	6	62	20	14	36	0,16	71,31	031
3,20	6	62	20	14	36	0,16	71,31	032
3,30	6	62	20	14	36	0,17	71,31	033
3,40	6	62	20	14	36	0,17	71,31	034
3,50	6	62	20	14	36	0,18	71,31	035
3,60	6	62	20	14	36	0,18	71,31	036
3,70	6	62	20	14	36	0,19	71,31	037
3,80	6	66	24	17	36	0,19	71,31	038
3,90	6	66	24	17	36	0,20	71,31	039
4,00	6	66	24	17	36	0,20	71,31	040
4,10	6	66	24	17	36	0,21	71,31	041
4,20	6	66	24	17	36	0,21	71,31	042
4,30	6	66	24	17	36	0,22	71,31	043
4,40	6	66	24	17	36	0,22	71,31	044
4,50	6	66	24	17	36	0,23	71,31	045
4,60	6	66	24	17	36	0,23	71,31	046
4,65	6	66	24	17	36	0,23	71,31	900
4,70	6	66	24	17	36	0,24	71,31	047
4,80	6	66	28	20	36	0,24	71,31	048
4,90	6	66	28	20	36	0,25	71,31	049
5,00	6	66	28	20	36	0,25	71,31	050
5,10	6	66	28	20	36	0,26	71,31	051
5,20	6	66	28	20	36	0,26	71,31	052
5,30	6	66	28	20	36	0,27	71,31	053
5,40	6	66	28	20	36	0,27	71,31	054
5,50	6	66	28	20	36	0,28	71,31	055
5,55	6	66	28	20	36	0,28	71,31	902
5,60	6	66	28	20	36	0,28	71,31	056
5,70	6	66	28	20	36	0,29	71,31	057
5,80	6	66	28	20	36	0,29	71,31	058
5,90	6	66	28	20	36	0,30	71,31	059
6,00	6	66	28	20	36	0,30	71,31	060
6,10	8	79	34	24	36	0,31	87,07	061
6,20	8	79	34	24	36	0,31	87,07	062
6,30	8	79	34	24	36	0,32	87,07	063
6,40	8	79	34	24	36	0,32	87,07	064
6,50	8	79	34	24	36	0,33	87,07	065
6,60	8	79	34	24	36	0,33	87,07	066
6,70	8	79	34	24	36	0,34	87,07	067
6,80	8	79	34	24	36	0,34	87,07	068
6,90	8	79	34	24	36	0,35	87,07	069
7,00	8	79	34	24	36	0,35	87,07	070
7,10	8	79	41	29	36	0,36	87,07	071
7,20	8	79	41	29	36	0,36	87,07	072
7,30	8	79	41	29	36	0,37	87,07	073
7,40	8	79	41	29	36	0,37	87,07	074
7,50	8	79	41	29	36	0,38	87,07	075
7,60	8	79	41	29	36	0,38	87,07	076
7,70	8	79	41	29	36	0,39	87,07	077
7,80	8	79	41	29	36	0,39	87,07	078
7,90	8	79	41	29	36	0,40	87,07	079
8,00	8	79	41	29	36	0,40	87,07	080
8,10	10	89	47	35	40	0,41	116,80	081

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 720 ... EUR	
mm	mm	mm	mm	mm	mm	mm		
8,20	10	89	47	35	40	0,41	116,80	082
8,30	10	89	47	35	40	0,42	116,80	083
8,40	10	89	47	35	40	0,42	116,80	084
8,50	10	89	47	35	40	0,43	116,80	085
8,60	10	89	47	35	40	0,43	116,80	086
8,70	10	89	47	35	40	0,44	116,80	087
8,80	10	89	47	35	40	0,44	116,80	088
8,90	10	89	47	35	40	0,45	116,80	089
9,00	10	89	47	35	40	0,45	116,80	090
9,10	10	89	47	35	40	0,46	116,80	091
9,20	10	89	47	35	40	0,46	116,80	092
9,30	10	89	47	35	40	0,47	116,80	093
9,40	10	89	47	35	40	0,47	116,80	094
9,50	10	89	47	35	40	0,48	116,80	095
9,60	10	89	47	35	40	0,48	116,80	096
9,70	10	89	47	35	40	0,49	116,80	097
9,80	10	89	47	35	40	0,49	116,80	098
9,90	10	89	47	35	40	0,50	116,80	099
10,00	10	89	47	35	40	0,50	116,80	100
10,10	12	100	53	38	45	0,51	147,80	101
10,20	12	100	53	38	45	0,51	147,80	102
10,30	12	100	53	38	45	0,52	147,80	103
10,40	12	100	53	38	45	0,52	147,80	104
10,50	12	100	53	38	45	0,53	147,80	105
10,60	12	100	53	38	45	0,53	147,80	106
10,70	12	100	53	38	45	0,54	147,80	107
10,80	12	100	53	38	45	0,54	147,80	108
10,90	12	100	53	38	45	0,55	147,80	109
11,00	12	100	53	38	45	0,55	147,80	110
11,10	12	100	53	38	45	0,56	147,80	111
11,20	12	100	53	38	45	0,56	147,80	112
11,30	12	100	53	38	45	0,57	147,80	113
11,40	12	100	53	38	45	0,57	147,80	114
11,50	12	100	53	38	45	0,58	147,80	115
11,60	12	100	53	38	45	0,58	147,80	116
11,70	12	100	53	38	45	0,59	147,80	117
11,80	12	100	53	38	45	0,59	147,80	118
11,90	12	100	53	38	45	0,60	147,80	119
12,00	12	100	53	38	45	0,60	147,80	120
12,50	14	105	58	41	45	0,63	240,20	125
12,80	14	105	58	41	45	0,64	240,20	128
13,00	14	105	58	41	45	0,65	240,20	130
13,50	14	105	58	41	45	0,68	240,20	135
13,80	14	105	58	41	45	0,69	240,20	138
14,00	14	105	58	41	45	0,70	240,20	140
14,50	16	113	63	43	48	0,73	302,00	145
14,80	16	113	63	43	48	0,74	302,00	148
15,00	16	113	63	43	48	0,75	302,00	150
15,50	16	113	63	43	48	0,78	302,00	155
15,80	16	113	63	43	48	0,79	302,00	158
16,00	16	113	63	43	48	0,80	302,00	160
16,50	18	121	71	49	48	0,83	406,60	165
16,80	18	121	71	49	48	0,84	406,60	168
17,00	18	121	71	49	48	0,85	406,60	170
17,50	18	121	71	49	48	0,88	406,60	175
17,80	18	121	71	49	48	0,89	406,60	178
18,00	18	121	71	49	48	0,90	406,60	180
18,50	20	129	77	53	50	0,93	520,20	185
18,80	20	129	77	53	50	0,94	520,20	188
19,00	20	129	77	53	50	0,95	520,20	190
19,50	20	129	77	53	50	0,98	520,20	195
19,80	20	129	77	53	50	0,99	520,20	198
20,00	20	129	77	53	50	1,00	520,20	200

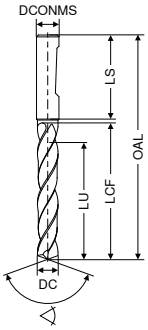
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
Hardened materials	○

→ v_c Page 114

WTX – High Performance Drill, DIN 6537

≤ 5xD





UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HB	HE	HA	HA	HE
	140°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	NEW T4	T4	T4
	Article no. 11 783 ...	Article no. 11 784 ...	Article no. 11 782 ...	Article no. 10 730 ...	Article no. 10 740 ...	Article no. 10 741 ...

DC m7	DCONMS h6	OAL	LCF	LU	LS												
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
3,00	6	66	28	23	36	47,39	03000	47,39	03000	47,39	03000	64,37	03000	48,93	030	48,93	030
3,10	6	66	28	23	36	47,39	03100	47,39	03100	47,39	03100	64,37	03100	48,93	031	48,93	031
3,15	6	66	28	23	36	47,39	03150	47,39	03150	47,39	03150						
3,20	6	66	28	23	36	47,39	03200	47,39	03200	47,39	03200	64,37	03200	48,93	032	48,93	032
3,22	6	66	28	23	36	47,39	03220	47,39	03220	47,39	03220						
3,25	6	66	28	23	36	47,39	03250	47,39	03250	47,39	03250						
3,30	6	66	28	23	36	47,39	03300	47,39	03300	47,39	03300	64,37	03300	48,93	033	48,93	033
3,40	6	66	28	23	36	47,39	03400	47,39	03400	47,39	03400	64,37	03400	48,93	034	48,93	034
3,50	6	66	28	23	36	47,39	03500	47,39	03500	47,39	03500	64,37	03500	48,93	035	48,93	035
3,60	6	66	28	23	36	47,39	03600	47,39	03600	47,39	03600	64,37	03600	48,93	036	48,93	036
3,70	6	66	28	23	36	47,39	03700	47,39	03700	47,39	03700	64,37	03700	48,93	037	48,93	037
3,80	6	74	36	29	36	47,39	03800	47,39	03800	47,39	03800	64,37	03800	48,93	038	48,93	038
3,85	6	74	36	29	36	47,39	03850	47,39	03850	47,39	03850						
3,90	6	74	36	29	36	47,39	03900	47,39	03900	47,39	03900	64,37	03900	48,93	039	48,93	039
4,00	6	74	36	29	36	47,39	04000	47,39	04000	47,39	04000	64,37	04000	48,93	040	48,93	040
4,10	6	74	36	29	36	47,39	04100	47,39	04100	47,39	04100	64,37	04100	48,93	041	48,93	041
4,20	6	74	36	29	36	47,39	04200	47,39	04200	47,39	04200	64,37	04200	48,93	042	48,93	042
4,25	6	74	36	29	36	47,39	04250	47,39	04250	47,39	04250						
4,30	6	74	36	29	36	47,39	04300	47,39	04300	47,39	04300	64,37	04300	48,93	043	48,93	043
4,35	6	74	36	29	36	47,39	04350	47,39	04350	47,39	04350						
4,40	6	74	36	29	36	47,39	04400	47,39	04400	47,39	04400	64,37	04400	48,93	044	48,93	044
4,45	6	74	36	29	36	47,39	04450	47,39	04450	47,39	04450						
4,50	6	74	36	29	36	47,39	04500	47,39	04500	47,39	04500	64,37	04500	48,93	045	48,93	045
4,60	6	74	36	29	36	47,39	04600	47,39	04600	47,39	04600	64,37	04600	48,93	046	48,93	046
4,65	6	74	36	29	36	47,39	04650	47,39	04650	47,39	04650						
4,70	6	74	36	29	36	47,39	04700	47,39	04700	47,39	04700	64,37	04700	48,93	047	48,93	047
4,80	6	82	44	35	36	47,39	04800	47,39	04800	47,39	04800	64,37	04800	48,93	048	48,93	048
4,90	6	82	44	35	36	47,39	04900	47,39	04900	47,39	04900	64,37	04900	48,93	049	48,93	049
4,95	6	82	44	35	36	47,39	04950	47,39	04950	47,39	04950						
5,00	6	82	44	35	36	47,39	05000	47,39	05000	47,39	05000	64,37	05000	48,93	050	48,93	050
5,05	6	82	44	35	36	47,39	05050	47,39	05050	47,39	05050						
5,10	6	82	44	35	36	47,39	05100	47,39	05100	47,39	05100	64,37	05100	48,93	051	48,93	051
5,20	6	82	44	35	36	47,39	05200	47,39	05200	47,39	05200	64,37	05200	48,93	052	48,93	052
5,30	6	82	44	35	36	47,39	05300	47,39	05300	47,39	05300	64,37	05300	48,93	053	48,93	053
5,40	6	82	44	35	36	47,39	05400	47,39	05400	47,39	05400	64,37	05400	48,93	054	48,93	054
5,50	6	82	44	35	36	47,39	05500	47,39	05500	47,39	05500	64,37	05500	48,93	055	48,93	055
5,55	6	82	44	35	36	47,39	05550	47,39	05550	47,39	05550						
5,60	6	82	44	35	36	47,39	05600	47,39	05600	47,39	05600	64,37	05600	48,93	056	48,93	056
5,70	6	82	44	35	36	47,39	05700	47,39	05700	47,39	05700	64,37	05700	48,93	057	48,93	057
5,75	6	82	44	35	36	47,39	05750	47,39	05750	47,39	05750						
5,80	6	82	44	35	36	47,39	05800	47,39	05800	47,39	05800	64,37	05800	48,93	058	48,93	058
5,90	6	82	44	35	36	47,39	05900	47,39	05900	47,39	05900	64,37	05900	48,93	059	48,93	059
5,95	6	82	44	35	36	47,39	05950	47,39	05950	47,39	05950						
6,00	6	82	44	35	36	47,39	06000	47,39	06000	47,39	06000	64,37	06000	48,93	060	48,93	060

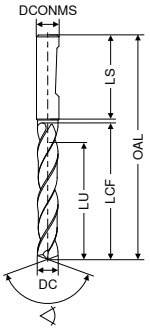
Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

→ v_c Page 101–104

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD



UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



HA	HB	HE	HA	HA	HE
140°	140°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
T7	T7	T7	NEW T4	T4	T4

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 783 ...		Article no. 11 784 ...		Article no. 11 782 ...		Article no. 10 730 ...		Article no. 10 740 ...		Article no. 10 741 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
6,10	8	91	53	43	36	50,48	06100	50,48	06100	50,48	06100	77,37	06100	58,85	061	58,85	061
6,20	8	91	53	43	36	50,48	06200	50,48	06200	50,48	06200	77,37	06200	58,85	062	58,85	062
6,30	8	91	53	43	36	50,48	06300	50,48	06300	50,48	06300	77,37	06300	58,85	063	58,85	063
6,40	8	91	53	43	36	50,48	06400	50,48	06400	50,48	06400	77,37	06400	58,85	064	58,85	064
6,50	8	91	53	43	36	50,48	06500	50,48	06500	50,48	06500	77,37	06500	58,85	065	58,85	065
6,60	8	91	53	43	36	50,48	06600	50,48	06600	50,48	06600	77,37	06600	58,85	066	58,85	066
6,70	8	91	53	43	36	50,48	06700	50,48	06700	50,48	06700	77,37	06700	58,85	067	58,85	067
6,80	8	91	53	43	36	50,48	06800	50,48	06800	50,48	06800	77,37	06800	58,85	068	58,85	068
6,90	8	91	53	43	36	50,48	06900	50,48	06900	50,48	06900	77,37	06900	58,85	069	58,85	069
7,00	8	91	53	43	36	50,48	07000	50,48	07000	50,48	07000	77,37	07000	58,85	070	58,85	070
7,10	8	91	53	43	36	50,48	07100	50,48	07100	50,48	07100	77,37	07100	58,85	071	58,85	071
7,20	8	91	53	43	36	50,48	07200	50,48	07200	50,48	07200	77,37	07200	58,85	072	58,85	072
7,30	8	91	53	43	36	50,48	07300	50,48	07300	50,48	07300	77,37	07300	58,85	073	58,85	073
7,40	8	91	53	43	36	50,48	07400	50,48	07400	50,48	07400	77,37	07400	58,85	074	58,85	074
7,45	8	91	53	43	36	50,48	07450	50,48	07450	50,48	07450						
7,50	8	91	53	43	36	50,48	07500	50,48	07500	50,48	07500	77,37	07500	58,85	075	58,85	075
7,60	8	91	53	43	36	50,48	07600	50,48	07600	50,48	07600	77,37	07600	58,85	076	58,85	076
7,70	8	91	53	43	36	50,48	07700	50,48	07700	50,48	07700	77,37	07700	58,85	077	58,85	077
7,80	8	91	53	43	36	50,48	07800	50,48	07800	50,48	07800	77,37	07800	58,85	078	58,85	078
7,90	8	91	53	43	36	50,48	07900	50,48	07900	50,48	07900	77,37	07900	58,85	079	58,85	079
8,00	8	91	53	43	36	50,48	08000	50,48	08000	50,48	08000	77,37	08000	58,85	080	58,85	080
8,10	10	103	61	49	40	55,66	08100	55,66	08100	55,66	08100	90,27	08100	70,54	081	70,54	081
8,20	10	103	61	49	40	55,66	08200	55,66	08200	55,66	08200	90,27	08200	70,54	082	70,54	082
8,30	10	103	61	49	40	55,66	08300	55,66	08300	55,66	08300	90,27	08300	70,54	083	70,54	083
8,40	10	103	61	49	40	55,66	08400	55,66	08400	55,66	08400	90,27	08400	70,54	084	70,54	084
8,50	10	103	61	49	40	55,66	08500	55,66	08500	55,66	08500	90,27	08500	70,54	085	70,54	085
8,60	10	103	61	49	40	55,66	08600	55,66	08600	55,66	08600	90,27	08600	70,54	086	70,54	086
8,70	10	103	61	49	40	55,66	08700	55,66	08700	55,66	08700	90,27	08700	70,54	087	70,54	087
8,80	10	103	61	49	40	55,66	08800	55,66	08800	55,66	08800	90,27	08800	70,54	088	70,54	088
8,90	10	103	61	49	40	55,66	08900	55,66	08900	55,66	08900	90,27	08900	70,54	089	70,54	089
9,00	10	103	61	49	40	55,66	09000	55,66	09000	55,66	09000	90,27	09000	70,54	090	70,54	090
9,10	10	103	61	49	40	55,66	09100	55,66	09100	55,66	09100	90,27	09100	70,54	091	70,54	091
9,20	10	103	61	49	40	55,66	09200	55,66	09200	55,66	09200	90,27	09200	70,54	092	70,54	092
9,30	10	103	61	49	40	55,66	09300	55,66	09300	55,66	09300	90,27	09300	70,54	093	70,54	093
9,35	10	103	61	49	40	55,66	09350	55,66	09350	55,66	09350						
9,40	10	103	61	49	40	55,66	09400	55,66	09400	55,66	09400	90,27	09400	70,54	094	70,54	094
9,45	10	103	61	49	40	55,66	09450	55,66	09450	55,66	09450						
9,50	10	103	61	49	40	55,66	09500	55,66	09500	55,66	09500	90,27	09500	70,54	095	70,54	095
9,60	10	103	61	49	40	55,66	09600	55,66	09600	55,66	09600	90,27	09600	70,54	096	70,54	096
9,70	10	103	61	49	40	55,66	09700	55,66	09700	55,66	09700	90,27	09700	70,54	097	70,54	097
9,80	10	103	61	49	40	55,66	09800	55,66	09800	55,66	09800	90,27	09800	70,54	098	70,54	098
9,90	10	103	61	49	40	55,66	09900	55,66	09900	55,66	09900	90,27	09900	70,54	099	70,54	099
10,00	10	103	61	49	40	55,66	10000	55,66	10000	55,66	10000	90,27	10000	70,54	100	70,54	100
10,10	12	118	71	56	45	81,12	10100	81,12	10100	81,12	10100	129,00	10100	101,40	101	101,40	101

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

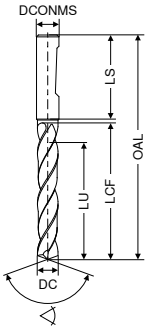
→ v_c Page 101–104

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD





UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HB	HE	HA	HA	HE
	140°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	NEW T4	T4	T4
	Article no. 11 783 ...	Article no. 11 784 ...	Article no. 11 782 ...	Article no. 10 730 ...	Article no. 10 740 ...	Article no. 10 741 ...

DC m7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
10,20	12	118	71	56	45	81,12	10200	81,12	10200	81,12	10200	129,00	10200	101,40	102	101,40	102
10,30	12	118	71	56	45	81,12	10300	81,12	10300	81,12	10300	129,00	10300	101,40	103	101,40	103
10,40	12	118	71	56	45	81,12	10400	81,12	10400	81,12	10400	129,00	10400	101,40	104	101,40	104
10,50	12	118	71	56	45	81,12	10500	81,12	10500	81,12	10500	129,00	10500	101,40	105	101,40	105
10,55	12	118	71	56	45	81,12	10550	81,12	10550	81,12	10550						
10,60	12	118	71	56	45	81,12	10600	81,12	10600	81,12	10600	129,00	10600	101,40	106	101,40	106
10,70	12	118	71	56	45	81,12	10700	81,12	10700	81,12	10700	129,00	10700	101,40	107	101,40	107
10,75	12	118	71	56	45	81,12	10750	81,12	10750	81,12	10750						
10,80	12	118	71	56	45	81,12	10800	81,12	10800	81,12	10800	129,00	10800	101,40	108	101,40	108
10,90	12	118	71	56	45	81,12	10900	81,12	10900	81,12	10900	129,00	10900	101,40	109	101,40	109
11,00	12	118	71	56	45	81,12	11000	81,12	11000	81,12	11000	129,00	11000	101,40	110	101,40	110
11,10	12	118	71	56	45	81,12	11100	81,12	11100	81,12	11100	129,00	11100	101,40	111	101,40	111
11,20	12	118	71	56	45	81,12	11200	81,12	11200	81,12	11200	129,00	11200	101,40	112	101,40	112
11,25	12	118	71	56	45	81,12	11250	81,12	11250	81,12	11250						
11,30	12	118	71	56	45	81,12	11300	81,12	11300	81,12	11300	129,00	11300	101,40	113	101,40	113
11,35	12	118	71	56	45	81,12	11350	81,12	11350	81,12	11350						
11,40	12	118	71	56	45	81,12	11400	81,12	11400	81,12	11400	129,00	11400	101,40	114	101,40	114
11,45	12	118	71	56	45	81,12	11450	81,12	11450	81,12	11450						
11,50	12	118	71	56	45	81,12	11500	81,12	11500	81,12	11500	129,00	11500	101,40	115	101,40	115
11,60	12	118	71	56	45	81,12	11600	81,12	11600	81,12	11600	129,00	11600	101,40	116	101,40	116
11,70	12	118	71	56	45	81,12	11700	81,12	11700	81,12	11700	129,00	11700	101,40	117	101,40	117
11,80	12	118	71	56	45	81,12	11800	81,12	11800	81,12	11800	129,00	11800	101,40	118	101,40	118
11,90	12	118	71	56	45	81,12	11900	81,12	11900	81,12	11900	129,00	11900	101,40	119	101,40	119
12,00	12	118	71	56	45	81,12	12000	81,12	12000	81,12	12000	129,00	12000	101,40	120	101,40	120
12,15	14	124	77	60	45	106,80	12150	106,80	12150	106,80	12150						
12,25	14	124	77	60	45	106,80	12250	106,80	12250	106,80	12250						
12,50	14	124	77	60	45	106,80	12500	106,80	12500	106,80	12500	173,10	12500	132,30	125	132,30	125
12,55	14	124	77	60	45	106,80	12550	106,80	12550	106,80	12550						
12,70	14	124	77	60	45	106,80	12700	106,80	12700	106,80	12700						
12,80	14	124	77	60	45	106,80	12800	106,80	12800	106,80	12800	173,10	12800	132,30	128	132,30	128
12,90	14	124	77	60	45	106,80	12900	106,80	12900	106,80	12900						
13,00	14	124	77	60	45	106,80	13000	106,80	13000	106,80	13000	173,10	13000	132,30	130	132,30	130
13,10	14	124	77	60	45	106,80	13100	106,80	13100	106,80	13100						
13,30	14	124	77	60	45	106,80	13300	106,80	13300	106,80	13300						
13,35	14	124	77	60	45	106,80	13350	106,80	13350	106,80	13350						
13,50	14	124	77	60	45	106,80	13500	106,80	13500	106,80	13500	173,10	13500	132,30	135	132,30	135
13,70	14	124	77	60	45	106,80	13700	106,80	13700	106,80	13700						
13,80	14	124	77	60	45	106,80	13800	106,80	13800	106,80	13800	173,10	13800	132,30	138	132,30	138
14,00	14	124	77	60	45	106,80	14000	106,80	14000	106,80	14000	173,10	14000	132,30	140	132,30	140
14,20	16	133	83	63	48	134,50	14200	134,50	14200	134,50	14200						
14,50	16	133	83	63	48	134,50	14500	134,50	14500	134,50	14500	237,00	14500	184,10	145	184,10	145
14,80	16	133	83	63	48	134,50	14800	134,50	14800	134,50	14800	237,00	14800	184,10	148	184,10	148
15,00	16	133	83	63	48	134,50	15000	134,50	15000	134,50	15000	237,00	15000	184,10	150	184,10	150
15,10	16	133	83	63	48	134,50	15100	134,50	15100	134,50	15100						

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

→ v_c Page 101–104

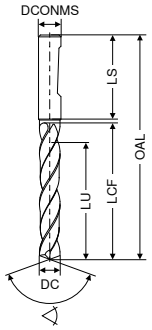
Continued on next page

WTX – High Performance Drill, DIN 6537

2

≤ 5xD





UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HB	HE	HA	HA	HE
	140°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	NEW T4	T4	T4
	Article no. 11 783 ...	Article no. 11 784 ...	Article no. 11 782 ...	Article no. 10 730 ...	Article no. 10 740 ...	Article no. 10 741 ...

DC m7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
15,25	16	133	83	63	48	134,50	15250	134,50	15250	134,50	15250						
15,30	16	133	83	63	48	134,50	15300	134,50	15300	134,50	15300						
15,35	16	133	83	63	48	134,50	15350	134,50	15350	134,50	15350						
15,50	16	133	83	63	48	134,50	15500	134,50	15500	134,50	15500	237,00	15500	184,10	155	184,10	155
15,60	16	133	83	63	48	134,50	15600	134,50	15600	134,50	15600						
15,80	16	133	83	63	48	134,50	15800	134,50	15800	134,50	15800	237,00	15800	184,10	158	184,10	158
16,00	16	133	83	63	48	134,50	16000	134,50	16000	134,50	16000	237,00	16000	184,10	160	184,10	160
16,05	18	143	93	71	48	201,80	16050	201,80	16050	201,80	16050						
16,50	18	143	93	71	48	201,80	16500	201,80	16500	201,80	16500	343,80	16500	265,60	165	265,60	165
16,80	18	143	93	71	48	201,80	16800	201,80	16800	201,80	16800	343,80	16800	265,60	168	265,60	168
16,90	18	143	93	71	48	201,80	16900	201,80	16900	201,80	16900						
17,00	18	143	93	71	48	201,80	17000	201,80	17000	201,80	17000	343,80	17000	265,60	170	265,60	170
17,50	18	143	93	71	48	201,80	17500	201,80	17500	201,80	17500	343,80	17500	265,60	175	265,60	175
17,60	18	143	93	71	48	201,80	17600	201,80	17600	201,80	17600						
17,80	18	143	93	71	48	201,80	17800	201,80	17800	201,80	17800	343,80	17800	265,60	178	265,60	178
18,00	18	143	93	71	48	201,80	18000	201,80	18000	201,80	18000	343,80	18000	265,60	180	265,60	180
18,50	20	153	101	77	50	257,90	18500	257,90	18500	257,90	18500	418,80	18500	327,30	185	327,30	185
18,80	20	153	101	77	50	257,90	18800	257,90	18800	257,90	18800	418,80	18800	327,30	188	327,30	188
18,90	20	153	101	77	50	257,90	18900	257,90	18900	257,90	18900						
19,00	20	153	101	77	50	257,90	19000	257,90	19000	257,90	19000	418,80	19000	327,30	190	327,30	190
19,35	20	153	101	77	50	257,90	19350	257,90	19350	257,90	19350						
19,50	20	153	101	77	50	257,90	19500	257,90	19500	257,90	19500	418,80	19500	327,30	195	327,30	195
19,60	20	153	101	77	50	257,90	19600	257,90	19600	257,90	19600						
19,80	20	153	101	77	50	257,90	19800	257,90	19800	257,90	19800	418,80	19800	327,30	198	327,30	198
20,00	20	153	101	77	50	257,90	20000	257,90	20000	257,90	20000	418,80	20000	327,30	200	327,30	200

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

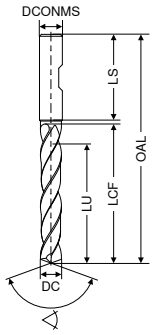
→ v_c Page 101–104

WPC – High Performance Drill, DIN 6537

≤ 5xD

UNI

TiAlN





HA

140°

Solid carbide

UNI

TiAlN



HB

140°

Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	T1 Article no. 11 606 ...		T1 Article no. 11 607 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR	
3,00	6	66	28	23	36	27,66	030	27,66	030
3,10	6	66	28	23	36	27,66	031	27,66	031
3,20	6	66	28	23	36	27,66	032	27,66	032
3,30	6	66	28	23	36	27,66	033	27,66	033
3,40	6	66	28	23	36	27,66	034	27,66	034
3,50	6	66	28	23	36	27,66	035	27,66	035
3,60	6	66	28	23	36	27,66	036	27,66	036
3,70	6	66	28	23	36	27,66	037	27,66	037
3,80	6	74	36	29	36	27,66	038	27,66	038
3,90	6	74	36	29	36	27,66	039	27,66	039
4,00	6	74	36	29	36	27,66	040	27,66	040
4,10	6	74	36	29	36	27,66	041	27,66	041
4,20	6	74	36	29	36	27,66	042	27,66	042
4,30	6	74	36	29	36	27,66	043	27,66	043
4,40	6	74	36	29	36	27,66	044	27,66	044
4,50	6	74	36	29	36	27,66	045	27,66	045
4,60	6	74	36	29	36	27,66	046	27,66	046
4,65	6	74	36	29	36	27,66	900	27,66	900
4,70	6	74	36	29	36	27,66	047	27,66	047
4,80	6	82	44	35	36	27,66	048	27,66	048
4,90	6	82	44	35	36	27,66	049	27,66	049
5,00	6	82	44	35	36	27,66	050	27,66	050
5,10	6	82	44	35	36	27,66	051	27,66	051
5,20	6	82	44	35	36	27,66	052	27,66	052
5,30	6	82	44	35	36	27,66	053	27,66	053
5,40	6	82	44	35	36	27,66	054	27,66	054
5,50	6	82	44	35	36	27,66	055	27,66	055
5,55	6	82	44	35	36	27,66	902	27,66	902
5,60	6	82	44	35	36	27,66	056	27,66	056
5,70	6	82	44	35	36	27,66	057	27,66	057
5,80	6	82	44	35	36	27,66	058	27,66	058
5,90	6	82	44	35	36	27,66	059	27,66	059
6,00	6	82	44	35	36	27,66	060	27,66	060
6,10	8	91	53	43	36	28,10	061	28,10	061
6,20	8	91	53	43	36	28,10	062	28,10	062
6,30	8	91	53	43	36	28,10	063	28,10	063
6,40	8	91	53	43	36	28,10	064	28,10	064
6,50	8	91	53	43	36	28,10	065	28,10	065
6,60	8	91	53	43	36	28,10	066	28,10	066
6,70	8	91	53	43	36	28,10	067	28,10	067
6,80	8	91	53	43	36	28,10	068	28,10	068
6,90	8	91	53	43	36	28,10	069	28,10	069
7,00	8	91	53	43	36	28,10	070	28,10	070
7,10	8	91	53	43	36	28,10	071	28,10	071
7,20	8	91	53	43	36	28,10	072	28,10	072
7,30	8	91	53	43	36	28,10	073	28,10	073
7,40	8	91	53	43	36	28,10	074	28,10	074
7,50	8	91	53	43	36	28,10	075	28,10	075
7,55	8	91	53	43	36	28,10	975	28,10	975
7,60	8	91	53	43	36	28,10	076	28,10	076
7,70	8	91	53	43	36	28,10	077	28,10	077
7,80	8	91	53	43	36	28,10	078	28,10	078
7,90	8	91	53	43	36	28,10	079	28,10	079
8,00	8	91	53	43	36	28,10	080	28,10	080
8,10	10	103	61	49	40	30,97	081	30,97	081
8,20	10	103	61	49	40	30,97	082	30,97	082
8,30	10	103	61	49	40	30,97	083	30,97	083
8,40	10	103	61	49	40	30,97	084	30,97	084
8,50	10	103	61	49	40	30,97	085	30,97	085
8,60	10	103	61	49	40	30,97	086	30,97	086
8,70	10	103	61	49	40	30,97	087	30,97	087
8,80	10	103	61	49	40	30,97	088	30,97	088
8,90	10	103	61	49	40	30,97	089	30,97	089
9,00	10	103	61	49	40	30,97	090	30,97	090
9,10	10	103	61	49	40	30,97	091	30,97	091
9,20	10	103	61	49	40	30,97	092	30,97	092
9,25	10	103	61	49	40	30,97	925	30,97	925
9,30	10	103	61	49	40	30,97	093	30,97	093
9,40	10	103	61	49	40	30,97	094	30,97	094
9,50	10	103	61	49	40	30,97	095	30,97	095
9,60	10	103	61	49	40	30,97	096	30,97	096
9,70	10	103	61	49	40	30,97	097	30,97	097
9,80	10	103	61	49	40	30,97	098	30,97	098
9,90	10	103	61	49	40	30,97	099	30,97	099
10,00	10	103	61	49	40	30,97	100	30,97	100
10,10	12	118	71	56	45	46,29	101	46,29	101
10,20	12	118	71	56	45	46,29	102	46,29	102
10,30	12	118	71	56	45	46,29	103	46,29	103
10,40	12	118	71	56	45	46,29	104	46,29	104
10,50	12	118	71	56	45	46,29	105	46,29	105
10,60	12	118	71	56	45	46,29	106	46,29	106
10,70	12	118	71	56	45	46,29	107	46,29	107
10,80	12	118	71	56	45	46,29	108	46,29	108
10,90	12	118	71	56	45	46,29	109	46,29	109
11,00	12	118	71	56	45	46,29	110	46,29	110
11,10	12	118	71	56	45	46,29	111	46,29	111
11,20	12	118	71	56	45	46,29	112	46,29	112
11,30	12	118	71	56	45	46,29	113	46,29	113
11,40	12	118	71	56	45	46,29	114	46,29	114
11,50	12	118	71	56	45	46,29	115	46,29	115
11,60	12	118	71	56	45	46,29	116	46,29	116
11,70	12	118	71	56	45	46,29	117	46,29	117
11,80	12	118	71	56	45	46,29	118	46,29	118
11,90	12	118	71	56	45	46,29	119	46,29	119
12,00	12	118	71	56	45	46,29	120	46,29	120
12,25	14	124	77	60	45	60,74	122	60,74	122
12,50	14	124	77	60	45	60,74	125	60,74	125
12,70	14	124	77	60	45	60,74	127	60,74	127
12,80	14	124	77	60	45	60,74	128	60,74	128
12,90	14	124	77	60	45	60,74	129	60,74	129
13,00	14	124	77	60	45	60,74	130	60,74	130
13,30	14	124	77	60	45	60,74	133	60,74	133
13,50	14	124	77	60	45	60,74	135	60,74	135
13,70	14	124	77	60	45	60,74	137	60,74	137
13,80	14	124	77	60	45	60,74	138	60,74	138
14,00	14	124	77	60	45	60,74	140	60,74	140
14,20	16	133	83	63	48	79,02	142	79,02	142
14,50	16	133	83	63	48	79,02	145	79,02	145
14,70	16	133	83	63	48	79,02	147	79,02	147
14,80	16	133	83	63	48	79,02	148	79,02	148
15,00	16	133	83	63	48	79,02	150	79,02	150
15,25	16	133	83	63	48	79,02	152	79,02	152
15,30	16	133	83	63	48	79,02	153	79,02	153
15,50	16	133	83	63	48	79,02	155	79,02	155
15,70	16	133	83	63	48	79,02	157	79,02	157
15,80	16	133	83	63	48	79,02	158	79,02	158
16,00	16	133	83	63	48	79,02	160	79,02	160
16,50	18	143	93	71	48	127,80	165	127,80	165
16,80	18	143	93	71	48	127,80	168	127,80	168
17,00	18	143	93	71	48	127,80	170	127,80	170
17,50	18	143	93	71	48	127,80	175	127,80	175
17,80	18	143	93	71	48	127,80	178	127,80	178
18,00	18	143	93	71	48	127,80	180	127,80	180
18,50	20	153	101	77	50	137,80	185	137,80	185
18,80	20	153	101	77	50	137,80	188	137,80	188
19,00	20	153	101	77	50	137,80	190	137,80	190
19,50	20	153	101	77	50	137,80	195	137,80	195
19,80	20	153	101	77	50	137,80	198	137,80	198
20,00	20	153	101	77	50	137,80	200	137,80	200

Steel	●	●
Stainless steel		
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys		

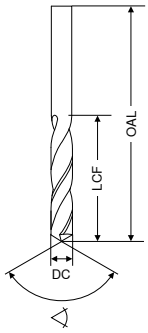
→ v_c Page 117

Twist drill similar to DIN 338

- Rake angle 30°
- Shank Ø h7

≤ 5xD

N





118°
Solid carbide

DC h7	OAL	LCF	T3 Article no. 10 710 ...	
mm	mm	mm	EUR	
0,5	22	6	5,78	005
0,6	24	7	5,78	006
0,7	28	9	5,78	007
0,8	30	10	5,78	008
0,9	32	11	5,78	009
1,0	34	12	5,78	010
1,1	36	14	6,64	011
1,2	38	16	6,64	012
1,3	38	16	6,64	013
1,4	40	18	6,64	014
1,5	40	18	6,64	015
1,6	43	20	6,64	016
1,7	43	20	6,64	017
1,8	46	22	6,64	018
1,9	46	22	6,64	019
2,0	49	24	6,64	020
2,1	49	24	7,59	021
2,2	53	27	9,83	022
2,3	53	27	9,83	023
2,4	57	30	9,83	024
2,5	57	30	9,66	025
2,6	57	30	10,88	026
2,7	61	33	12,90	027
2,8	61	33	13,78	028
2,9	61	33	13,78	029
3,0	61	33	12,45	030
3,1	65	36	12,56	031
3,2	65	36	12,56	032
3,3	65	36	12,68	033
3,4	70	39	14,10	034
3,5	70	39	13,88	035
3,6	70	39	14,88	036
3,7	70	39	14,88	037
3,8	75	43	15,65	038
3,9	75	43	15,65	039
4,0	75	43	15,54	040
4,1	75	43	14,33	041
4,2	75	43	14,33	042
4,3	80	47	21,28	043
4,4	80	47	21,28	044
4,5	80	47	19,40	045
4,6	80	47	22,05	046
4,7	80	47	22,05	047
4,8	86	52	22,81	048
4,9	86	52	22,81	049
5,0	86	52	21,15	050
5,1	86	52	25,46	051
5,2	86	52	25,46	052
5,3	86	52	28,98	053
5,4	93	57	28,98	054
5,5	93	57	27,78	055
5,6	93	57	30,41	056
5,7	93	57	30,41	057
5,8	93	57	30,41	058
5,9	93	57	30,41	059
6,0	93	57	29,54	060
6,1	101	63	37,80	061
6,2	101	63	37,80	062
6,3	101	63	37,80	063
6,4	101	63	37,80	064
6,5	101	63	36,59	065
6,6	109	69	44,19	066
6,8	109	69	44,19	068
7,0	109	69	43,75	070
7,5	109	69	46,51	075
7,8	117	75	51,91	078
8,0	117	75	51,91	080
8,5	117	75	60,94	085
8,8	125	81	65,24	088
9,0	125	81	65,24	090
9,5	125	81	72,30	095
9,8	133	87	76,26	098
10,0	133	87	76,26	100
10,2	133	87	92,91	102
10,5	133	87	92,91	105
11,0	142	94	115,80	110
11,5	142	94	123,50	115
12,0	151	101	132,30	120
13,0	151	101	170,90	130
14,0	160	108	184,10	140
16,0	178	120	250,20	160

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	○

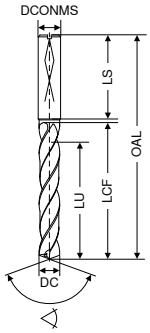
→ v_c Page 119

WTX – High Performance Drill, DIN 6537

≤ 5xD

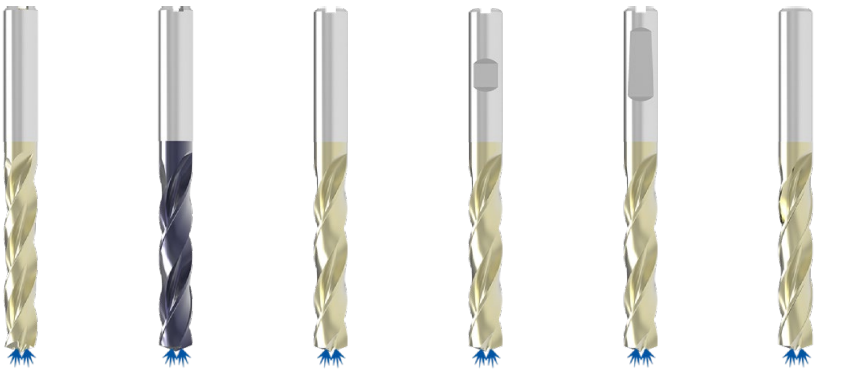






Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR	EUR	EUR	EUR	EUR	EUR
mm	mm	mm	mm	mm	mm						
3,00	6	66	28	23	36		84,31 03000	70,31 03000	70,31 03000	70,31 03000	83,21 03000
3,10	6	66	28	23	36		84,31 03100	70,31 03100	70,31 03100	70,31 03100	83,21 03100
3,15	6	66	28	23	36			70,31 03150	70,31 03150	70,31 03150	
3,20	6	66	28	23	36		84,31 03200	70,31 03200	70,31 03200	70,31 03200	83,21 03200
3,22	6	66	28	23	36			70,31 03220	70,31 03220	70,31 03220	
3,25	6	66	28	23	36			70,31 03250	70,31 03250	70,31 03250	
3,30	6	66	28	23	36		84,31 03300	70,31 03300	70,31 03300	70,31 03300	83,21 03300
3,40	6	66	28	23	36		84,31 03400	70,31 03400	70,31 03400	70,31 03400	83,21 03400
3,50	6	66	28	23	36		84,31 03500	70,31 03500	70,31 03500	70,31 03500	83,21 03500
3,60	6	66	28	23	36		84,31 03600	70,31 03600	70,31 03600	70,31 03600	83,21 03600
3,70	6	66	28	23	36		84,31 03700	70,31 03700	70,31 03700	70,31 03700	83,21 03700
3,80	6	74	36	29	36		84,31 03800	70,31 03800	70,31 03800	70,31 03800	83,21 03800
3,85	6	74	36	29	36			70,31 03850	70,31 03850	70,31 03850	
3,90	6	74	36	29	36		84,31 03900	70,31 03900	70,31 03900	70,31 03900	83,21 03900
4,00	6	74	36	29	36	88,28 04000	84,31 04000	70,31 04000	70,31 04000	70,31 04000	83,21 04000
4,10	6	74	36	29	36	88,28 04100	84,31 04100	70,31 04100	70,31 04100	70,31 04100	83,21 04100
4,20	6	74	36	29	36	88,28 04200	84,31 04200	70,31 04200	70,31 04200	70,31 04200	83,21 04200
4,25	6	74	36	29	36			70,31 04250	70,31 04250	70,31 04250	
4,30	6	74	36	29	36	88,28 04300	84,31 04300	70,31 04300	70,31 04300	70,31 04300	83,21 04300
4,35	6	74	36	29	36			70,31 04350	70,31 04350	70,31 04350	
4,40	6	74	36	29	36	88,28 04400	84,31 04400	70,31 04400	70,31 04400	70,31 04400	83,21 04400
4,45	6	74	36	29	36			70,31 04450	70,31 04450	70,31 04450	
4,50	6	74	36	29	36	88,28 04500	84,31 04500	70,31 04500	70,31 04500	70,31 04500	83,21 04500
4,60	6	74	36	29	36	88,28 04600	84,31 04600	70,31 04600	70,31 04600	70,31 04600	83,21 04600
4,65	6	74	36	29	36		84,31 04650	70,31 04650	70,31 04650	70,31 04650	
4,70	6	74	36	29	36	88,28 04700	84,31 04700	70,31 04700	70,31 04700	70,31 04700	83,21 04700
4,80	6	82	44	35	36	88,28 04800	84,31 04800	70,31 04800	70,31 04800	70,31 04800	83,21 04800
4,90	6	82	44	35	36	88,28 04900	84,31 04900	70,31 04900	70,31 04900	70,31 04900	83,21 04900
4,95	6	82	44	35	36			70,31 04950	70,31 04950	70,31 04950	
5,00	6	82	44	35	36	88,28 05000	84,31 05000	70,31 05000	70,31 05000	70,31 05000	83,21 05000
5,05	6	82	44	35	36			70,31 05050	70,31 05050	70,31 05050	
5,10	6	82	44	35	36	88,28 05100	84,31 05100	70,31 05100	70,31 05100	70,31 05100	83,21 05100
5,20	6	82	44	35	36	88,28 05200	84,31 05200	70,31 05200	70,31 05200	70,31 05200	83,21 05200
5,30	6	82	44	35	36	88,28 05300	84,31 05300	70,31 05300	70,31 05300	70,31 05300	83,21 05300
5,40	6	82	44	35	36	88,28 05400	84,31 05400	70,31 05400	70,31 05400	70,31 05400	83,21 05400
5,50	6	82	44	35	36	88,28 05500	84,31 05500	70,31 05500	70,31 05500	70,31 05500	83,21 05500

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

→ v_c Page 96–104

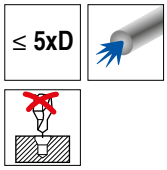
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

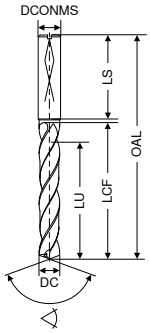
Continued on next page

WTX – High Performance Drill, DIN 6537

2

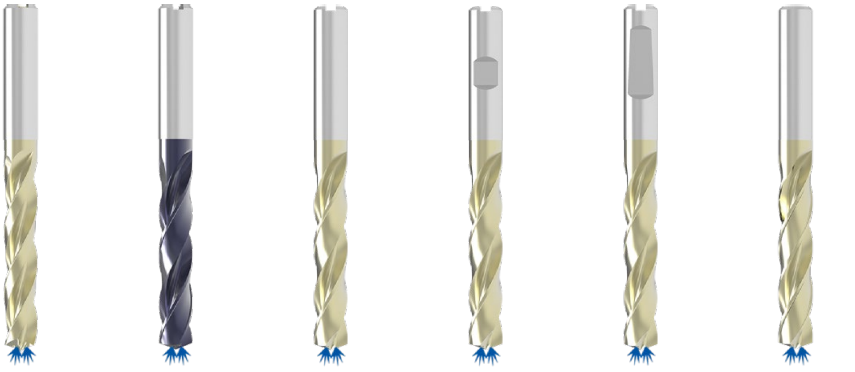
≤ 5xD





Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



	HA	HA	HA	HB	HE	HA
	140°	145°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	NEW T4	T7	T7	T7	NEW T4
	Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC $_{m7/h7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
5,55	6	82	44	35	36	88,28	05550	84,31	05550	70,31	05550	70,31	05550	70,31	05550		
5,60	6	82	44	35	36	88,28	05600	84,31	05600	70,31	05600	70,31	05600	70,31	05600	83,21	05600
5,70	6	82	44	35	36	88,28	05700	84,31	05700	70,31	05700	70,31	05700	70,31	05700	83,21	05700
5,75	6	82	44	35	36					70,31	05750	70,31	05750	70,31	05750		
5,80	6	82	44	35	36	88,28	05800	84,31	05800	70,31	05800	70,31	05800	70,31	05800	83,21	05800
5,90	6	82	44	35	36	88,28	05900	84,31	05900	70,31	05900	70,31	05900	70,31	05900	83,21	05900
5,95	6	82	44	35	36					70,31	05950	70,31	05950	70,31	05950		
6,00	6	82	44	35	36	88,28	06000	84,31	06000	70,31	06000	70,31	06000	70,31	06000	83,21	06000
6,10	8	91	53	43	36	99,63	06100	95,12	06100	79,35	06100	79,35	06100	79,35	06100	93,90	06100
6,20	8	91	53	43	36	99,63	06200	95,12	06200	79,35	06200	79,35	06200	79,35	06200	93,90	06200
6,30	8	91	53	43	36	99,63	06300	95,12	06300	79,35	06300	79,35	06300	79,35	06300	93,90	06300
6,40	8	91	53	43	36	99,63	06400	95,12	06400	79,35	06400	79,35	06400	79,35	06400	93,90	06400
6,50	8	91	53	43	36	99,63	06500	95,12	06500	79,35	06500	79,35	06500	79,35	06500	93,90	06500
6,60	8	91	53	43	36	99,63	06600	95,12	06600	79,35	06600	79,35	06600	79,35	06600	93,90	06600
6,70	8	91	53	43	36	99,63	06700	95,12	06700	79,35	06700	79,35	06700	79,35	06700	93,90	06700
6,80	8	91	53	43	36	99,63	06800	95,12	06800	79,35	06800	79,35	06800	79,35	06800	93,90	06800
6,90	8	91	53	43	36	99,63	06900	95,12	06900	79,35	06900	79,35	06900	79,35	06900	93,90	06900
7,00	8	91	53	43	36	99,63	07000	95,12	07000	79,35	07000	79,35	07000	79,35	07000	93,90	07000
7,10	8	91	53	43	36	99,63	07100	95,12	07100	79,35	07100	79,35	07100	79,35	07100	93,90	07100
7,20	8	91	53	43	36	99,63	07200	95,12	07200	79,35	07200	79,35	07200	79,35	07200	93,90	07200
7,30	8	91	53	43	36	99,63	07300	95,12	07300	79,35	07300	79,35	07300	79,35	07300	93,90	07300
7,40	8	91	53	43	36	99,63	07400	95,12	07400	79,35	07400	79,35	07400	79,35	07400	93,90	07400
7,45	8	91	53	43	36					79,35	07450	79,35	07450	79,35	07450		
7,50	8	91	53	43	36	99,63	07500	95,12	07500	79,35	07500	79,35	07500	79,35	07500	93,90	07500
7,60	8	91	53	43	36	99,63	07600	95,12	07600	79,35	07600	79,35	07600	79,35	07600	93,90	07600
7,70	8	91	53	43	36	99,63	07700	95,12	07700	79,35	07700	79,35	07700	79,35	07700	93,90	07700
7,80	8	91	53	43	36	99,63	07800	95,12	07800	79,35	07800	79,35	07800	79,35	07800	93,90	07800
7,90	8	91	53	43	36	99,63	07900	95,12	07900	79,35	07900	79,35	07900	79,35	07900	93,90	07900
8,00	8	91	53	43	36	99,63	08000	95,12	08000	79,35	08000	79,35	08000	79,35	08000	93,90	08000
8,10	10	103	61	49	40	132,30	08100	114,60	08100	91,48	08100	91,48	08100	91,48	08100	134,50	08100
8,20	10	103	61	49	40	132,30	08200	114,60	08200	91,48	08200	91,48	08200	91,48	08200	134,50	08200
8,30	10	103	61	49	40	132,30	08300	114,60	08300	91,48	08300	91,48	08300	91,48	08300	134,50	08300
8,40	10	103	61	49	40	132,30	08400	114,60	08400	91,48	08400	91,48	08400	91,48	08400	134,50	08400
8,50	10	103	61	49	40	132,30	08500	114,60	08500	91,48	08500	91,48	08500	91,48	08500	134,50	08500
8,60	10	103	61	49	40	132,30	08600	114,60	08600	91,48	08600	91,48	08600	91,48	08600	134,50	08600
8,70	10	103	61	49	40	132,30	08700	114,60	08700	91,48	08700	91,48	08700	91,48	08700	134,50	08700

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

→ v_c Page 96–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

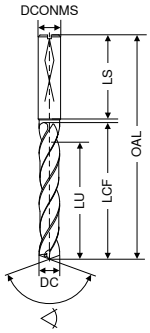
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD

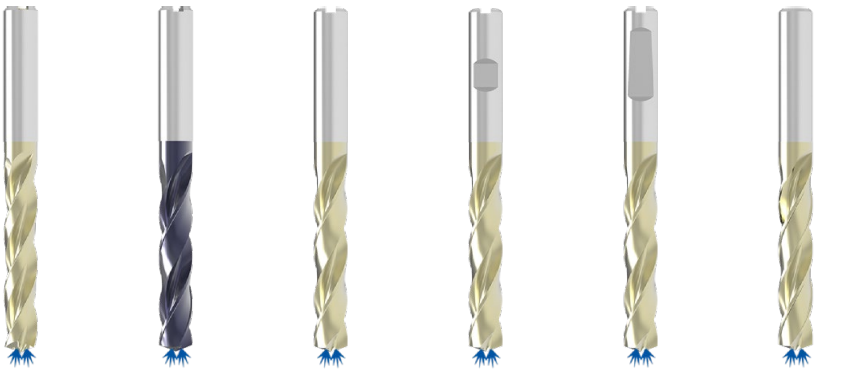






Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm										
8,80	10	103	61	49	40	132,30	08800	114,60	08800	91,48	08800	91,48	08800	91,48	08800	134,50	08800
8,90	10	103	61	49	40	132,30	08900	114,60	08900	91,48	08900	91,48	08900	91,48	08900	134,50	08900
9,00	10	103	61	49	40	132,30	09000	114,60	09000	91,48	09000	91,48	09000	91,48	09000	134,50	09000
9,10	10	103	61	49	40	132,30	09100	114,60	09100	91,48	09100	91,48	09100	91,48	09100	134,50	09100
9,20	10	103	61	49	40	132,30	09200	114,60	09200	91,48	09200	91,48	09200	91,48	09200	134,50	09200
9,30	10	103	61	49	40	132,30	09300	114,60	09300	91,48	09300	91,48	09300	91,48	09300	134,50	09300
9,35	10	103	61	49	40					91,48	09350	91,48	09350	91,48	09350		
9,40	10	103	61	49	40	132,30	09400	114,60	09400	91,48	09400	91,48	09400	91,48	09400	134,50	09400
9,45	10	103	61	49	40					91,48	09450	91,48	09450	91,48	09450		
9,50	10	103	61	49	40	132,30	09500	114,60	09500	91,48	09500	91,48	09500	91,48	09500	134,50	09500
9,60	10	103	61	49	40	132,30	09600	114,60	09600	91,48	09600	91,48	09600	91,48	09600	134,50	09600
9,70	10	103	61	49	40	132,30	09700	114,60	09700	91,48	09700	91,48	09700	91,48	09700	134,50	09700
9,80	10	103	61	49	40	132,30	09800	114,60	09800	91,48	09800	91,48	09800	91,48	09800	134,50	09800
9,90	10	103	61	49	40	132,30	09900	114,60	09900	91,48	09900	91,48	09900	91,48	09900	134,50	09900
10,00	10	103	61	49	40	132,30	10000	114,60	10000	91,48	10000	91,48	10000	91,48	10000	134,50	10000
10,10	12	118	71	56	45	187,30	10100	163,10	10100	130,00	10100	130,00	10100	130,00	10100	190,70	10100
10,20	12	118	71	56	45	187,30	10200	163,10	10200	130,00	10200	130,00	10200	130,00	10200	190,70	10200
10,30	12	118	71	56	45	187,30	10300	163,10	10300	130,00	10300	130,00	10300	130,00	10300	190,70	10300
10,40	12	118	71	56	45	187,30	10400	163,10	10400	130,00	10400	130,00	10400	130,00	10400	190,70	10400
10,50	12	118	71	56	45	187,30	10500	163,10	10500	130,00	10500	130,00	10500	130,00	10500	190,70	10500
10,55	12	118	71	56	45					130,00	10550	130,00	10550	130,00	10550		
10,60	12	118	71	56	45	187,30	10600	163,10	10600	130,00	10600	130,00	10600	130,00	10600	190,70	10600
10,70	12	118	71	56	45	187,30	10700	163,10	10700	130,00	10700	130,00	10700	130,00	10700	190,70	10700
10,75	12	118	71	56	45					130,00	10750	130,00	10750	130,00	10750		
10,80	12	118	71	56	45	187,30	10800	163,10	10800	130,00	10800	130,00	10800	130,00	10800	190,70	10800
10,90	12	118	71	56	45	187,30	10900	163,10	10900	130,00	10900	130,00	10900	130,00	10900	190,70	10900
11,00	12	118	71	56	45	187,30	11000	163,10	11000	130,00	11000	130,00	11000	130,00	11000	190,70	11000
11,10	12	118	71	56	45	187,30	11100	163,10	11100	130,00	11100	130,00	11100	130,00	11100	190,70	11100
11,20	12	118	71	56	45	187,30	11200	163,10	11200	130,00	11200	130,00	11200	130,00	11200	190,70	11200
11,25	12	118	71	56	45					130,00	11250	130,00	11250	130,00	11250		
11,30	12	118	71	56	45	187,30	11300	163,10	11300	130,00	11300	130,00	11300	130,00	11300	190,70	11300
11,35	12	118	71	56	45					130,00	11350	130,00	11350	130,00	11350		
11,40	12	118	71	56	45	187,30	11400	163,10	11400	130,00	11400	130,00	11400	130,00	11400	190,70	11400
11,45	12	118	71	56	45					130,00	11450	130,00	11450	130,00	11450		
11,50	12	118	71	56	45	187,30	11500	163,10	11500	130,00	11500	130,00	11500	130,00	11500	190,70	11500
11,60	12	118	71	56	45	187,30	11600	163,10	11600	130,00	11600	130,00	11600	130,00	11600	190,70	11600

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

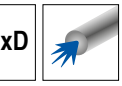
→ v_c Page 96–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

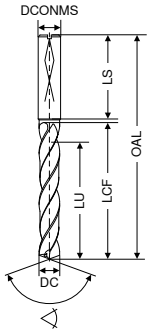
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD

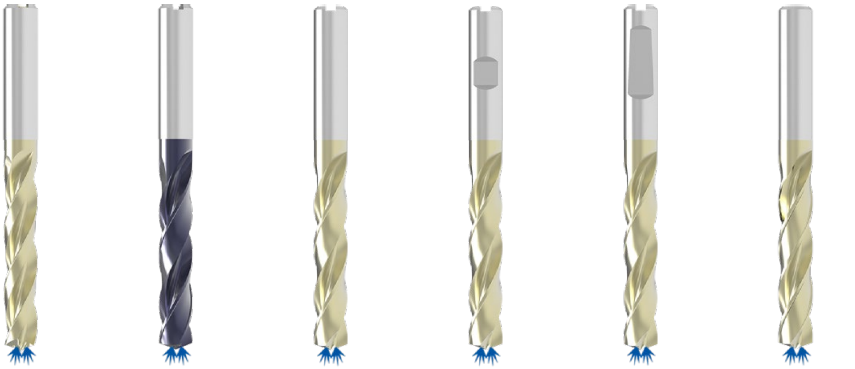






Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm										
11,70	12	118	71	56	45	187,30	11700	163,10	11700	130,00	11700	130,00	11700	190,70	11700
11,80	12	118	71	56	45	187,30	11800	163,10	11800	130,00	11800	130,00	11800	190,70	11800
11,90	12	118	71	56	45	187,30	11900	163,10	11900	130,00	11900	130,00	11900	190,70	11900
12,00	12	118	71	56	45	187,30	12000	163,10	12000	130,00	12000	130,00	12000	190,70	12000
12,15	14	124	77	60	45					176,30	12150	176,30	12150	176,30	12150
12,20	14	124	77	60	45			219,30	12200						
12,25	14	124	77	60	45					176,30	12250	176,30	12250	176,30	12250
12,50	14	124	77	60	45	252,40	12500	219,30	12500	176,30	12500	176,30	12500	176,30	12500
12,55	14	124	77	60	45					176,30	12550	176,30	12550	176,30	12550
12,70	14	124	77	60	45					176,30	12700	176,30	12700	176,30	12700
12,80	14	124	77	60	45	252,40	12800	219,30	12800	176,30	12800	176,30	12800	176,30	12800
12,90	14	124	77	60	45					176,30	12900	176,30	12900	176,30	12900
13,00	14	124	77	60	45	252,40	13000	219,30	13000	176,30	13000	176,30	13000	176,30	13000
13,10	14	124	77	60	45					176,30	13100	176,30	13100	176,30	13100
13,30	14	124	77	60	45					176,30	13300	176,30	13300	176,30	13300
13,35	14	124	77	60	45					176,30	13350	176,30	13350	176,30	13350
13,50	14	124	77	60	45	252,40	13500	219,30	13500	176,30	13500	176,30	13500	176,30	13500
13,70	14	124	77	60	45					176,30	13700	176,30	13700	176,30	13700
13,80	14	124	77	60	45	252,40	13800	219,30	13800	176,30	13800	176,30	13800	176,30	13800
14,00	14	124	77	60	45	252,40	14000	219,30	14000	176,30	14000	176,30	14000	176,30	14000
14,20	16	133	83	63	48			266,80	14200	213,80	14200	213,80	14200	213,80	14200
14,50	16	133	83	63	48	304,20	14500	266,80	14500	213,80	14500	213,80	14500	213,80	14500
14,80	16	133	83	63	48	304,20	14800	266,80	14800	213,80	14800	213,80	14800	213,80	14800
15,00	16	133	83	63	48	304,20	15000	266,80	15000	213,80	15000	213,80	15000	213,80	15000
15,10	16	133	83	63	48					213,80	15100	213,80	15100	213,80	15100
15,20	16	133	83	63	48			266,80	15200						
15,25	16	133	83	63	48					213,80	15250	213,80	15250	213,80	15250
15,30	16	133	83	63	48					213,80	15300	213,80	15300	213,80	15300
15,35	16	133	83	63	48					213,80	15350	213,80	15350	213,80	15350
15,50	16	133	83	63	48	304,20	15500	266,80	15500	213,80	15500	213,80	15500	213,80	15500
15,60	16	133	83	63	48					213,80	15600	213,80	15600	213,80	15600
15,80	16	133	83	63	48	304,20	15800	266,80	15800	213,80	15800	213,80	15800	213,80	15800
16,00	16	133	83	63	48	304,20	16000	266,80	16000	213,80	16000	213,80	16000	213,80	16000
16,05	18	143	93	71	48					287,70	16050	287,70	16050	287,70	16050
16,50	18	143	93	71	48	399,10	16500	359,30	16500	287,70	16500	287,70	16500	425,40	16500
16,80	18	143	93	71	48	399,10	16800	359,30	16800	287,70	16800	287,70	16800	425,40	16800

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

→ v_c Page 96–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

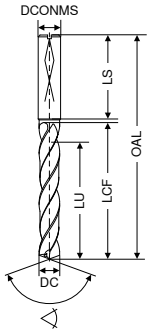
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD

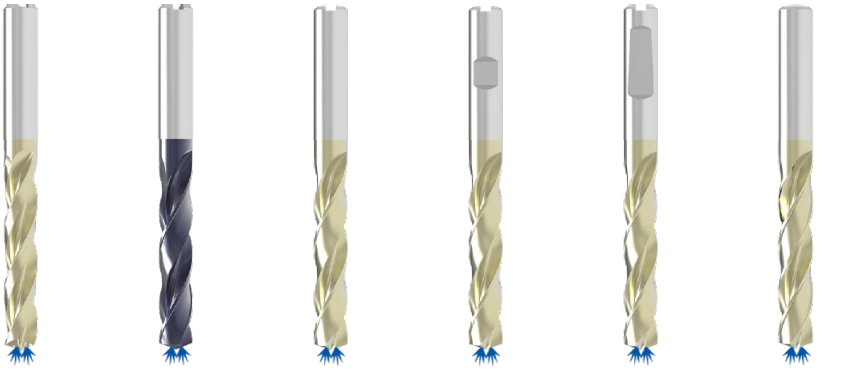






Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS												
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
16,90	18	143	93	71	48					287,70	16900	287,70	16900	287,70	16900		
17,00	18	143	93	71	48	399,10	17000	359,30	17000	287,70	17000	287,70	17000	287,70	17000	425,40	17000
17,50	18	143	93	71	48	399,10	17500	359,30	17500	287,70	17500	287,70	17500	287,70	17500	425,40	17500
17,60	18	143	93	71	48					287,70	17600	287,70	17600	287,70	17600		
17,80	18	143	93	71	48	399,10	17800	359,30	17800	287,70	17800	287,70	17800	287,70	17800	425,40	17800
18,00	18	143	93	71	48	399,10	18000	359,30	18000	287,70	18000	287,70	18000	287,70	18000	425,40	18000
18,50	20	153	101	77	50	469,60	18500	422,10	18500	338,30	18500	338,30	18500	338,30	18500	553,30	18500
18,80	20	153	101	77	50	469,60	18800	422,10	18800	338,30	18800	338,30	18800	338,30	18800	553,30	18800
18,90	20	153	101	77	50					338,30	18900	338,30	18900	338,30	18900		
19,00	20	153	101	77	50	469,60	19000	422,10	19000	338,30	19000	338,30	19000	338,30	19000	553,30	19000
19,35	20	153	101	77	50					338,30	19350	338,30	19350	338,30	19350		
19,50	20	153	101	77	50	469,60	19500	422,10	19500	338,30	19500	338,30	19500	338,30	19500	553,30	19500
19,60	20	153	101	77	50					338,30	19600	338,30	19600	338,30	19600		
19,80	20	153	101	77	50	469,60	19800	422,10	19800	338,30	19800	338,30	19800	338,30	19800	553,30	19800
20,00	20	153	101	77	50	469,60	20000	422,10	20000	338,30	20000	338,30	20000	338,30	20000	553,30	20000
20,50	25	200	135	110	56					698,80	20500	698,80	20500	698,80	20500		
21,00	25	200	135	110	56					698,80	21000	698,80	21000	698,80	21000		
21,50	25	200	135	110	56					698,80	21500	698,80	21500	698,80	21500		
22,00	25	200	135	110	56					698,80	22000	698,80	22000	698,80	22000		
22,50	25	200	140	120	56					698,80	22500	698,80	22500	698,80	22500		
23,00	25	200	140	120	56					698,80	23000	698,80	23000	698,80	23000		
23,50	25	200	140	120	56					698,80	23500	698,80	23500	698,80	23500		
24,00	25	200	140	120	56					698,80	24000	698,80	24000	698,80	24000		
24,50	25	200	140	120	56					698,80	24500	698,80	24500	698,80	24500		
25,00	25	200	140	120	56					698,80	25000	698,80	25000	698,80	25000		

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

→ v_c Page 96–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

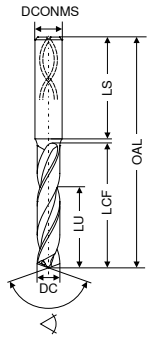
WTX – High-performance drill, DIN 6537

≤ 5xD





Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted



HA 135° Solid carbide T4 | HA 140° Solid carbide T4 | HE 140° Solid carbide T4 | HA 130° Solid carbide T4 | HA 135° Solid carbide NEW T4 | HA 140° Solid carbide T4

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
2,50	4	57	21	17	28									74,94	02500		
2,60	4	57	21	17	28									74,94	02600		
2,70	4	57	21	17	28									74,94	02700		
2,80	4	57	21	17	28									74,94	02800		
2,90	4	57	21	17	28									74,94	02900		
3,00	6	66	28	23	36	88,62	030	70,54	030	70,54	030	84,65	030	74,94	03000	70,87	030
3,10	6	66	28	23	36	88,62	031	70,54	031	70,54	031	84,65	031	74,94	03100	70,87	031
3,15	6	66	28	23	36			70,54	831								
3,20	6	66	28	23	36	88,62	032	70,54	032	70,54	032	84,65	032	74,94	03200	70,87	032
3,22	6	66	28	23	36			70,54	832								
3,25	6	66	28	23	36			70,54	890								
3,30	6	66	28	23	36	88,62	033	70,54	033	70,54	033	84,65	033	74,94	03300	70,87	033
3,40	6	66	28	23	36	88,62	034	70,54	034	70,54	034	84,65	034	74,94	03400	70,87	034
3,50	6	66	28	23	36	88,62	035	70,54	035	70,54	035	84,65	035	74,94	03500	70,87	035
3,60	6	66	28	23	36	88,62	036	70,54	036	70,54	036	84,65	036	74,94	03600	70,87	036
3,70	6	66	28	23	36	88,62	037	70,54	037	70,54	037	84,65	037	74,94	03700	70,87	037
3,80	6	74	36	29	36	88,62	038	70,54	038	70,54	038	84,65	038	73,94	03800	70,87	038
3,85	6	74	36	29	36			70,54	838								
3,90	6	74	36	29	36	88,62	039	70,54	039	70,54	039	84,65	039	73,94	03900	70,87	039
3,97	6	74	36	29	36											70,87	900
4,00	6	74	36	29	36	88,62	040	70,54	040	70,54	040	84,65	040	73,94	04000	70,87	040
4,10	6	74	36	29	36	88,62	041	70,54	041	70,54	041	84,65	041	73,94	04100	70,87	041
4,20	6	74	36	29	36	88,62	042	70,54	042	70,54	042	84,65	042	73,94	04200	70,87	042
4,23	6	74	36	29	36											70,87	901
4,30	6	74	36	29	36	88,62	043	70,54	043	70,54	043	84,65	043	73,94	04300	70,87	043
4,35	6	74	36	29	36			70,54	843								
4,40	6	74	36	29	36	88,62	044	70,54	044	70,54	044	84,65	044	73,94	04400	70,87	044
4,45	6	74	36	29	36			70,54	844								
4,50	6	74	36	29	36	88,62	045	70,54	045	70,54	045	84,65	045	73,94	04500	70,87	045
4,60	6	74	36	29	36	88,62	046	70,54	046	70,54	046	84,65	046	73,94	04600	70,87	046
4,65	6	74	36	29	36	88,62	900	70,54	900								
4,70	6	74	36	29	36	88,62	047	70,54	047	70,54	047	84,65	047	73,94	04700	70,87	047
4,80	6	82	44	35	36	88,62	048	70,54	048	70,54	048	84,65	048	72,63	04800	70,87	048
4,90	6	82	44	35	36	88,62	049	70,54	049	70,54	049	84,65	049	72,63	04900	70,87	049
5,00	6	82	44	35	36	88,62	050	70,54	050	70,54	050	84,65	050	72,63	05000	70,87	050
5,10	6	82	44	35	36	88,62	051	70,54	051	70,54	051	84,65	051	72,63	05100	70,87	051
5,20	6	82	44	35	36	88,62	052	70,54	052	70,54	052	84,65	052	72,63	05200	70,87	052
5,30	6	82	44	35	36	88,62	053	70,54	053	70,54	053	84,65	053	72,63	05300	70,87	053
5,40	6	82	44	35	36	88,62	054	70,54	054	70,54	054	84,65	054	72,63	05400	70,87	054
5,50	6	82	44	35	36	88,62	055	70,54	055	70,54	055	84,65	055	72,63	05500	70,87	055
5,55	6	82	44	35	36	88,62	902										

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

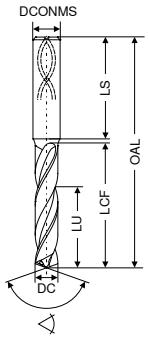
Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted



	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
	Article no. 10 773 ...	Article no. 10 745 ...	Article no. 10 746 ...	Article no. 10 749 ...	Article no. 10 791 ...	Article no. 10 787 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
5,56	6	82	44	35	36											70,87	902
5,60	6	82	44	35	36	88,62	056	70,54	056	70,54	056	84,65	056	72,63	05600	70,87	056
5,70	6	82	44	35	36	88,62	057	70,54	057	70,54	057	84,65	057	72,63	05700	70,87	057
5,75	6	82	44	35	36			70,54	916								
5,80	6	82	44	35	36	88,62	058	70,54	058	70,54	058	84,65	058	72,63	05800	70,87	058
5,90	6	82	44	35	36	88,62	059	70,54	059	70,54	059	84,65	059	72,63	05900	70,87	059
5,95	6	82	44	35	36			70,54	959								
6,00	6	82	44	35	36	88,62	060	70,54	060	70,54	060	84,65	060	72,63	06000	70,87	060
6,10	8	91	53	43	36	100,20	061	76,94	061	76,94	061	93,25	061	81,12	06100	79,02	061
6,20	8	91	53	43	36	100,20	062	76,94	062	76,94	062	93,25	062	81,12	06200	79,02	062
6,30	8	91	53	43	36	100,20	063	76,94	063	76,94	063	93,25	063	81,12	06300	79,02	063
6,35	8	91	53	43	36											79,02	903
6,40	8	91	53	43	36	100,20	064	76,94	064	76,94	064	93,25	064	81,12	06400	79,02	064
6,50	8	91	53	43	36	100,20	065	76,94	065	76,94	065	93,25	065	81,12	06500	79,02	065
6,60	8	91	53	43	36	100,20	066	76,94	066	76,94	066	93,25	066	81,12	06600	79,02	066
6,70	8	91	53	43	36	100,20	067	76,94	067	76,94	067	93,25	067	81,12	06700	79,02	067
6,80	8	91	53	43	36	100,20	068	76,94	068	76,94	068	93,25	068	81,12	06800	79,02	068
6,90	8	91	53	43	36	100,20	069	76,94	069	76,94	069	93,25	069	81,12	06900	79,02	069
7,00	8	91	53	43	36	100,20	070	76,94	070	76,94	070	93,25	070	81,12	07000	79,02	070
7,10	8	91	53	43	36	100,20	071	76,94	071	76,94	071	93,25	071	81,12	07100	79,02	071
7,20	8	91	53	43	36	100,20	072	76,94	072	76,94	072	93,25	072	81,12	07200	79,02	072
7,30	8	91	53	43	36	100,20	073	76,94	073	76,94	073	93,25	073	81,12	07300	79,02	073
7,40	8	91	53	43	36	100,20	074	76,94	074	76,94	074	93,25	074	81,12	07400	79,02	074
7,45	8	91	53	43	36			76,94	924								
7,50	8	91	53	43	36	100,20	075	76,94	075	76,94	075	93,25	075	81,12	07500	79,02	075
7,60	8	91	53	43	36	100,20	076	76,94	076	76,94	076	93,25	076	81,12	07600	79,02	076
7,70	8	91	53	43	36	100,20	077	76,94	077	76,94	077	93,25	077	81,12	07700	79,02	077
7,80	8	91	53	43	36	100,20	078	76,94	078	76,94	078	93,25	078	81,12	07800	79,02	078
7,90	8	91	53	43	36	100,20	079	76,94	079	76,94	079	93,25	079	81,12	07900	79,02	079
7,94	8	91	53	43	36											79,02	904
8,00	8	91	53	43	36	100,20	080	76,94	080	76,94	080	93,25	080	81,12	08000	79,02	080
8,10	10	103	61	49	40	125,70	081	109,30	081	109,30	081	134,50	081	94,90	08100	92,58	081
8,20	10	103	61	49	40	125,70	082	109,30	082	109,30	082	134,50	082	94,90	08200	92,58	082
8,30	10	103	61	49	40	125,70	083	109,30	083	109,30	083	134,50	083	94,90	08300	92,58	083
8,40	10	103	61	49	40	125,70	084	109,30	084	109,30	084	134,50	084	94,90	08400	92,58	084
8,50	10	103	61	49	40	125,70	085	109,30	085	109,30	085	134,50	085	94,90	08500	92,58	085
8,60	10	103	61	49	40	125,70	086	109,30	086	109,30	086	134,50	086	94,90	08600	92,58	086
8,70	10	103	61	49	40	125,70	087	109,30	087	109,30	087	134,50	087	94,90	08700	92,58	087
8,80	10	103	61	49	40	125,70	088	109,30	088	109,30	088	134,50	088	94,90	08800	92,58	088
8,90	10	103	61	49	40	125,70	089	109,30	089	109,30	089	134,50	089	94,90	08900	92,58	089
9,00	10	103	61	49	40	125,70	090	109,30	090	109,30	090	134,50	090	94,90	09000	92,58	090

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

Continued on next page

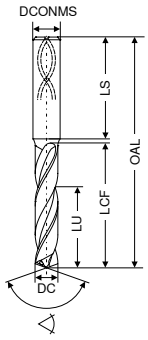
WTX – High-performance drill, DIN 6537

≤ 5xD





Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted













HA | HA | HE | HA | HA | HA

135° Solid carbide | 140° Solid carbide | 140° Solid carbide | 130° Solid carbide | 135° Solid carbide | 140° Solid carbide

T4 | T4 | T4 | T4 | NEW T4 | T4

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
9,10	10	103	61	49	40	125,70	091	109,30	091	109,30	091	134,50	091	94,90	09100	92,58	091
9,20	10	103	61	49	40	125,70	092	109,30	092	109,30	092	134,50	092	94,90	09200	92,58	092
9,30	10	103	61	49	40	125,70	093	109,30	093	109,30	093	134,50	093	94,90	09300	92,58	093
9,35	10	103	61	49	40			109,30	930								
9,40	10	103	61	49	40	125,70	094	109,30	094	109,30	094	134,50	094	94,90	09400	92,58	094
9,45	10	103	61	49	40			109,30	994								
9,50	10	103	61	49	40	125,70	095	109,30	095	109,30	095	134,50	095	94,90	09500	92,58	095
9,53	10	103	61	49	40											92,58	905
9,60	10	103	61	49	40	125,70	096	109,30	096	109,30	096	134,50	096	94,90	09600	92,58	096
9,70	10	103	61	49	40	125,70	097	109,30	097	109,30	097	134,50	097	94,90	09700	92,58	097
9,80	10	103	61	49	40	125,70	098	109,30	098	109,30	098	134,50	098	94,90	09800	92,58	098
9,90	10	103	61	49	40	125,70	099	109,30	099	109,30	099	134,50	099	94,90	09900	92,58	099
10,00	10	103	61	49	40	125,70	100	109,30	100	109,30	100	134,50	100	94,90	10000	92,58	100
10,10	12	118	71	54	45											129,00	101
10,10	12	118	71	56	45	179,60	101	155,50	101	155,50	101	185,20	101	132,30	10100		
10,20	12	118	71	54	45											129,00	102
10,20	12	118	71	56	45	179,60	102	155,50	102	155,50	102	185,20	102	132,30	10200		
10,30	12	118	71	54	45											129,00	103
10,30	12	118	71	56	45	179,60	103	155,50	103	155,50	103	185,20	103	132,30	10300		
10,40	12	118	71	54	45											129,00	104
10,40	12	118	71	56	45	179,60	104	155,50	104	155,50	104	185,20	104	132,30	10400		
10,50	12	118	71	56	45	179,60	105	155,50	105	155,50	105	185,20	105	132,30	10500		
10,50	12	118	71	54	45											129,00	105
10,55	12	118	71	56	45			155,50	932								
10,60	12	118	71	56	45	179,60	106	155,50	106	155,50	106	185,20	106	132,30	10600		
10,60	12	118	71	54	45											129,00	106
10,70	12	118	71	54	45											129,00	107
10,70	12	118	71	56	45	179,60	107	155,50	107	155,50	107	185,20	107	132,30	10700		
10,80	12	118	71	54	45											129,00	108
10,80	12	118	71	56	45	179,60	108	155,50	108	155,50	108	185,20	108	132,30	10800		
10,90	12	118	71	54	45											129,00	109
10,90	12	118	71	56	45	179,60	109	155,50	109	155,50	109	185,20	109				
11,00	12	118	71	54	45											129,00	110
11,00	12	118	71	56	45	179,60	110	155,50	110	155,50	110	185,20	110	132,30	11000		
11,10	12	118	71	56	45	179,60	111	155,50	111	155,50	111	185,20	111	132,30	11100		
11,10	12	118	71	54	45											129,00	111
11,11	12	118	71	54	45											129,00	906
11,20	12	118	71	56	45	179,60	112	155,50	112	155,50	112	185,20	112	132,30	11200		
11,20	12	118	71	54	45											129,00	112
11,25	12	118	71	56	45			155,50	912								
11,30	12	118	71	56	45	179,60	113	155,50	113	155,50	113	185,20	113	132,30	11300		

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

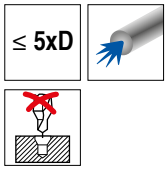
→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

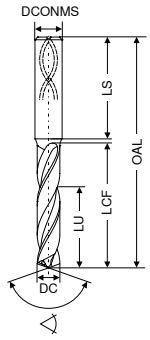
Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD



Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted



	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
11,30	12	118	71	54	45											129,00	113
11,35	12	118	71	56	45			155,50	913								
11,40	12	118	71	54	45											129,00	114
11,40	12	118	71	56	45	179,60	114	155,50	114	155,50	114	185,20	114	132,30	11400		
11,45	12	118	71	56	45			155,50	914								
11,50	12	118	71	56	45	179,60	115	155,50	115	155,50	115	185,20	115	132,30	11500		
11,50	12	118	71	54	45											129,00	115
11,60	12	118	71	54	45											129,00	116
11,60	12	118	71	56	45	179,60	116	155,50	116	155,50	116	185,20	116				
11,70	12	118	71	54	45											129,00	117
11,70	12	118	71	56	45	179,60	117	155,50	117	155,50	117	185,20	117	132,30	11700		
11,80	12	118	71	54	45											129,00	118
11,80	12	118	71	56	45	179,60	118	155,50	118	155,50	118	185,20	118	132,30	11800		
11,90	12	118	71	54	45											129,00	119
11,90	12	118	71	56	45	179,60	119	155,50	119	155,50	119	185,20	119				
12,00	12	118	71	54	45											129,00	120
12,00	12	118	71	56	45	179,60	120	155,50	120	155,50	120	185,20	120	132,30	12000		
12,10	14	124	77	58	45											180,80	121
12,15	14	124	77	60	45			213,80	921								
12,20	14	124	77	58	45											180,80	122
12,20	14	124	77	60	45									184,10	12200		
12,30	14	124	77	58	45											180,80	123
12,40	14	124	77	58	45											180,80	124
12,50	14	124	77	58	45											180,80	125
12,50	14	124	77	60	45	239,10	125	213,80	125	213,80	125	251,30	125	184,10	12500		
12,55	14	124	77	60	45			213,80	925								
12,60	14	124	77	58	45											180,80	126
12,60	14	124	77	60	45									184,10	12600		
12,70	14	124	77	58	45											180,80	907
12,80	14	124	77	58	45											180,80	128
12,80	14	124	77	60	45	239,10	128	213,80	128	213,80	128	251,30	128	184,10	12800		
12,90	14	124	77	58	45											180,80	129
13,00	14	124	77	58	45											180,80	130
13,00	14	124	77	60	45	239,10	130	213,80	130	213,80	130	251,30	130	184,10	13000		
13,10	14	124	77	58	45											180,80	131
13,20	14	124	77	58	45											180,80	132
13,30	14	124	77	58	45											180,80	133
13,35	14	124	77	60	45			213,80	933								
13,40	14	124	77	58	45											180,80	134
13,50	14	124	77	60	45	239,10	135	213,80	135	213,80	135	251,30	135	184,10	13500		
13,50	14	124	77	58	45											180,80	135

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

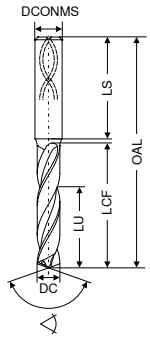
Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD







Type GG = Straight Fluted

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
DC m7/h7	Article no. 10 773 ...	Article no. 10 745 ...	Article no. 10 746 ...	Article no. 10 749 ...	Article no. 10 791 ...	Article no. 10 787 ...
mm	EUR	EUR	EUR	EUR	EUR	EUR

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	10 773 ... EUR		10 745 ... EUR		10 746 ... EUR		10 749 ... EUR		10 791 ... EUR		10 787 ... EUR	
mm	mm	mm	mm	mm	mm												
13,60	14	124	77	58	45											180,80	136
13,70	14	124	77	58	45											180,80	137
13,80	14	124	77	58	45											180,80	138
13,80	14	124	77	60	45	239,10	138	213,80	138	213,80	138	251,30	138	184,10	13800		
13,90	14	124	77	58	45											180,80	139
14,00	14	124	77	60	45	239,10	140	213,80	140	213,80	140	251,30	140	184,10	14000		
14,00	14	124	77	58	45											180,80	140
14,10	16	133	83	61	48											220,50	141
14,20	16	133	83	61	48											220,50	142
14,20	16	133	83	63	48									224,90	14200		
14,30	16	133	83	61	48											220,50	143
14,40	16	133	83	61	48											220,50	144
14,50	16	133	83	61	48											220,50	145
14,50	16	133	83	63	48	291,00	145	266,80	145	266,80	145	307,50	145	224,90	14500		
14,60	16	133	83	61	48											220,50	146
14,70	16	133	83	61	48											220,50	147
14,80	16	133	83	61	48											220,50	148
14,80	16	133	83	63	48	291,00	148	266,80	148	266,80	148	307,50	148	224,90	14800		
14,90	16	133	83	61	48											220,50	149
15,00	16	133	83	61	48											220,50	150
15,00	16	133	83	63	48	291,00	150	266,80	150	266,80	150	307,50	150	224,90	15000		
15,10	16	133	83	61	48											220,50	151
15,20	16	133	83	61	48											220,50	152
15,20	16	133	83	63	48									224,90	15200		
15,30	16	133	83	61	48											220,50	153
15,35	16	133	83	63	48			266,80	953								
15,40	16	133	83	61	48											220,50	154
15,50	16	133	83	61	48											220,50	155
15,50	16	133	83	63	48	291,00	155	266,80	155	266,80	155	307,50	155	224,90	15500		
15,60	16	133	83	61	48											220,50	156
15,70	16	133	83	61	48											220,50	157
15,80	16	133	83	61	48											220,50	158
15,80	16	133	83	63	48	291,00	158	266,80	158	266,80	158	307,50	158	224,90	15800		
15,90	16	133	83	61	48											220,50	159
16,00	16	133	83	61	48											220,50	160
16,00	16	133	83	63	48	291,00	160	266,80	160	266,80	160	307,50	160	224,90	16000		
16,05	18	143	93	71	48			350,50	960								
16,10	18	143	93	69	48											220,50	161
16,20	18	143	93	69	48											220,50	162
16,30	18	143	93	69	48											220,50	163
16,40	18	143	93	69	48											220,50	164

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

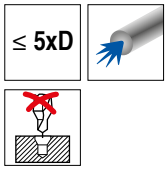
→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / **Ø DC_{h7}** for Type Speed VA and AL

Continued on next page

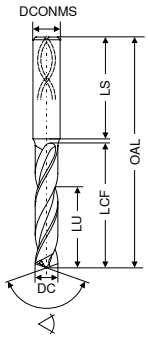
WTX – High-performance drill, DIN 6537

≤ 5xD



Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54

DRAGONSKIN



Type GG = Straight Fluted



	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
	Article no. 10 773 ...	Article no. 10 745 ...	Article no. 10 746 ...	Article no. 10 749 ...	Article no. 10 791 ...	Article no. 10 787 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS														
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR			
16,50	18	143	93	69	48											304,20	165		
16,50	18	143	93	71	48	393,50	165	350,50	165	350,50	165	404,60	165	311,90	16500				
16,60	18	143	93	69	48											304,20	166		
16,70	18	143	93	69	48											304,20	167		
16,80	18	143	93	69	48											304,20	168		
16,80	18	143	93	71	48	393,50	168	350,50	168	350,50	168	404,60	168						
16,90	18	143	93	69	48											304,20	169		
17,00	18	143	93	71	48	393,50	170	350,50	170	350,50	170	404,60	170	311,90	17000				
17,00	18	143	93	69	48											304,20	170		
17,10	18	143	93	69	48											304,20	171		
17,20	18	143	93	69	48											304,20	172		
17,30	18	143	93	69	48											304,20	173		
17,40	18	143	93	69	48											304,20	174		
17,50	18	143	93	69	48											304,20	175		
17,50	18	143	93	71	48	393,50	175	350,50	175	350,50	175	404,60	175	311,90	17500				
17,60	18	143	93	69	48											304,20	176		
17,70	18	143	93	69	48											304,20	177		
17,80	18	143	93	69	48											304,20	178		
17,80	18	143	93	71	48	393,50	178	350,50	178	350,50	178	404,60	178						
17,90	18	143	93	69	48											304,20	179		
18,00	18	143	93	69	48											304,20	180		
18,00	18	143	93	71	48	393,50	180	350,50	180	350,50	180	404,60	180	311,90	18000				
18,10	20	153	101	75	50											376,90	181		
18,20	20	153	101	75	50											376,90	182		
18,30	20	153	101	75	50											376,90	183		
18,40	20	153	101	75	50											376,90	184		
18,50	20	153	101	75	50											376,90	185		
18,50	20	153	101	77	50	437,50	185	448,60	185	448,60	185	523,50	185	385,80	18500				
18,60	20	153	101	75	50											376,90	186		
18,70	20	153	101	75	50											376,90	187		
18,80	20	153	101	75	50											376,90	188		
18,80	20	153	101	77	50	437,50	188	448,60	188	448,60	188	523,50	188						
18,90	20	153	101	75	50											376,90	189		
19,00	20	153	101	75	50											376,90	190		
19,00	20	153	101	77	50	437,50	190	448,60	190	448,60	190	523,50	190	385,80	19000				
19,10	20	153	101	75	50											376,90	191		
19,20	20	153	101	75	50											376,90	192		
19,30	20	153	101	75	50											376,90	193		
19,35	20	153	101	77	50			448,60	993										
19,40	20	153	101	75	50											376,90	194		
19,50	20	153	101	77	50	437,50	195	448,60	195	448,60	195	523,50	195	385,80	19500				

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

Continued on next page

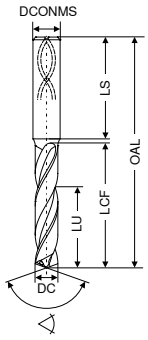
WTX – High-performance drill, DIN 6537

≤ 5xD





Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted



						HA		HA		HE		HA		HA		HA	
						135°		140°		140°		130°		135°		140°	
						Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide	
						T4		T4		T4		T4		NEW T4		T4	
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
19,50	20	153	101	75	50											376,90	**195**
19,60	20	153	101	75	50											376,90	**196**
19,70	20	153	101	75	50											376,90	**197**
19,80	20	153	101	77	50	437,50	**198**	448,60	**198**	448,60	**198**	523,50	**198**				
19,80	20	153	101	75	50											376,90	**198**
19,90	20	153	101	75	50											376,90	**199**
20,00	20	153	101	75	50											376,90	**200**
20,00	20	153	101	77	50	437,50	**200**	448,60	**200**	448,60	**200**	523,50	**200**	385,80	**20000**		

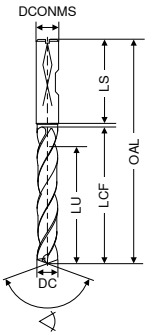
Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

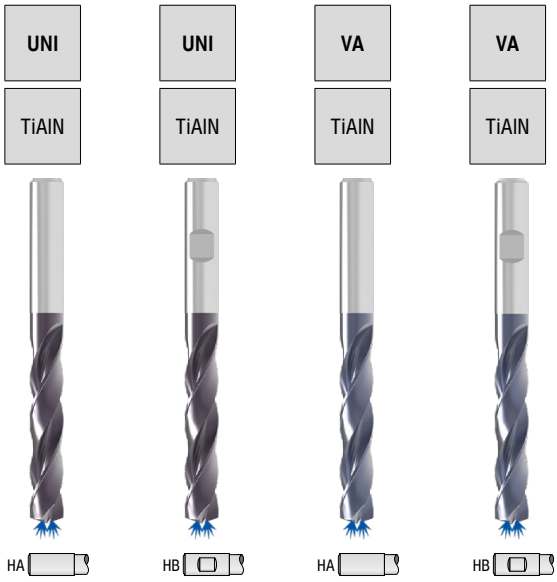
→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / **Ø DC_{h7}** for Type Speed VA and AL

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
1,00	4	45	8,0	6,5	30,0	41,88	010			41,88	010		
1,10	4	45	8,8	7,2	29,0	41,88	011			41,88	011		
1,20	4	45	9,6	7,8	29,0	41,88	012			41,88	012		
1,30	4	45	10,4	8,5	28,5	41,88	013			41,88	013		
1,40	4	45	11,2	9,1	28,0	41,88	014			41,88	014		
1,50	4	50	12,0	9,8	32,0	41,88	015			41,88	015		
1,60	4	50	12,8	10,4	31,0	41,88	016			41,88	016		
1,70	4	50	13,6	11,1	30,5	41,88	017			41,88	017		
1,80	4	50	14,4	11,7	30,0	41,88	018			41,88	018		
1,90	4	50	15,2	12,4	29,5	41,88	019			41,88	019		
2,00	4	50	16,0	13,0	29,0	41,88	020			41,88	020		
2,10	4	55	16,8	13,7	33,0	41,88	021			41,88	021		
2,20	4	55	17,6	14,3	32,5	41,88	022			41,88	022		
2,30	4	55	18,4	15,0	32,0	41,88	023			41,88	023		
2,40	4	55	19,2	15,6	31,5	41,88	024			41,88	024		
2,50	4	55	20,0	16,3	30,5	41,88	025			41,88	025		
2,60	4	55	20,8	16,9	30,0	41,88	026			41,88	026		
2,70	4	55	21,6	17,6	29,0	41,88	027			41,88	027		
2,80	4	55	22,4	18,2	29,0	41,88	028			41,88	028		
2,90	4	55	23,2	18,9	28,5	41,88	029			41,88	029		
3,00	6	66	28,0	23,0	36,0	41,22	030	41,22	030	41,22	030	41,22	030
3,10	6	66	28,0	23,0	36,0	41,22	031	41,22	031	41,22	031	41,22	031
3,20	6	66	28,0	23,0	36,0	41,22	032	41,22	032	41,22	032	41,22	032
3,25	6	66	28,0	23,0	36,0	41,22	890	41,22	890	39,52	03250		
3,30	6	66	28,0	23,0	36,0	41,22	033	41,22	033	41,22	033	41,22	033
3,40	6	66	28,0	23,0	36,0	41,22	034	41,22	034	41,22	034	41,22	034
3,50	6	66	28,0	23,0	36,0	41,22	035	41,22	035	41,22	035	41,22	035
3,60	6	66	28,0	23,0	36,0	41,22	036	41,22	036	41,22	036	41,22	036
3,70	6	66	28,0	23,0	36,0	41,22	037	41,22	037	41,22	037	41,22	037
3,80	6	74	36,0	29,0	36,0	41,22	038	41,22	038	41,22	038	41,22	038
3,90	6	74	36,0	29,0	36,0	41,22	039	41,22	039	41,22	039	41,22	039
4,00	6	74	36,0	29,0	36,0	41,22	040	41,22	040	41,22	040	41,22	040
4,10	6	74	36,0	29,0	36,0	41,22	041	41,22	041	41,22	041	41,22	041
4,20	6	74	36,0	29,0	36,0	41,22	042	41,22	042	41,22	042	41,22	042
4,30	6	74	36,0	29,0	36,0	41,22	043	41,22	043	41,22	043	41,22	043
4,40	6	74	36,0	29,0	36,0	41,22	044	41,22	044	41,22	044	41,22	044
4,50	6	74	36,0	29,0	36,0	41,22	045	41,22	045	41,22	045	41,22	045
4,60	6	74	36,0	29,0	36,0	41,22	046	41,22	046	41,22	046	41,22	046
4,65	6	74	36,0	29,0	36,0	41,22	900	41,22	900	41,22	900	41,22	900
4,70	6	74	36,0	29,0	36,0	41,22	047	41,22	047	41,22	047	41,22	047
4,80	6	82	44,0	35,0	36,0	41,22	048	41,22	048	41,22	048	41,22	048
4,90	6	82	44,0	35,0	36,0	41,22	049	41,22	049	41,22	049	41,22	049
5,00	6	82	44,0	35,0	36,0	41,22	050	41,22	050	41,22	050	41,22	050
5,10	6	82	44,0	35,0	36,0	41,22	051	41,22	051	41,22	051	41,22	051

Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

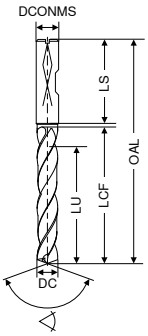
→ v_c Page 117+121

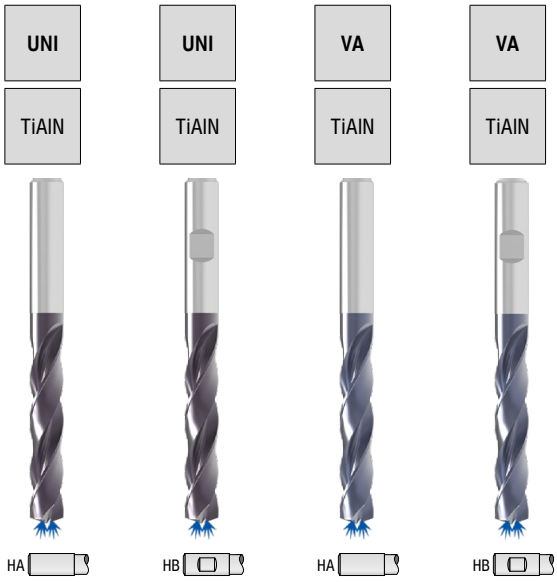
Continued on next page

WPC – High Performance Drill, DIN 6537

2

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
5,20	6	82	44,0	35,0	36,0	41,22	052	41,22	052	41,22	052	41,22	052
5,30	6	82	44,0	35,0	36,0	41,22	053	41,22	053	41,22	053	41,22	053
5,40	6	82	44,0	35,0	36,0	41,22	054	41,22	054	41,22	054	41,22	054
5,50	6	82	44,0	35,0	36,0	41,22	055	41,22	055	41,22	055	41,22	055
5,55	6	82	44,0	35,0	36,0	41,22	902	41,22	902	41,22	902	41,22	902
5,60	6	82	44,0	35,0	36,0	41,22	056	41,22	056	41,22	056	41,22	056
5,70	6	82	44,0	35,0	36,0	41,22	057	41,22	057	41,22	057	41,22	057
5,80	6	82	44,0	35,0	36,0	41,22	058	41,22	058	41,22	058	41,22	058
5,90	6	82	44,0	35,0	36,0	41,22	059	41,22	059	41,22	059	41,22	059
6,00	6	82	44,0	35,0	36,0	41,22	060	41,22	060	41,22	060	41,22	060
6,10	8	91	53,0	43,0	36,0	45,74	061	45,74	061	45,74	061	45,74	061
6,20	8	91	53,0	43,0	36,0	45,74	062	45,74	062	45,74	062	45,74	062
6,30	8	91	53,0	43,0	36,0	45,74	063	45,74	063	45,74	063	45,74	063
6,40	8	91	53,0	43,0	36,0	45,74	064	45,74	064	45,74	064	45,74	064
6,50	8	91	53,0	43,0	36,0	45,74	065	45,74	065	45,74	065	45,74	065
6,60	8	91	53,0	43,0	36,0	45,74	066	45,74	066	45,74	066	45,74	066
6,70	8	91	53,0	43,0	36,0	45,74	067	45,74	067	45,74	067	45,74	067
6,80	8	91	53,0	43,0	36,0	45,74	068	45,74	068	45,74	068	45,74	068
6,90	8	91	53,0	43,0	36,0	45,74	069	45,74	069	45,74	069	45,74	069
7,00	8	91	53,0	43,0	36,0	45,74	070	45,74	070	45,74	070	45,74	070
7,10	8	91	53,0	43,0	36,0	45,74	071	45,74	071	45,74	071	45,74	071
7,20	8	91	53,0	43,0	36,0	45,74	072	45,74	072	45,74	072	45,74	072
7,30	8	91	53,0	43,0	36,0	45,74	073	45,74	073	45,74	073	45,74	073
7,40	8	91	53,0	43,0	36,0	45,74	074	45,74	074	45,74	074	45,74	074
7,45	8	91	53,0	43,0	36,0	45,74	924	45,74	924	45,45	07450		
7,50	8	91	53,0	43,0	36,0	45,74	075	45,74	075	45,74	075	45,74	075
7,55	8	91	53,0	43,0	36,0	45,74	975	45,74	975	45,74	975	45,74	975
7,60	8	91	53,0	43,0	36,0	45,74	076	45,74	076	45,74	076	45,74	076
7,70	8	91	53,0	43,0	36,0	45,74	077	45,74	077	45,74	077	45,74	077
7,80	8	91	53,0	43,0	36,0	45,74	078	45,74	078	45,74	078	45,74	078
7,90	8	91	53,0	43,0	36,0	45,74	079	45,74	079	45,74	079	45,74	079
8,00	8	91	53,0	43,0	36,0	45,74	080	45,74	080	45,74	080	45,74	080
8,10	10	103	61,0	49,0	40,0	52,35	081	52,35	081	52,35	081	52,35	081
8,20	10	103	61,0	49,0	40,0	52,35	082	52,35	082	52,35	082	52,35	082
8,30	10	103	61,0	49,0	40,0	52,35	083	52,35	083	52,35	083	52,35	083
8,40	10	103	61,0	49,0	40,0	52,35	084	52,35	084	52,35	084	52,35	084
8,50	10	103	61,0	49,0	40,0	52,35	085	52,35	085	52,35	085	52,35	085
8,60	10	103	61,0	49,0	40,0	52,35	086	52,35	086	52,35	086	52,35	086
8,70	10	103	61,0	49,0	40,0	52,35	087	52,35	087	52,35	087	52,35	087
8,80	10	103	61,0	49,0	40,0	52,35	088	52,35	088	52,35	088	52,35	088
8,90	10	103	61,0	49,0	40,0	52,35	089	52,35	089	52,35	089	52,35	089
9,00	10	103	61,0	49,0	40,0	52,35	090	52,35	090	52,35	090	52,35	090
9,10	10	103	61,0	49,0	40,0	52,35	091	52,35	091	52,35	091	52,35	091
9,20	10	103	61,0	49,0	40,0	52,35	092	52,35	092	52,35	092	52,35	092

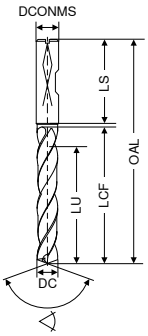
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

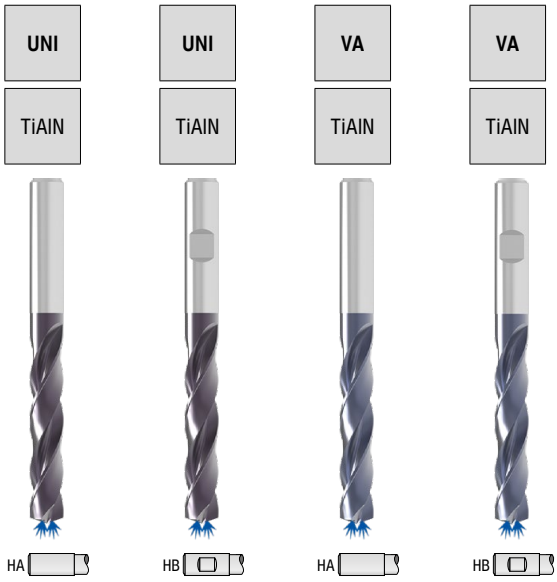
→ v_c Page 117+121

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
9,25	10	103	61,0	49,0	40,0	52,35	925	52,35	925	52,35	925	52,35	925
9,30	10	103	61,0	49,0	40,0	52,35	093	52,35	093	52,35	093	52,35	093
9,35	10	103	61,0	49,0	40,0	52,35	930	52,35	930	50,64	09350		
9,40	10	103	61,0	49,0	40,0	52,35	094	52,35	094	52,35	094	52,35	094
9,50	10	103	61,0	49,0	40,0	52,35	095	52,35	095	52,35	095	52,35	095
9,60	10	103	61,0	49,0	40,0	52,35	096	52,35	096	52,35	096	52,35	096
9,70	10	103	61,0	49,0	40,0	52,35	097	52,35	097	52,35	097	52,35	097
9,80	10	103	61,0	49,0	40,0	52,35	098	52,35	098	52,35	098	52,35	098
9,90	10	103	61,0	49,0	40,0	52,35	099	52,35	099	52,35	099	52,35	099
10,00	10	103	61,0	49,0	40,0	52,35	100	52,35	100	52,35	100	52,35	100
10,10	12	118	71,0	56,0	45,0	76,26	101	76,26	101	76,26	101	76,26	101
10,20	12	118	71,0	56,0	45,0	76,26	102	76,26	102	76,26	102	76,26	102
10,30	12	118	71,0	56,0	45,0	76,26	103	76,26	103	76,26	103	76,26	103
10,40	12	118	71,0	56,0	45,0	76,26	104	76,26	104	76,26	104	76,26	104
10,50	12	118	71,0	56,0	45,0	76,26	105	76,26	105	76,26	105	76,26	105
10,60	12	118	71,0	56,0	45,0	76,26	106	76,26	106	76,26	106	76,26	106
10,70	12	118	71,0	56,0	45,0	76,26	107	76,26	107	76,26	107	76,26	107
10,75	12	118	71,0	56,0	45,0	76,26	904	76,26	904	73,57	10750		
10,80	12	118	71,0	56,0	45,0	76,26	108	76,26	108	76,26	108	76,26	108
10,90	12	118	71,0	56,0	45,0	76,26	109	76,26	109	76,26	109	76,26	109
11,00	12	118	71,0	56,0	45,0	76,26	110	76,26	110	76,26	110	76,26	110
11,10	12	118	71,0	56,0	45,0	76,26	111	76,26	111	76,26	111	76,26	111
11,20	12	118	71,0	56,0	45,0	76,26	112	76,26	112	76,26	112	76,26	112
11,25	12	118	71,0	56,0	45,0	76,26	912	76,26	912	72,94	11250		
11,30	12	118	71,0	56,0	45,0	76,26	113	76,26	113	76,26	113	76,26	113
11,40	12	118	71,0	56,0	45,0	76,26	114	76,26	114	76,26	114	76,26	114
11,50	12	118	71,0	56,0	45,0	76,26	115	76,26	115	76,26	115	76,26	115
11,60	12	118	71,0	56,0	45,0	76,26	116	76,26	116	76,26	116	76,26	116
11,70	12	118	71,0	56,0	45,0	76,26	117	76,26	117	76,26	117	76,26	117
11,80	12	118	71,0	56,0	45,0	76,26	118	76,26	118	76,26	118	76,26	118
11,90	12	118	71,0	56,0	45,0	76,26	119	76,26	119	76,26	119	76,26	119
12,00	12	118	71,0	56,0	45,0	76,26	120	76,26	120	76,26	120	76,26	120
12,25	14	124	77,0	60,0	45,0	102,70	122	102,70	122	100,80	12250		
12,50	14	124	77,0	60,0	45,0	102,70	125	102,70	125	102,70	125	102,70	125
12,70	14	124	77,0	60,0	45,0	102,70	127	102,70	127	102,70	127	102,70	127
12,80	14	124	77,0	60,0	45,0	102,70	128	102,70	128				
12,90	14	124	77,0	60,0	45,0	102,70	129	102,70	129				
13,00	14	124	77,0	60,0	45,0	102,70	130	102,70	130	102,70	130	102,70	130
13,10	14	124	77,0	60,0	45,0	102,70	131	102,70	131				
13,30	14	124	77,0	60,0	45,0	102,70	133	102,70	133				
13,50	14	124	77,0	60,0	45,0	102,70	135	102,70	135	102,70	135	102,70	135
13,70	14	124	77,0	60,0	45,0	102,70	137	102,70	137	102,70	137	102,70	137
13,80	14	124	77,0	60,0	45,0	102,70	138	102,70	138				
14,00	14	124	77,0	60,0	45,0	102,70	140	102,70	140	102,70	140	102,70	140

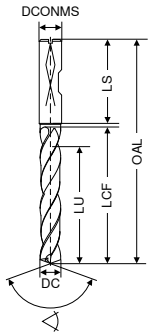
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

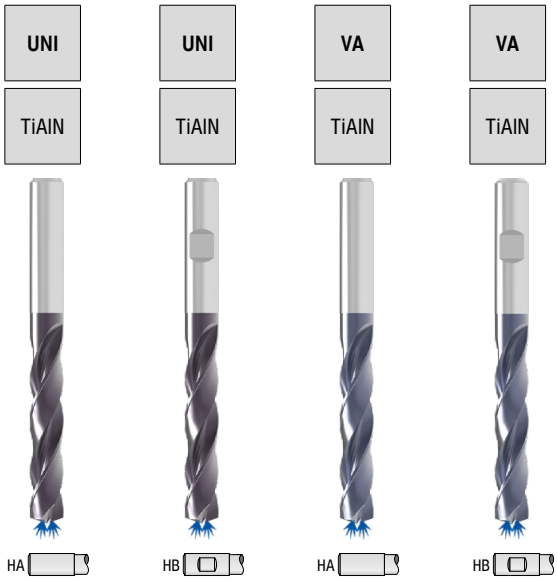
→ v_c Page 117+121

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
14,20	16	133	83,0	63,0	48,0	127,80	142	127,80	142				
14,50	16	133	83,0	63,0	48,0	127,80	145	127,80	145	127,80	145	127,80	145
14,70	16	133	83,0	63,0	48,0	127,80	147	127,80	147	127,80	147	127,80	147
14,80	16	133	83,0	63,0	48,0	127,80	148	127,80	148				
15,00	16	133	83,0	63,0	48,0	127,80	150	127,80	150	127,80	150	127,80	150
15,10	16	133	83,0	63,0	48,0	127,80	151	127,80	151				
15,25	16	133	83,0	63,0	48,0	127,80	152	127,80	152				
15,30	16	133	83,0	63,0	48,0	127,80	153	127,80	153				
15,50	16	133	83,0	63,0	48,0	127,80	155	127,80	155	127,80	155	127,80	155
15,60	16	133	83,0	63,0	48,0	127,80	156	127,80	156				
15,70	16	133	83,0	63,0	48,0	127,80	157	127,80	157	127,80	157	127,80	157
15,80	16	133	83,0	63,0	48,0	127,80	158	127,80	158				
16,00	16	133	83,0	63,0	48,0	127,80	160	127,80	160	127,80	160	127,80	160
16,50	18	143	93,0	71,0	48,0	203,80	165	203,80	165	203,80	165	203,80	165
16,80	18	143	93,0	71,0	48,0	203,80	168	203,80	168				
16,90	18	143	93,0	71,0	48,0	203,80	169	203,80	169				
17,00	18	143	93,0	71,0	48,0	203,80	170	203,80	170	203,80	170	203,80	170
17,50	18	143	93,0	71,0	48,0	203,80	175	203,80	175	203,80	175	203,80	175
17,60	18	143	93,0	71,0	48,0	203,80	176	203,80	176				
17,80	18	143	93,0	71,0	48,0	203,80	178	203,80	178				
18,00	18	143	93,0	71,0	48,0	203,80	180	203,80	180	203,80	180	203,80	180
18,50	20	153	101,0	77,0	50,0	221,50	185	221,50	185	221,50	185	221,50	185
18,80	20	153	101,0	77,0	50,0	221,50	188	221,50	188				
18,90	20	153	101,0	77,0	50,0	221,50	189	221,50	189				
19,00	20	153	101,0	77,0	50,0	221,50	190	221,50	190	221,50	190	221,50	190
19,50	20	153	101,0	77,0	50,0	221,50	195	221,50	195	221,50	195	221,50	195
19,60	20	153	101,0	77,0	50,0	221,50	196	221,50	196				
19,80	20	153	101,0	77,0	50,0	221,50	198	221,50	198				
20,00	20	153	101,0	77,0	50,0	221,50	200	221,50	200	221,50	200	221,50	200
Steel						●		●		○		○	
Stainless steel						○		○		●		●	
Cast iron						●		●		○		○	
Non ferrous metals						○		○		●		●	
Heat resistant alloys										●		●	

→ v_c Page 117+121

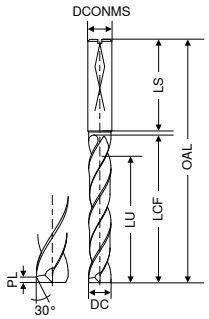
WTX – High Performance Drill, DIN 6537

- ▲ universal application
- ▲ four guidance lands
- ▲ polished chip flutes
- ▲ Type ALU 5xD (10 723 ...) on request
- ▲ PL = corner chamfers

≤ 5xD

180

Ti800





180°
Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 721 ...	
mm	mm	mm	mm	mm	mm	mm	EUR	
3,00	6	66	28	23	36	0,15	85,52	030
3,10	6	66	28	23	36	0,16	85,52	031
3,20	6	66	28	23	36	0,16	85,52	032
3,30	6	66	28	23	36	0,17	85,52	033
3,40	6	66	28	23	36	0,17	85,52	034
3,50	6	66	28	23	36	0,18	85,52	035
3,60	6	66	28	23	36	0,18	85,52	036
3,70	6	66	28	23	36	0,19	85,52	037
3,80	6	74	36	29	36	0,19	85,52	038
3,90	6	74	36	29	36	0,20	85,52	039
4,00	6	74	36	29	36	0,20	85,52	040
4,10	6	74	36	29	36	0,21	85,52	041
4,20	6	74	36	29	36	0,21	85,52	042
4,30	6	74	36	29	36	0,22	85,52	043
4,40	6	74	36	29	36	0,22	85,52	044
4,50	6	74	36	29	36	0,23	85,52	045
4,60	6	74	36	29	36	0,23	85,52	046
4,65	6	74	36	29	36	0,23	85,52	900
4,70	6	74	36	29	36	0,24	85,52	047
4,80	6	82	44	35	36	0,24	85,52	048
4,90	6	82	44	35	36	0,25	85,52	049
5,00	6	82	44	35	36	0,25	85,52	050
5,10	6	82	44	35	36	0,26	85,52	051
5,20	6	82	44	35	36	0,26	85,52	052
5,30	6	82	44	35	36	0,27	85,52	053
5,40	6	82	44	35	36	0,27	85,52	054
5,50	6	82	44	35	36	0,28	85,52	055
5,55	6	82	44	35	36	0,28	85,52	902
5,60	6	82	44	35	36	0,28	85,52	056
5,70	6	82	44	35	36	0,29	85,52	057
5,80	6	82	44	35	36	0,29	85,52	058
5,90	6	82	44	35	36	0,30	85,52	059
6,00	6	82	44	35	36	0,30	85,52	060
6,10	8	91	53	43	36	0,31	95,99	061
6,20	8	91	53	43	36	0,31	95,99	062
6,30	8	91	53	43	36	0,32	95,99	063
6,40	8	91	53	43	36	0,32	95,99	064
6,50	8	91	53	43	36	0,33	95,99	065
6,60	8	91	53	43	36	0,33	95,99	066
6,70	8	91	53	43	36	0,34	95,99	067
6,80	8	91	53	43	36	0,34	95,99	068
6,90	8	91	53	43	36	0,35	95,99	069
7,00	8	91	53	43	36	0,35	95,99	070
7,10	8	91	53	43	36	0,36	95,99	071
7,20	8	91	53	43	36	0,36	95,99	072
7,30	8	91	53	43	36	0,37	95,99	073
7,40	8	91	53	43	36	0,37	95,99	074
7,50	8	91	53	43	36	0,38	95,99	075
7,60	8	91	53	43	36	0,38	95,99	076
7,70	8	91	53	43	36	0,39	95,99	077
7,80	8	91	53	43	36	0,39	95,99	078
7,90	8	91	53	43	36	0,40	95,99	079
8,00	8	91	53	43	36	0,40	95,99	080
8,10	10	103	61	49	40	0,41	133,30	081

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 721 ...	
mm	mm	mm	mm	mm	mm	mm	EUR	
8,20	10	103	61	49	40	0,41	133,30	082
8,30	10	103	61	49	40	0,42	133,30	083
8,40	10	103	61	49	40	0,42	133,30	084
8,50	10	103	61	49	40	0,43	133,30	085
8,60	10	103	61	49	40	0,43	133,30	086
8,70	10	103	61	49	40	0,44	133,30	087
8,80	10	103	61	49	40	0,44	133,30	088
8,90	10	103	61	49	40	0,45	133,30	089
9,00	10	103	61	49	40	0,45	133,30	090
9,10	10	103	61	49	40	0,46	133,30	091
9,20	10	103	61	49	40	0,46	133,30	092
9,30	10	103	61	49	40	0,47	133,30	093
9,40	10	103	61	49	40	0,47	133,30	094
9,50	10	103	61	49	40	0,48	133,30	095
9,60	10	103	61	49	40	0,48	133,30	096
9,70	10	103	61	49	40	0,49	133,30	097
9,80	10	103	61	49	40	0,49	133,30	098
9,90	10	103	61	49	40	0,50	133,30	099
10,00	10	103	61	49	40	0,50	133,30	100
10,10	12	116	69	54	45	0,51	186,30	101
10,20	12	116	69	54	45	0,51	186,30	102
10,30	12	116	69	54	45	0,52	186,30	103
10,40	12	116	69	54	45	0,52	186,30	104
10,50	12	116	69	54	45	0,53	186,30	105
10,60	12	116	69	54	45	0,53	186,30	106
10,70	12	116	69	54	45	0,54	186,30	107
10,80	12	116	69	54	45	0,54	186,30	108
10,90	12	116	69	54	45	0,55	186,30	109
11,00	12	116	69	54	45	0,55	186,30	110
11,10	12	116	69	54	45	0,56	186,30	111
11,20	12	116	69	54	45	0,56	186,30	112
11,30	12	116	69	54	45	0,57	186,30	113
11,40	12	116	69	54	45	0,57	186,30	114
11,50	12	116	69	54	45	0,58	186,30	115
11,60	12	116	69	54	45	0,58	186,30	116
11,70	12	116	69	54	45	0,59	186,30	117
11,80	12	116	69	54	45	0,59	186,30	118
11,90	12	116	69	54	45	0,60	186,30	119
12,00	12	116	69	54	45	0,60	186,30	120
12,50	14	122	75	58	45	0,63	256,80	125
12,80	14	122	75	58	45	0,64	256,80	128
13,00	14	122	75	58	45	0,65	256,80	130
13,50	14	122	75	58	45	0,68	256,80	135
13,80	14	122	75	58	45	0,69	256,80	138
14,00	14	122	75	58	45	0,70	256,80	140
14,50	16	131	81	61	48	0,73	319,60	145
14,80	16	131	81	61	48	0,74	319,60	148
15,00	16	131	81	61	48	0,75	319,60	150
15,50	16	131	81	61	48	0,78	319,60	155
15,80	16	131	81	61	48	0,79	319,60	158
16,00	16	131	81	61	48	0,80	319,60	160
16,50	18	141	91	69	48	0,83	417,80	165
16,80	18	141	91	69	48	0,84	417,80	168
17,00	18	141	91	69	48	0,85	417,80	170
17,50	18	141	91	69	48	0,88	417,80	175
17,80	18	141	91	69	48	0,89	417,80	178
18,00	18	141	91	69	48	0,90	417,80	180
18,50	20	151	99	75	50	0,93	535,60	185
18,80	20	151	99	75	50	0,94	535,60	188
19,00	20	151	99	75	50	0,95	535,60	190
19,50	20	151	99	75	50	0,98	535,60	195
19,80	20	151	99	75	50	0,99	535,60	198
20,00	20	151	99	75	50	1,00	535,60	200

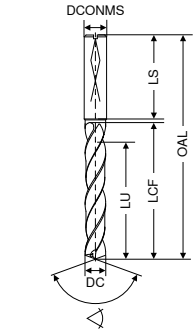
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
Hardened materials	○

→ v_c Page 115

WTX – High Performance Drill, factory standard

2

≤ 8xD



Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



	HA	HA	HA	HB	HE	HA
	135°	145°	135°	135°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	NEW T4	T7	T7	T7	NEW T4
	Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC $_{m7/h7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
3,00	6	72	34	29	36			137,80	03000	121,30	030	121,30	030	121,30	030	129,00	03000
3,10	6	72	34	29	36			137,80	03100	121,30	031	121,30	031	121,30	031	129,00	03100
3,20	6	72	34	29	36			137,80	03200	121,30	032	121,30	032	121,30	032	129,00	03200
3,30	6	72	34	29	36			137,80	03300	121,30	033	121,30	033	121,30	033	129,00	03300
3,40	6	72	34	29	36			137,80	03400	121,30	034	121,30	034	121,30	034	129,00	03400
3,50	6	72	34	29	36			137,80	03500	121,30	035	121,30	035	121,30	035	129,00	03500
3,60	6	72	34	29	36			137,80	03600	121,30	036	121,30	036	121,30	036	129,00	03600
3,70	6	72	34	29	36			137,80	03700	121,30	037	121,30	037	121,30	037	129,00	03700
3,80	6	81	43	36	36			137,80	03800	121,30	038	121,30	038	121,30	038	129,00	03800
3,90	6	81	43	36	36			137,80	03900	121,30	039	121,30	039	121,30	039	129,00	03900
4,00	6	81	43	36	36			137,80	04000	121,30	040	121,30	040	121,30	040	129,00	04000
4,00	6	95	57	48	36	140,00	04000										
4,10	6	81	43	36	36			137,80	04100	121,30	041	121,30	041	121,30	041	129,00	04100
4,10	6	95	57	48	36	140,00	04100										
4,20	6	81	43	36	36			137,80	04200	121,30	042	121,30	042	121,30	042	129,00	04200
4,20	6	95	57	48	36	140,00	04200										
4,30	6	81	43	36	36			137,80	04300	121,30	043	121,30	043	121,30	043	129,00	04300
4,30	6	95	57	48	36	140,00	04300										
4,40	6	81	43	36	36			137,80	04400	121,30	044	121,30	044	121,30	044	129,00	04400
4,40	6	95	57	48	36	140,00	04400										
4,50	6	81	43	36	36			137,80	04500	121,30	045	121,30	045	121,30	045	129,00	04500
4,50	6	95	57	48	36	140,00	04500										
4,60	6	81	43	36	36			137,80	04600	121,30	046	121,30	046	121,30	046	129,00	04600
4,60	6	95	57	48	36	140,00	04600										
4,65	6	81	43	36	36			137,80	04650								
4,70	6	81	43	36	36			137,80	04700	121,30	047	121,30	047	121,30	047	129,00	04700
4,70	6	95	57	48	36	140,00	04700										
4,80	6	95	57	48	36	140,00	04800	137,80	04800	121,30	048	121,30	048	121,30	048	129,00	04800
4,90	6	95	57	48	36	140,00	04900	137,80	04900	121,30	049	121,30	049	121,30	049	129,00	04900
5,00	6	95	57	48	36	140,00	05000	137,80	05000	121,30	050	121,30	050	121,30	050	129,00	05000
5,10	6	95	57	48	36	140,00	05100	137,80	05100	121,30	051	121,30	051	121,30	051	129,00	05100
5,20	6	95	57	48	36	140,00	05200	137,80	05200	121,30	052	121,30	052	121,30	052	129,00	05200
5,30	6	95	57	48	36	140,00	05300	137,80	05300	121,30	053	121,30	053	121,30	053	129,00	05300
5,40	6	95	57	48	36	140,00	05400	137,80	05400	121,30	054	121,30	054	121,30	054	129,00	05400
5,50	6	95	57	48	36	140,00	05500	137,80	05500	121,30	055	121,30	055	121,30	055	129,00	05500
5,55	6	95	57	48	36	140,00	05550	137,80	05550								

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

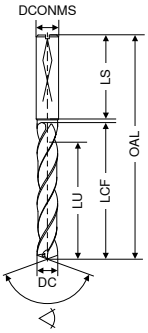
→ v_c Page 97–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Feed UNI = Three Cutting Edges

	Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
	DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	HA	HA	HA	HB	HE	HA
	135°	145°	135°	135°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	NEW T4	T7	T7	T7	NEW T4
	Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
5,60	6	95	57	48	36	140,00	05600	137,80	05600	121,30	056	121,30	056	121,30	056	129,00	05600
5,70	6	95	57	48	36	140,00	05700	137,80	05700	121,30	057	121,30	057	121,30	057	129,00	05700
5,80	6	95	57	48	36	140,00	05800	137,80	05800	121,30	058	121,30	058	121,30	058	129,00	05800
5,90	6	95	57	48	36	140,00	05900	137,80	05900	121,30	059	121,30	059	121,30	059	129,00	05900
6,00	6	95	57	48	36	140,00	06000	137,80	06000	121,30	060	121,30	060	121,30	060	129,00	06000
6,10	8	114	76	64	36	179,60	06100	176,30	06100	153,20	061	153,20	061	153,20	061	154,30	06100
6,20	8	114	76	64	36	179,60	06200	176,30	06200	153,20	062	153,20	062	153,20	062	154,30	06200
6,30	8	114	76	64	36	179,60	06300	176,30	06300	153,20	063	153,20	063	153,20	063	154,30	06300
6,40	8	114	76	64	36	179,60	06400	176,30	06400	153,20	064	153,20	064	153,20	064	154,30	06400
6,50	8	114	76	64	36	179,60	06500	176,30	06500	153,20	065	153,20	065	153,20	065	154,30	06500
6,60	8	114	76	64	36	179,60	06600	176,30	06600	153,20	066	153,20	066	153,20	066	154,30	06600
6,70	8	114	76	64	36	179,60	06700	176,30	06700	153,20	067	153,20	067	153,20	067	154,30	06700
6,80	8	114	76	64	36	179,60	06800	176,30	06800	153,20	068	153,20	068	153,20	068	154,30	06800
6,90	8	114	76	64	36	179,60	06900	176,30	06900	153,20	069	153,20	069	153,20	069	154,30	06900
7,00	8	114	76	64	36	179,60	07000	176,30	07000	153,20	070	153,20	070	153,20	070	154,30	07000
7,10	8	114	76	64	36	179,60	07100	176,30	07100	153,20	071	153,20	071	153,20	071	154,30	07100
7,20	8	114	76	64	36	179,60	07200	176,30	07200	153,20	072	153,20	072	153,20	072	154,30	07200
7,30	8	114	76	64	36	179,60	07300	176,30	07300	153,20	073	153,20	073	153,20	073	154,30	07300
7,40	8	114	76	64	36	179,60	07400	176,30	07400	153,20	074	153,20	074	153,20	074	154,30	07400
7,50	8	114	76	64	36	179,60	07500	176,30	07500	153,20	075	153,20	075	153,20	075	154,30	07500
7,60	8	114	76	64	36	179,60	07600	176,30	07600	153,20	076	153,20	076	153,20	076	154,30	07600
7,70	8	114	76	64	36	179,60	07700	176,30	07700	153,20	077	153,20	077	153,20	077	154,30	07700
7,80	8	114	76	64	36	179,60	07800	176,30	07800	153,20	078	153,20	078	153,20	078	154,30	07800
7,90	8	114	76	64	36	179,60	07900	176,30	07900	153,20	079	153,20	079	153,20	079	154,30	07900
8,00	8	114	76	64	36	179,60	08000	176,30	08000	153,20	080	153,20	080	153,20	080	154,30	08000
8,10	10	142	95	80	40	246,90	08100	241,40	08100	210,50	081	210,50	081	210,50	081	222,60	08100
8,20	10	142	95	80	40	246,90	08200	241,40	08200	210,50	082	210,50	082	210,50	082	222,60	08200
8,30	10	142	95	80	40	246,90	08300	241,40	08300	210,50	083	210,50	083	210,50	083	222,60	08300
8,40	10	142	95	80	40	246,90	08400	241,40	08400	210,50	084	210,50	084	210,50	084	222,60	08400
8,50	10	142	95	80	40	246,90	08500	241,40	08500	210,50	085	210,50	085	210,50	085	222,60	08500
8,60	10	142	95	80	40	246,90	08600	241,40	08600	210,50	086	210,50	086	210,50	086	222,60	08600
8,70	10	142	95	80	40	246,90	08700	241,40	08700	210,50	087	210,50	087	210,50	087	222,60	08700
8,80	10	142	95	80	40	246,90	08800	241,40	08800	210,50	088	210,50	088	210,50	088	222,60	08800
8,90	10	142	95	80	40	246,90	08900	241,40	08900	210,50	089	210,50	089	210,50	089	222,60	08900
9,00	10	142	95	80	40	246,90	09000	241,40	09000	210,50	090	210,50	090	210,50	090	222,60	09000
9,10	10	142	95	80	40	246,90	09100	241,40	09100	210,50	091	210,50	091	210,50	091	222,60	09100

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

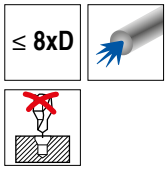
→ v_c Page 97–104

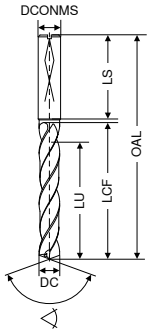
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD





Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
135°	145°	135°	135°	135°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm												
9,20	10	142	95	80	40	246,90	09200	241,40	09200	210,50	092	210,50	092	210,50	092	222,60	09200
9,30	10	142	95	80	40	246,90	09300	241,40	09300	210,50	093	210,50	093	210,50	093	222,60	09300
9,40	10	142	95	80	40	246,90	09400	241,40	09400	210,50	094	210,50	094	210,50	094	222,60	09400
9,50	10	142	95	80	40	246,90	09500	241,40	09500	210,50	095	210,50	095	210,50	095	222,60	09500
9,60	10	142	95	80	40	246,90	09600	241,40	09600	210,50	096	210,50	096	210,50	096	222,60	09600
9,70	10	142	95	80	40	246,90	09700	241,40	09700	210,50	097	210,50	097	210,50	097	222,60	09700
9,80	10	142	95	80	40	246,90	09800	241,40	09800	210,50	098	210,50	098	210,50	098	222,60	09800
9,90	10	142	95	80	40	246,90	09900	241,40	09900	210,50	099	210,50	099	210,50	099	222,60	09900
10,00	10	142	95	80	40	246,90	10000	241,40	10000	210,50	100	210,50	100	210,50	100	222,60	10000
10,10	12	162	114	96	45	325,10	10100	319,60	10100	278,80	101	278,80	101	278,80	101	285,50	10100
10,20	12	162	114	96	45	325,10	10200	319,60	10200	278,80	102	278,80	102	278,80	102	285,50	10200
10,30	12	162	114	96	45	325,10	10300	319,60	10300	278,80	103	278,80	103	278,80	103	285,50	10300
10,40	12	162	114	96	45	325,10	10400	319,60	10400	278,80	104	278,80	104	278,80	104	285,50	10400
10,50	12	162	114	96	45	325,10	10500	319,60	10500	278,80	105	278,80	105	278,80	105	285,50	10500
10,60	12	162	114	96	45	325,10	10600	319,60	10600	278,80	106	278,80	106	278,80	106	285,50	10600
10,70	12	162	114	96	45	325,10	10700	319,60	10700	278,80	107	278,80	107	278,80	107	285,50	10700
10,80	12	162	114	96	45	325,10	10800	319,60	10800	278,80	108	278,80	108	278,80	108	285,50	10800
10,90	12	162	114	96	45	325,10	10900	319,60	10900	278,80	109	278,80	109	278,80	109	285,50	10900
11,00	12	162	114	96	45	325,10	11000	319,60	11000	278,80	110	278,80	110	278,80	110	285,50	11000
11,10	12	162	114	96	45	325,10	11100	319,60	11100	278,80	111	278,80	111	278,80	111	285,50	11100
11,20	12	162	114	96	45	325,10	11200	319,60	11200	278,80	112	278,80	112	278,80	112	285,50	11200
11,30	12	162	114	96	45	325,10	11300	319,60	11300	278,80	113	278,80	113	278,80	113	285,50	11300
11,40	12	162	114	96	45	325,10	11400	319,60	11400	278,80	114	278,80	114	278,80	114	285,50	11400
11,50	12	162	114	96	45	325,10	11500	319,60	11500	278,80	115	278,80	115	278,80	115	285,50	11500
11,60	12	162	114	96	45	325,10	11600	319,60	11600	278,80	116	278,80	116	278,80	116	285,50	11600
11,70	12	162	114	96	45	325,10	11700	319,60	11700	278,80	117	278,80	117	278,80	117	285,50	11700
11,80	12	162	114	96	45	325,10	11800	319,60	11800	278,80	118	278,80	118	278,80	118	285,50	11800
11,90	12	162	114	96	45	325,10	11900	319,60	11900	278,80	119	278,80	119	278,80	119	285,50	11900
12,00	12	162	114	96	45	325,10	12000	319,60	12000	278,80	120	278,80	120	278,80	120	285,50	12000
12,50	14	178	133	112	45	392,40	12500	385,80	12500			338,30	125	338,30	125	342,80	12500
12,50	14	178	131	112	45					338,30	125						
12,80	14	178	133	112	45	392,40	12800	385,80	12800			338,30	128	338,30	128	342,80	12800
12,80	14	178	131	112	45					338,30	128						
13,00	14	178	133	112	45	392,40	13000	385,80	13000			338,30	130	338,30	130	342,80	13000
13,00	14	178	131	112	45					338,30	130						
13,50	14	178	131	112	45					338,30	135						

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

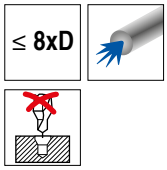
→ v_c Page 97–104

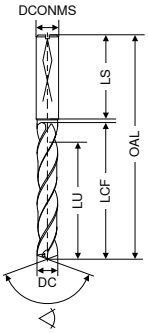
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD





Feed UNI = Three Cutting Edges

	Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
	DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	HA	HA	HA	HB	HE	HA
	135°	145°	135°	135°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	NEW T4	T7	T7	T7	NEW T4
	Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS												
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
13,50	14	178	133	112	45	392,40	13500	385,80	13500			338,30	135	338,30	135	342,80	13500
13,80	14	178	133	112	45	392,40	13800	385,80	13800			338,30	138	338,30	138	342,80	13800
13,80	14	178	131	112	45					338,30	138						
14,00	14	178	133	112	45	392,40	14000	385,80	14000			338,30	140	338,30	140	342,80	14000
14,00	14	178	131	112	45					338,30	140						
14,50	16	203	152	128	48	512,50	14500	501,60	14500	438,70	145	438,70	145	438,70	145	462,90	14500
14,80	16	203	152	128	48	512,50	14800	501,60	14800	438,70	148	438,70	148	438,70	148	462,90	14800
15,00	16	203	152	128	48	512,50	15000	501,60	15000	438,70	150	438,70	150	438,70	150	462,90	15000
15,50	16	203	152	128	48	512,50	15500	501,60	15500	438,70	155	438,70	155	438,70	155	462,90	15500
15,80	16	203	152	128	48	512,50	15800	501,60	15800	438,70	158	438,70	158	438,70	158	462,90	15800
16,00	16	203	152	128	48	512,50	16000	501,60	16000	438,70	160	438,70	160	438,70	160	462,90	16000
16,50	18	222	171	144	48	659,20	16500	637,10	16500	552,10	165	552,10	165	552,10	165	648,10	16500
16,80	18	222	171	144	48	659,20	16800	637,10	16800	552,10	168	552,10	168	552,10	168	648,10	16800
17,00	18	222	171	144	48	659,20	17000	637,10	17000	552,10	170	552,10	170	552,10	170	648,10	17000
17,50	18	222	171	144	48	659,20	17500	637,10	17500	552,10	175	552,10	175	552,10	175	648,10	17500
17,80	18	222	171	144	48	659,20	17800	637,10	17800	552,10	178	552,10	178	552,10	178	648,10	17800
18,00	18	222	171	144	48	659,20	18000	637,10	18000	552,10	180	552,10	180	552,10	180	648,10	18000
18,50	20	243	190	160	50	804,70	18500	750,60	18500	643,70	185	643,70	185	643,70	185	817,80	18500
18,80	20	243	190	160	50	804,70	18800	750,60	18800	643,70	188	643,70	188	643,70	188	817,80	18800
19,00	20	243	190	160	50	804,70	19000	750,60	19000	643,70	190	643,70	190	643,70	190	817,80	19000
19,50	20	243	190	160	50	804,70	19500	750,60	19500	643,70	195	643,70	195	643,70	195	817,80	19500
19,80	20	243	190	160	50	804,70	19800	750,60	19800	643,70	198	643,70	198	643,70	198	817,80	19800
20,00	20	243	190	160	50	804,70	20000	750,60	20000	643,70	200	643,70	200	643,70	200	817,80	20000

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

→ v_c Page 97–104

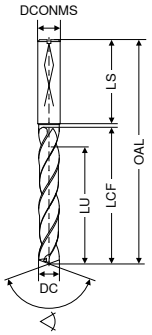
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

WPC – High Performance Drill, factory standard

≤ 8xD

UNI

TiAlN





HA

135°

Solid carbide

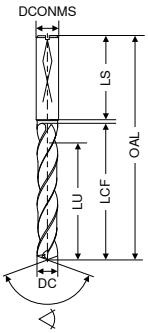
DC h7	DCONMS h6	OAL	LCF	LU	LS	T1 Article no. 11 612 ... EUR	
mm	mm	mm	mm	mm	mm		
3,0	6	72	34	29	36	81,99	030
3,1	6	72	34	29	36	81,99	031
3,2	6	72	34	29	36	81,99	032
3,3	6	72	34	29	36	81,99	033
3,4	6	72	34	29	36	81,99	034
3,5	6	72	34	29	36	81,99	035
3,6	6	72	34	29	36	81,99	036
3,7	6	72	34	29	36	81,99	037
3,8	6	81	43	36	36	81,99	038
3,9	6	81	43	36	36	81,99	039
4,0	6	81	43	36	36	81,99	040
4,1	6	81	43	36	36	81,99	041
4,2	6	81	43	36	36	81,99	042
4,3	6	81	43	36	36	81,99	043
4,4	6	81	43	36	36	81,99	044
4,5	6	81	43	36	36	81,99	045
4,6	6	81	43	36	36	81,99	046
4,7	6	81	43	36	36	81,99	047
4,8	6	95	57	48	36	81,99	048
4,9	6	95	57	48	36	81,99	049
5,0	6	95	57	48	36	81,99	050
5,1	6	95	57	48	36	81,99	051
5,2	6	95	57	48	36	81,99	052
5,3	6	95	57	48	36	81,99	053
5,5	6	95	57	48	36	81,99	055
5,8	6	95	57	48	36	81,99	058
5,9	6	95	57	48	36	81,99	059
6,0	6	95	57	48	36	81,99	060
6,1	8	114	76	64	36	101,10	061
6,2	8	114	76	64	36	101,10	062
6,3	8	114	76	64	36	101,10	063
6,5	8	114	76	64	36	101,10	065
6,6	8	114	76	64	36	101,10	066
6,8	8	114	76	64	36	101,10	068
7,0	8	114	76	64	36	101,10	070
7,4	8	114	76	64	36	101,10	074
7,5	8	114	76	64	36	101,10	075
7,7	8	114	76	64	36	101,10	077
7,8	8	114	76	64	36	101,10	078
7,9	8	114	76	64	36	101,10	079
8,0	8	114	76	64	36	101,10	080
8,1	10	142	95	80	40	124,60	081
8,2	10	142	95	80	40	124,60	082
8,3	10	142	95	80	40	124,60	083
8,5	10	142	95	80	40	124,60	085
8,6	10	142	95	80	40	124,60	086
8,7	10	142	95	80	40	124,60	087
8,8	10	142	95	80	40	124,60	088
9,0	10	142	95	80	40	124,60	090
9,1	10	142	95	80	40	124,60	091
9,2	10	142	95	80	40	124,60	092
9,3	10	142	95	80	40	124,60	093
9,4	10	142	95	80	40	124,60	094
9,5	10	142	95	80	40	124,60	095
9,7	10	142	95	80	40	124,60	097
9,8	10	142	95	80	40	124,60	098
9,9	10	142	95	80	40	124,60	099
10,0	10	142	95	80	40	124,60	100
10,2	12	162	114	96	45	165,40	102
10,5	12	162	114	96	45	165,40	105
10,8	12	162	114	96	45	165,40	108
11,0	12	162	114	96	45	165,40	110
11,2	12	162	114	96	45	165,40	112
11,5	12	162	114	96	45	165,40	115
11,8	12	162	114	96	45	165,40	118
12,0	12	162	114	96	45	165,40	120
12,5	14	178	131	112	45	248,00	125
13,0	14	178	131	112	45	248,00	130
13,5	14	178	131	112	45	248,00	135
14,0	14	178	131	112	45	248,00	140
14,5	16	203	152	128	48	324,10	145
15,0	16	203	152	128	48	324,10	150
15,5	16	203	152	128	48	324,10	155
16,0	16	203	152	128	48	324,10	160
16,5	18	222	171	144	48	419,90	165
17,0	18	222	171	144	48	419,90	170
17,5	18	222	171	144	48	419,90	175
18,0	18	222	171	144	48	419,90	180
18,5	20	243	190	160	50	467,40	185
19,0	20	243	190	160	50	467,40	190
20,0	20	243	190	160	50	467,40	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 118

WTX – High Performance Drill, factory standard

≤ 8xD



Type GG = Straight Fluted



140° Solid carbide
130° Solid carbide
135° Solid carbide

DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	T4 Article no. 10 770 ...		T4 Article no. 10 753 ...		NEW T4 Article no. 10 792 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
3,0	6	72	34	29	36	163,10	030	163,10	030	126,80	03000
3,1	6	72	34	29	36	163,10	031	163,10	031	126,80	03100
3,2	6	72	34	29	36	163,10	032	163,10	032	126,80	03200
3,3	6	72	34	29	36	163,10	033	163,10	033	126,80	03300
3,4	6	72	34	29	36	163,10	034	163,10	034	126,80	03400
3,5	6	72	34	29	36	163,10	035	163,10	035	126,80	03500
3,6	6	72	34	29	36	163,10	036	163,10	036	126,80	03600
3,7	6	72	34	29	36	163,10	037	163,10	037	126,80	03700
3,8	6	81	43	36	36	163,10	038	163,10	038	126,80	03800
3,9	6	81	43	36	36	163,10	039	163,10	039	126,80	03900
4,0	6	81	43	36	36	163,10	040	163,10	040	126,80	04000
4,1	6	81	43	36	36	163,10	041	163,10	041	126,80	04100
4,2	6	81	43	36	36	163,10	042	163,10	042	126,80	04200
4,3	6	81	43	36	36	163,10	043	163,10	043	126,80	04300
4,4	6	81	43	36	36	163,10	044	163,10	044	126,80	04400
4,5	6	81	43	36	36	163,10	045	163,10	045	126,80	04500
4,6	6	81	43	36	36	163,10	046	163,10	046	126,80	04600
4,7	6	81	43	36	36	163,10	047	163,10	047	126,80	04700
4,8	6	95	57	48	36	163,10	048	163,10	048	126,80	04800
4,9	6	95	57	48	36	163,10	049	163,10	049	126,80	04900
5,0	6	95	57	48	36	163,10	050	163,10	050	126,80	05000
5,1	6	95	57	48	36	163,10	051	163,10	051	126,80	05100
5,2	6	95	57	48	36	163,10	052	163,10	052	126,80	05200
5,3	6	95	57	48	36	163,10	053	163,10	053	126,80	05300
5,4	6	95	57	48	36	163,10	054	163,10	054	126,80	05400
5,5	6	95	57	48	36	163,10	055	163,10	055	126,80	05500
5,6	6	95	57	48	36	163,10	056	163,10	056	126,80	05600
5,7	6	95	57	48	36	163,10	057	163,10	057	126,80	05700
5,8	6	95	57	48	36	163,10	058	163,10	058	126,80	05800
5,9	6	95	57	48	36	163,10	059	163,10	059	126,80	05900
6,0	6	95	57	48	36	163,10	060	163,10	060	126,80	06000
6,1	8	114	76	64	36	196,30	061	169,70	061	158,70	06100
6,2	8	114	76	64	36	196,30	062	169,70	062	158,70	06200
6,3	8	114	76	64	36	196,30	063	169,70	063	158,70	06300
6,4	8	114	76	64	36	196,30	064	169,70	064	158,70	06400
6,5	8	114	76	64	36	196,30	065	169,70	065	158,70	06500
6,6	8	114	76	64	36	196,30	066	169,70	066	158,70	06600
6,7	8	114	76	64	36	196,30	067	169,70	067	158,70	06700
6,8	8	114	76	64	36	196,30	068	169,70	068	158,70	06800
6,9	8	114	76	64	36	196,30	069	169,70	069	158,70	06900
7,0	8	114	76	64	36	196,30	070	169,70	070	158,70	07000
7,1	8	114	76	64	36	196,30	071	169,70	071	158,70	07100
7,2	8	114	76	64	36	196,30	072	169,70	072	158,70	07200
7,3	8	114	76	64	36	196,30	073	169,70	073	158,70	07300
7,4	8	114	76	64	36	196,30	074	169,70	074	158,70	07400

Steel	○		
Stainless steel	●		
Cast iron	○	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○		

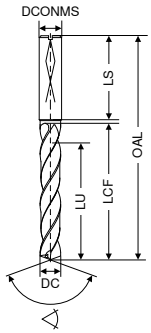
→ v_c Page 103–108

Ø DC_{m7} for Type VA and GG / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Type GG = Straight Fluted



140°
Solid carbide
T4

130°
Solid carbide
T4

135°
Solid carbide
NEW T4

DC $_{h7/m7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	Article no. 10 770 ...		Article no. 10 753 ...		Article no. 10 792 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
7,5	8	114	76	64	36	196,30	075	169,70	075	158,70	07500
7,6	8	114	76	64	36	196,30	076	169,70	076	158,70	07600
7,7	8	114	76	64	36	196,30	077	169,70	077	158,70	07700
7,8	8	114	76	64	36	196,30	078	169,70	078	158,70	07800
7,9	8	114	76	64	36	196,30	079	169,70	079	158,70	07900
8,0	8	114	76	64	36	196,30	080	169,70	080	158,70	08000
8,1	10	142	95	80	40	256,80	081	238,10	081	200,60	08100
8,2	10	142	95	80	40	256,80	082	238,10	082	200,60	08200
8,3	10	142	95	80	40	256,80	083	238,10	083	200,60	08300
8,4	10	142	95	80	40	256,80	084	238,10	084	200,60	08400
8,5	10	142	95	80	40	256,80	085	238,10	085	200,60	08500
8,6	10	142	95	80	40	256,80	086	238,10	086	200,60	08600
8,7	10	142	95	80	40	256,80	087	238,10	087	200,60	08700
8,8	10	142	95	80	40	256,80	088	238,10	088	200,60	08800
8,9	10	142	95	80	40	256,80	089	238,10	089	200,60	08900
9,0	10	142	95	80	40	256,80	090	238,10	090	200,60	09000
9,1	10	142	95	80	40	256,80	091	238,10	091	200,60	09100
9,2	10	142	95	80	40	256,80	092	238,10	092	200,60	09200
9,3	10	142	95	80	40	256,80	093	238,10	093	200,60	09300
9,4	10	142	95	80	40	256,80	094	238,10	094	200,60	09400
9,5	10	142	95	80	40	256,80	095	238,10	095	200,60	09500
9,6	10	142	95	80	40	256,80	096	238,10	096	200,60	09600
9,7	10	142	95	80	40	256,80	097	238,10	097	200,60	09700
9,8	10	142	95	80	40	256,80	098	238,10	098	200,60	09800
9,9	10	142	95	80	40	256,80	099	238,10	099	200,60	09900
10,0	10	142	95	80	40	256,80	100	238,10	100	200,60	10000
10,1	12	162	114	96	45	330,60	101	303,10	101		
10,2	12	162	114	96	45	330,60	102	303,10	102	257,90	10200
10,3	12	162	114	96	45	330,60	103	303,10	103	257,90	10300
10,4	12	162	114	96	45	330,60	104	303,10	104	257,90	10400
10,5	12	162	114	96	45	330,60	105	303,10	105	257,90	10500
10,6	12	162	114	96	45	330,60	106	303,10	106		
10,7	12	162	114	96	45	330,60	107	303,10	107	257,90	10700
10,8	12	162	114	96	45	330,60	108	303,10	108	257,90	10800
10,9	12	162	114	96	45	330,60	109	303,10	109		
11,0	12	162	114	96	45	330,60	110	303,10	110	257,90	11000
11,1	12	162	114	96	45	330,60	111	303,10	111		
11,2	12	162	114	96	45	330,60	112	303,10	112	257,90	11200
11,3	12	162	114	96	45	330,60	113	303,10	113		
11,4	12	162	114	96	45	330,60	114	303,10	114		
11,5	12	162	114	96	45	330,60	115	303,10	115	257,90	11500
11,6	12	162	114	96	45	330,60	116	303,10	116	257,90	11600
11,7	12	162	114	96	45	330,60	117	303,10	117		
11,8	12	162	114	96	45	330,60	118	303,10	118	257,90	11800
11,9	12	162	114	96	45	330,60	119	303,10	119		

Steel	○		
Stainless steel	●		
Cast iron	○	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○		

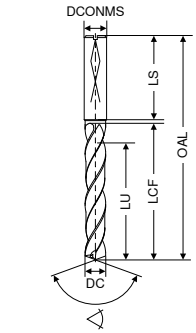
→ v_c Page 103–108

Ø DC_{m7} for Type VA and GG / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Type GG = Straight Fluted



140° Solid carbide
130° Solid carbide
135° Solid carbide

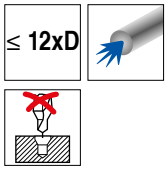
DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	T4 Article no. 10 770 ...		T4 Article no. 10 753 ...		NEW T4 Article no. 10 792 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
12,0	12	162	114	96	45	330,60	120	303,10	120	257,90	12000
12,2	14	178	131	112	45					327,30	12200
12,5	14	178	133	112	45	427,70	125	444,20	125		
12,5	14	178	131	112	45					327,30	12500
12,8	14	178	131	112	45					327,30	12800
12,8	14	178	133	112	45	427,70	128	444,20	128		
13,0	14	178	131	112	45					327,30	13000
13,0	14	178	133	112	45	427,70	130	444,20	130		
13,2	14	178	131	112	45					327,30	13200
13,5	14	178	131	112	45					327,30	13500
13,5	14	178	133	112	45	427,70	135	444,20	135		
13,8	14	178	131	112	45					327,30	13800
13,8	14	178	133	112	45	427,70	138	444,20	138		
14,0	14	178	133	112	45	427,70	140	444,20	140		
14,0	14	178	131	112	45					327,30	14000
14,2	16	203	152	128	48					467,40	14200
14,5	16	203	152	128	48	550,00	145	574,20	145	467,40	14500
14,8	16	203	152	128	48	550,00	148	574,20	148	467,40	14800
15,0	16	203	152	128	48	550,00	150	574,20	150	467,40	15000
15,2	16	203	152	128	48					467,40	15200
15,5	16	203	152	128	48	550,00	155	574,20	155	467,40	15500
15,8	16	203	152	128	48	550,00	158	574,20	158	467,40	15800
16,0	16	203	152	128	48	550,00	160	574,20	160	467,40	16000
16,2	18	222	171	144	48					573,10	16200
16,5	18	222	171	144	48	740,70	165	794,70	165	573,10	16500
16,8	18	222	171	144	48	740,70	168	794,70	168	573,10	16800
17,0	18	222	171	144	48	740,70	170	794,70	170	573,10	17000
17,2	18	222	171	144	48					573,10	17200
17,5	18	222	171	144	48	740,70	175	794,70	175	573,10	17500
17,8	18	222	171	144	48	740,70	178	794,70	178	573,10	17800
18,0	18	222	171	144	48	740,70	180	794,70	180	573,10	18000
18,2	20	243	190	160	50					695,50	18200
18,5	20	243	190	160	50	970,90	185	995,30	185	695,50	18500
18,8	20	243	190	160	50	970,90	188	995,30	188	695,50	18800
19,0	20	243	190	160	50	970,90	190	995,30	190	695,50	19000
19,1	20	243	190	160	50					695,50	19100
19,2	20	243	190	160	50					695,50	19200
19,5	20	243	190	160	50	970,90	195	995,30	195	695,50	19500
19,8	20	243	190	160	50	970,90	198	995,30	198	695,50	19800
20,0	20	243	190	160	50	970,90	200	995,30	200	695,50	20000

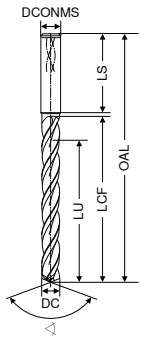
Steel	○		
Stainless steel	●		
Cast iron	○	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○		

→ v_c Page 103–108

Ø DC_{m7} for Type VA and GG / **Ø DC_{h7}** for Type AL

WTX – High Performance Drill, factory standard







DC $_{h7/m7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	NEW T4 Article no. 10 796 ...		NEW T4 Article no. 10 737 ...		NEW T4 Article no. 10 793 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
3,0	6	92	54	48	36			177,50	03000	153,20	03000
3,1	6	92	54	48	36			177,50	03100	153,20	03100
3,2	6	92	54	48	36			177,50	03200	153,20	03200
3,3	6	92	54	48	36			177,50	03300	153,20	03300
3,4	6	92	54	48	36			177,50	03400	153,20	03400
3,5	6	92	54	48	36			177,50	03500	153,20	03500
3,6	6	92	54	48	36			177,50	03600	153,20	03600
3,7	6	92	54	48	36			177,50	03700	153,20	03700
3,8	6	102	64	58	36			177,50	03800	153,20	03800
3,9	6	102	64	58	36			177,50	03900	153,20	03900
4,0	6	102	64	58	36	199,10	04000	177,50	04000	153,20	04000
4,1	6	102	64	58	36	199,10	04100	177,50	04100	153,20	04100
4,2	6	102	64	58	36	199,10	04200	177,50	04200	153,20	04200
4,3	6	102	64	58	36	199,10	04300	177,50	04300	153,20	04300
4,4	6	102	64	58	36	199,10	04400	177,50	04400	153,20	04400
4,5	6	102	64	58	36	199,10	04500	177,50	04500	153,20	04500
4,6	6	102	64	58	36	199,10	04600	177,50	04600	153,20	04600
4,7	6	102	64	58	36	199,10	04700	177,50	04700	153,20	04700
4,8	6	116	78	70	36	199,10	04800	177,50	04800	153,20	04800
4,9	6	116	78	70	36	199,10	04900	177,50	04900	153,20	04900
5,0	6	116	78	70	36	199,10	05000	177,50	05000	153,20	05000
5,1	6	116	78	70	36	199,10	05100	177,50	05100	153,20	05100
5,2	6	116	78	70	36	199,10	05200	177,50	05200	153,20	05200
5,3	6	116	78	70	36	199,10	05300	177,50	05300	153,20	05300
5,4	6	116	78	70	36	199,10	05400	177,50	05400	153,20	05400
5,5	6	116	78	70	36	199,10	05500	177,50	05500	153,20	05500
5,6	6	116	78	70	36	199,10	05600	177,50	05600	153,20	05600
5,7	6	116	78	70	36	199,10	05700	177,50	05700	153,20	05700
5,8	6	116	78	70	36	199,10	05800	177,50	05800	153,20	05800
5,9	6	116	78	70	36	199,10	05900	177,50	05900	153,20	05900
6,0	6	116	78	70	36	199,10	06000	177,50	06000	153,20	06000
6,1	8	146	108	94	36	256,40	06100	191,80	06100	212,80	06100
6,2	8	146	108	94	36	256,40	06200	191,80	06200	212,80	06200
6,3	8	146	108	94	36	256,40	06300	191,80	06300	212,80	06300
6,4	8	146	108	94	36	256,40	06400	191,80	06400	212,80	06400
6,5	8	146	108	94	36	256,40	06500	191,80	06500	212,80	06500
6,6	8	146	108	94	36	256,40	06600	191,80	06600	212,80	06600
6,7	8	146	108	94	36	256,40	06700	191,80	06700	212,80	06700
6,8	8	146	108	94	36	256,40	06800	191,80	06800	212,80	06800
6,9	8	146	108	94	36	256,40	06900	191,80	06900	212,80	06900
7,0	8	146	108	94	36	256,40	07000	191,80	07000	212,80	07000
7,1	8	146	108	94	36	256,40	07100	191,80	07100	212,80	07100
7,2	8	146	108	94	36	256,40	07200	191,80	07200	212,80	07200

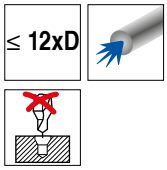
Steel	●	●	
Stainless steel	●		
Cast iron	●	●	○
Non ferrous metals	○	○	●
Heat resistant alloys			

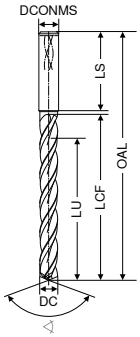
→ v_c Page 99–107

Ø DC_{m7} for Type Feed UNI and Quattro 4F / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard







DC $_{h7/m7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	NEW T4 Article no. 10 796 ...		NEW T4 Article no. 10 737 ...		NEW T4 Article no. 10 793 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
7,3	8	146	108	94	36	256,40	07300	191,80	07300	212,80	07300
7,4	8	146	108	94	36	256,40	07400	191,80	07400	212,80	07400
7,5	8	146	108	94	36	256,40	07500	191,80	07500	212,80	07500
7,6	8	146	108	94	36	256,40	07600	191,80	07600	212,80	07600
7,7	8	146	108	94	36	256,40	07700	191,80	07700	212,80	07700
7,8	8	146	108	94	36	256,40	07800	191,80	07800	212,80	07800
7,9	8	146	108	94	36	256,40	07900	191,80	07900	212,80	07900
8,0	8	146	108	94	36	256,40	08000	191,80	08000	212,80	08000
8,1	10	162	120	110	40	334,10	08100	261,30	08100	268,80	08100
8,2	10	162	120	110	40	334,10	08200	261,30	08200	268,80	08200
8,3	10	162	120	110	40	334,10	08300	261,30	08300	268,80	08300
8,4	10	162	120	110	40	334,10	08400	261,30	08400	268,80	08400
8,5	10	162	120	110	40	334,10	08500	261,30	08500	268,80	08500
8,6	10	162	120	110	40	334,10	08600	261,30	08600	268,80	08600
8,7	10	162	120	110	40	334,10	08700	261,30	08700	268,80	08700
8,8	10	162	120	110	40	334,10	08800	261,30	08800	268,80	08800
8,9	10	162	120	110	40	334,10	08900	261,30	08900	268,80	08900
9,0	10	162	120	110	40	334,10	09000	261,30	09000	268,80	09000
9,1	10	162	120	110	40	334,10	09100	261,30	09100	268,80	09100
9,2	10	162	120	110	40	334,10	09200	261,30	09200	268,80	09200
9,3	10	162	120	110	40	334,10	09300	261,30	09300	268,80	09300
9,4	10	162	120	110	40	334,10	09400	261,30	09400	268,80	09400
9,5	10	162	120	110	40	334,10	09500	261,30	09500	268,80	09500
9,6	10	162	120	110	40	334,10	09600	261,30	09600	268,80	09600
9,7	10	162	120	110	40	334,10	09700	261,30	09700	268,80	09700
9,8	10	162	120	110	40	334,10	09800	261,30	09800	268,80	09800
9,9	10	162	120	110	40	334,10	09900	261,30	09900	268,80	09900
10,0	10	162	120	110	40	334,10	10000	261,30	10000	268,80	10000
10,1	12	204	156	142	45	435,80	10100	349,30	10100		
10,2	12	204	156	142	45	435,80	10200	349,30	10200	365,90	10200
10,3	12	204	156	142	45	435,80	10300	349,30	10300		
10,4	12	204	156	142	45	435,80	10400	349,30	10400		
10,5	12	204	156	142	45	435,80	10500	349,30	10500	365,90	10500
10,6	12	204	156	142	45	435,80	10600	349,30	10600		
10,7	12	204	156	142	45	435,80	10700	349,30	10700	365,90	10700
10,8	12	204	156	142	45	435,80	10800	349,30	10800	365,90	10800
10,9	12	204	156	142	45	435,80	10900	349,30	10900		
11,0	12	204	156	142	45	435,80	11000	349,30	11000	365,90	11000
11,1	12	204	156	142	45	435,80	11100	349,30	11100		
11,2	12	204	156	142	45	435,80	11200	349,30	11200	365,90	11200
11,3	12	204	156	142	45	435,80	11300	349,30	11300	365,90	11300
11,4	12	204	156	142	45	435,80	11400	349,30	11400		
11,5	12	204	156	142	45	435,80	11500	349,30	11500	365,90	11500

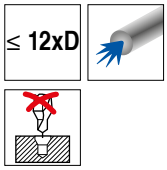
Steel	●	●	
Stainless steel	●		
Cast iron	●	●	○
Non ferrous metals	○	○	●
Heat resistant alloys			

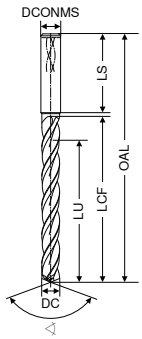
→ v_c Page 99–107

Ø DC_{m7} for Type Feed UNI and Quattro 4F / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard







DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 796 ...		NEW T4 Article no. 10 737 ...		NEW T4 Article no. 10 793 ...	
mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
11,6	12	204	156	142	45	435,80	11600	349,30	11600		
11,7	12	204	156	142	45	435,80	11700	349,30	11700		
11,8	12	204	156	142	45	435,80	11800	349,30	11800	365,90	11800
11,9	12	204	156	142	45	435,80	11900	349,30	11900		
12,0	12	204	156	142	45	435,80	12000	349,30	12000	365,90	12000
12,1	14	230	182	166	45					513,70	12100
12,2	14	230	182	166	45					513,70	12200
12,5	14	230	182	166	45	558,60	12500	512,50	12500	513,70	12500
12,8	14	230	182	166	45	558,60	12800	512,50	12800	513,70	12800
13,0	14	230	182	166	45	558,60	13000	512,50	13000	513,70	13000
13,2	14	230	182	166	45					513,70	13200
13,5	14	230	182	166	45	558,60	13500	512,50	13500	513,70	13500
13,8	14	230	182	166	45	558,60	13800	512,50	13800	513,70	13800
14,0	14	230	182	166	45	558,60	14000	512,50	14000	513,70	14000
14,2	16	260	208	192	48					621,60	14200
14,5	16	260	208	192	48	726,20	14500	668,90	14500	621,60	14500
14,7	16	260	208	192	48					621,60	14700
14,8	16	260	208	192	48	726,20	14800	668,90	14800	621,60	14800
15,0	16	260	208	192	48	726,20	15000	668,90	15000	621,60	15000
15,2	16	260	208	192	48					621,60	15200
15,5	16	260	208	192	48	726,20	15500	668,90	15500	621,60	15500
15,7	16	260	208	192	48					621,60	15700
15,8	16	260	208	192	48	726,20	15800	668,90	15800	621,60	15800
16,0	16	260	208	192	48	726,20	16000	668,90	16000	621,60	16000
16,2	18	285	234	216	48					692,10	16200
16,5	18	285	234	216	48	937,40	16500	907,00	16500	692,10	16500
16,8	18	285	234	216	48	937,40	16800	907,00	16800	692,10	16800
17,0	18	285	234	216	48	937,40	17000	907,00	17000	692,10	17000
17,2	18	285	234	216	48					692,10	17200
17,5	18	285	234	216	48	937,40	17500	907,00	17500	692,10	17500
17,8	18	285	234	216	48	937,40	17800	907,00	17800	692,10	17800
18,0	18	285	234	216	48	937,40	18000	907,00	18000	692,10	18000
18,2	20	310	258	240	50					876,20	18200
18,5	20	310	258	240	50	1.146,00	18500	1.136,00	18500	876,20	18500
18,7	20	310	258	240	50					876,20	18700
18,8	20	310	258	240	50	1.146,00	18800	1.136,00	18800	876,20	18800
19,0	20	310	258	240	50	1.146,00	19000	1.136,00	19000	876,20	19000
19,2	20	310	258	240	50					876,20	19200
19,5	20	310	258	240	50	1.146,00	19500	1.136,00	19500	876,20	19500
19,8	20	310	258	240	50	1.146,00	19800	1.136,00	19800	876,20	19800
20,0	20	310	258	240	50	1.146,00	20000	1.136,00	20000	876,20	20000

Steel	●	●	
Stainless steel	●		
Cast iron	●	●	○
Non ferrous metals	○	○	●
Heat resistant alloys			

→ v_c Page 99–107

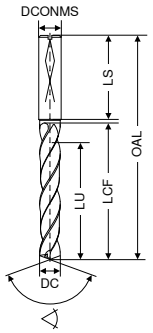
Ø DC_{m7} for Type Feed UNI and Quattro 4F / **Ø DC_{h7}** for Type AL

WPC – High Performance Drill, factory standard

≤ 12xD

UNI

TiAlN





HA

135°

Solid carbide

DC h7	DCONMS h6	OAL	LCF	LU	LS	T1 Article no. 11 615 ...	
mm	mm	mm	mm	mm	mm	EUR	
3,0	6	92	54	48	36	110,20	030
3,1	6	92	54	48	36	110,20	031
3,2	6	92	54	48	36	110,20	032
3,3	6	92	54	48	36	110,20	033
3,4	6	92	54	48	36	110,20	034
3,5	6	92	54	48	36	110,20	035
3,6	6	92	54	48	36	110,20	036
3,7	6	92	54	48	36	110,20	037
3,8	6	102	64	58	36	110,20	038
3,9	6	102	64	58	36	110,20	039
4,0	6	102	64	58	36	110,20	040
4,1	6	102	64	58	36	110,20	041
4,2	6	102	64	58	36	110,20	042
4,3	6	102	64	58	36	110,20	043
4,4	6	102	64	58	36	110,20	044
4,5	6	102	64	58	36	110,20	045
4,6	6	102	64	58	36	110,20	046
4,7	6	102	64	58	36	110,20	047
4,8	6	116	78	70	36	110,20	048
4,9	6	116	78	70	36	110,20	049
5,0	6	116	78	70	36	110,20	050
5,5	6	116	78	70	36	110,20	055
5,8	6	116	78	70	36	110,20	058
6,0	6	116	78	70	36	110,20	060
6,3	8	146	108	94	36	122,30	063
6,5	8	146	108	94	36	122,30	065
6,6	8	146	108	94	36	122,30	066
6,8	8	146	108	94	36	122,30	068
7,0	8	146	108	94	36	122,30	070
7,5	8	146	108	94	36	122,30	075
7,8	8	146	108	94	36	122,30	078
8,0	8	146	108	94	36	122,30	080
8,2	10	162	120	110	40	172,00	082
8,5	10	162	120	110	40	172,00	085
9,0	10	162	120	110	40	172,00	090
9,5	10	162	120	110	40	172,00	095
9,8	10	162	120	110	40	172,00	098
10,0	10	162	120	110	40	172,00	100
10,5	12	204	156	142	45	237,00	105
11,0	12	204	156	142	45	237,00	110
11,5	12	204	156	142	45	237,00	115
12,0	12	204	156	142	45	237,00	120
13,0	14	230	182	166	45	305,30	130
14,0	14	230	182	166	45	305,30	140
15,0	16	260	208	192	48	402,30	150
16,0	16	260	208	192	48	402,30	160
18,0	18	285	234	216	48	480,60	180

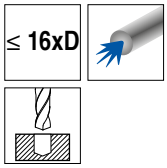
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

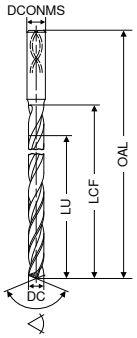
→ v_c Page 118

WTX – High performance deep hole drills

- up to 16xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 16xD





TB 16 UNI | TiAlN



TB 16 ALU | DLC



HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 016 ...		Article no. 11 017 ...	
mm	mm	mm	mm	mm	EUR		EUR	
2,0	4	84	42	39	122,30	020	122,30	020
2,2	4	84	42	39	122,30	022	122,30	022
2,3	4	84	42	39	122,30	023	122,30	023
2,4	4	96	54	50	136,80	024	136,80	024
2,5	4	96	54	50	136,80	025	136,80	025
2,7	4	96	54	50	136,80	027	136,80	027
2,8	4	96	54	50	136,80	028	136,80	028
3,0	6	100	60	55	174,10	030	174,10	030
3,2	6	100	60	55	174,10	032	174,10	032
3,3	6	100	60	55	174,10	033	174,10	033
3,5	6	100	60	55	174,10	035	174,10	035
3,8	6	115	75	69	181,80	038	181,80	038
4,0	6	115	75	69	181,80	040	181,80	040
4,2	6	115	75	69	195,10	042	195,10	042
4,5	6	130	90	83	195,10	045	195,10	045
4,8	6	130	90	83	206,10	048	206,10	048
5,0	6	130	90	83	206,10	050	206,10	050
5,5	6	150	108	99	216,00	055	216,00	055
5,8	6	150	108	99	216,00	058	216,00	058
6,0	6	150	108	99	216,00	060	216,00	060
6,5	8	165	125	115	229,30	065	229,30	065
6,8	8	165	125	115	246,90	068	246,90	068
7,0	8	165	125	115	246,90	070	246,90	070
7,5	8	180	140	128	275,60	075	275,60	075
7,8	8	180	140	128	275,60	078	275,60	078
8,0	8	180	140	128	275,60	080	275,60	080
8,5	10	205	160	147	304,20	085	304,20	085
8,8	10	205	160	147	339,60	088	339,60	088
9,0	10	205	160	147	339,60	090	339,60	090
9,8	10	225	180	165	339,60	098	339,60	098
10,0	10	225	180	165	339,60	100	339,60	100
10,2	12	240	190	174	379,10	102	379,10	102
10,8	12	240	190	174	379,10	108	379,10	108
11,8	12	265	215	197	379,10	118	379,10	118
12,0	12	265	215	197	379,10	120	379,10	120

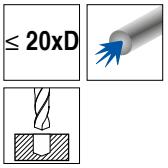
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

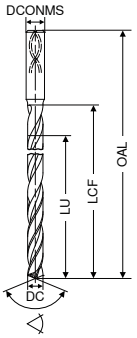
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 20xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 20xD





TB 20 UNI | TiAlN



TB 20 ALU | DLC



HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 020 ...		Article no. 11 021 ...	
mm	mm	mm	mm	mm	EUR		EUR	
2,0	4	92	50	47	130,00	020	130,00	020
2,2	4	92	50	47	130,00	022	130,00	022
2,3	4	92	50	47	130,00	023	130,00	023
2,4	4	112	70	66	144,40	024	144,40	024
2,5	4	112	70	66	144,40	025	144,40	025
2,7	4	112	70	66	144,40	027	144,40	027
2,8	4	112	70	66	144,40	028	144,40	028
3,0	6	120	80	75	194,00	030	194,00	030
3,2	6	120	80	75	194,00	032	194,00	032
3,3	6	120	80	75	194,00	033	194,00	033
3,5	6	120	80	75	194,00	035	194,00	035
3,8	6	130	90	84	201,80	038	201,80	038
4,0	6	130	90	84	201,80	040	201,80	040
4,2	6	160	110	103	217,10	042	217,10	042
4,5	6	160	110	103	217,10	045	217,10	045
4,8	6	160	120	113	229,30	048	229,30	048
5,0	6	160	120	113	229,30	050	229,30	050
5,5	6	185	140	131	239,10	055	239,10	055
5,8	6	185	140	131	239,10	058	239,10	058
6,0	6	185	140	131	239,10	060	239,10	060
6,5	8	210	160	150	255,70	065	255,70	065
6,8	8	210	160	150	274,50	068	274,50	068
7,0	8	210	160	150	274,50	070	274,50	070
7,5	8	230	180	168	306,40	075	306,40	075
7,8	8	230	180	168	306,40	078	306,40	078
8,0	8	230	180	168	306,40	080	306,40	080
8,5	10	260	195	182	337,30	085	337,30	085
8,8	10	290	230	216	379,10	088	379,10	088
9,0	10	290	230	216	379,10	090	379,10	090
9,8	10	290	230	216	379,10	098	379,10	098
10,0	10	290	230	216	379,10	100	379,10	100
10,2	12	315	268	251	416,60	102	416,60	102
10,8	12	315	268	251	416,60	108	416,60	108
11,8	12	315	268	251	416,60	118	416,60	118
12,0	12	315	268	251	416,60	120	416,60	120

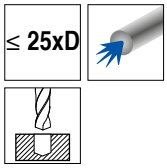
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

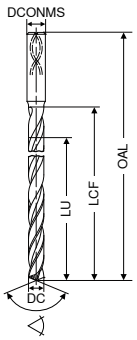
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 25xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 25xD





TB 25 UNI

TiAlN



HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 025 ...		Article no. 11 026 ...	
mm	mm	mm	mm	mm	EUR		EUR	
2,0	4	104	60	57	137,80	020	137,80	020
2,2	4	104	60	57	137,80	022	137,80	022
2,3	4	104	60	57	137,80	023	137,80	023
2,4	4	125	80	76	157,60	024	157,60	024
2,5	4	125	80	76	157,60	025	157,60	025
2,7	4	125	80	76	157,60	027	157,60	027
2,8	4	125	80	76	157,60	028	157,60	028
3,0	6	135	98	93	224,90	030	224,90	030
3,2	6	135	98	93	224,90	032	224,90	032
3,3	6	150	110	105	250,20	033	250,20	033
3,5	6	150	110	105	250,20	035	250,20	035
3,8	6	160	120	114	256,80	038	256,80	038
4,0	6	160	120	114	256,80	040	256,80	040
4,2	6	160	120	114	256,80	042	256,80	042
4,5	6	180	135	128	267,80	045	267,80	045
4,8	6	180	135	128	267,80	048	267,80	048
5,0	6	180	135	128	267,80	050	267,80	050
5,5	6	205	168	159	287,70	055	287,70	055
5,8	6	205	168	159	287,70	058	287,70	058
6,0	6	205	168	159	287,70	060	287,70	060
6,5	8	240	200	190	320,70	065	320,70	065
6,8	8	240	200	190	320,70	068	320,70	068
7,0	8	240	200	190	320,70	070	320,70	070
7,5	8	260	220	208	357,10	075	357,10	075
7,8	8	260	220	208	357,10	078	357,10	078
8,0	8	260	220	208	357,10	080	357,10	080
8,5	10	285	240	227	401,10	085	401,10	085
8,8	10	310	268	254	436,40	088	436,40	088
9,0	10	310	268	254	436,40	090	436,40	090
9,8	10	310	268	254	436,40	098	436,40	098
10,0	10	310	268	254	436,40	100	436,40	100
10,2	12	375	325	308	524,60	102	524,60	102
10,8	12	375	325	308	524,60	108	524,60	108
11,8	12	375	325	308	524,60	118	524,60	118
12,0	12	375	325	308	524,60	120	524,60	120

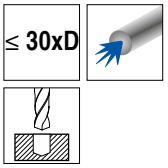
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

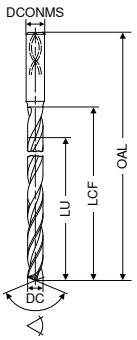
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 30xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 30xD





TB 30 UNI

TiAlN



HA

135°

Solid carbide

T7

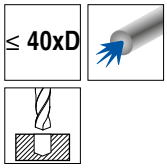
DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 030 ...		Article no. 11 031 ...	
mm	mm	mm	mm	mm	EUR		EUR	
2,0	4	115	70	67	147,80	020	147,80	020
2,2	4	115	70	67	147,80	022	147,80	022
2,3	4	115	70	67	147,80	023	147,80	023
2,4	4	138	90	86	170,90	024	170,90	024
2,5	4	138	90	86	170,90	025	170,90	025
2,7	4	138	90	86	170,90	027	170,90	027
2,8	4	138	90	86	170,90	028	170,90	028
3,0	6	150	105	100	288,80	030	288,80	030
3,2	6	150	105	100	288,80	032	288,80	032
3,3	6	185	135	130	296,50	033	296,50	033
3,5	6	185	135	130	296,50	035	296,50	035
3,8	6	185	135	130	296,50	038	296,50	038
4,0	6	185	135	130	296,50	040	296,50	040
4,2	6	185	135	130	296,50	042	296,50	042
4,5	6	215	165	158	305,30	045	305,30	045
4,8	6	215	165	158	305,30	048	305,30	048
5,0	6	215	165	158	305,30	050	305,30	050
5,5	6	230	180	171	319,60	055	319,60	055
5,8	6	230	180	171	319,60	058	319,60	058
6,0	6	230	180	171	319,60	060	319,60	060
6,5	8	280	215	205	352,70	065	352,70	065
6,8	8	280	230	220	365,90	068	365,90	068
7,0	8	280	230	220	365,90	070	365,90	070
7,5	8	280	230	220	365,90	075	365,90	075
7,8	8	315	265	253	407,80	078	407,80	078
8,0	8	315	265	253	407,80	080	407,80	080
8,5	10	350	295	282	470,60	085	470,60	085
8,8	10	380	330	316	494,80	088	494,80	088
9,0	10	380	330	316	494,80	090	494,80	090
9,8	10	380	330	316	494,80	098	494,80	098
10,0	10	380	330	316	494,80	100	494,80	100
10,2	12	430	380	365	631,60	102	631,60	102
10,8	12	430	380	365	631,60	108	631,60	108
11,8	12	430	380	365	631,60	118	631,60	118
12,0	12	430	380	365	631,60	120	631,60	120

Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

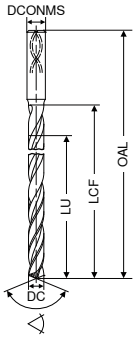
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 40xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation









Solid carbide
T7

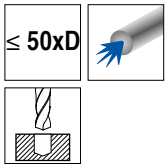
DC fg6	DCONMS h5	OAL	LCF	LU	Article no. 11 040 ...	
mm	mm	mm	mm	mm	EUR	
3,0	6	195	150	146	365,90	030
4,0	6	220	175	169	365,90	040
4,2	6	245	200	194	404,60	042
4,5	6	245	200	194	404,60	045
4,8	6	275	230	223	432,10	048
5,0	6	275	230	223	432,10	050
5,5	6	305	260	251	465,10	055
5,8	6	305	260	251	465,10	058
6,0	6	305	260	251	465,10	060
6,5	8	345	300	290	500,30	065
6,8	8	345	300	290	500,30	068
7,0	8	345	300	290	500,30	070
7,5	8	385	340	328	556,60	075
7,8	8	385	340	328	556,60	078
8,0	8	385	340	328	556,60	080
8,5	10	430	380	367	612,90	085
8,8	10	430	380	367	612,90	088
9,0	10	430	380	367	612,90	090

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

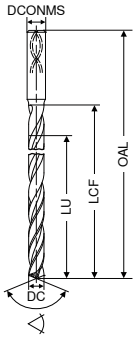
→ v_c Page 123
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 50xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation









Solid carbide
T7

DC fg6	DCONMS h5	OAL	LCF	LU	Article no. 11 050 ...	
mm	mm	mm	mm	mm	EUR	
3,0	6	220	175	170	497,10	030
4,0	6	265	220	214	497,10	040
4,2	6	290	245	238	553,30	042
4,5	6	290	245	238	553,30	045
4,8	6	320	275	268	624,90	048
5,0	6	320	275	268	624,90	050
5,5	6	355	310	302	703,10	055
5,8	6	355	315	306	713,10	058
6,0	6	355	315	306	713,10	060
6,5	8	395	350	340	792,50	065
6,8	8	425	380	370	859,70	068

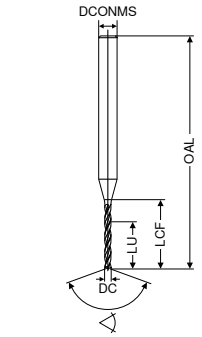
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

→ v_c Page 123
→ Machining information: Page 134

WTX – High Performance Drills

▲ standard shank Ø 3 mm h6 for use in heat shrink adapters

≤ 5xD



MINI

TiAlN



Solid carbide

DC +0,004	DCONMS h6	OAL	LCF	LU	T7 Article no. 11 770 ...	
mm	mm	mm	mm	mm	EUR	
0,10	3	38	1,2	1,0	29,75	00100
0,15	3	38	2,0	1,7	26,23	00150
0,20	3	38	3,5	3,0	22,93	00200
0,25	3	38	3,5	3,0	19,51	00250
0,30	3	38	5,5	5,0	16,10	00300
0,35	3	38	5,5	5,0	16,10	00350
0,40	3	38	7,0	6,0	16,10	00400
0,45	3	38	7,0	6,0	16,10	00450
0,50	3	38	7,0	6,0	16,10	00500
0,55	3	38	7,0	6,0	16,10	00550
0,60	3	38	7,0	6,0	16,10	00600
0,65	3	38	7,0	6,0	16,10	00650
0,70	3	38	10,5	8,0	16,10	00700
0,75	3	38	10,5	8,0	16,10	00750
0,80	3	38	10,5	8,0	16,10	00800
0,85	3	38	10,5	8,0	16,10	00850
0,90	3	38	10,5	8,0	16,10	00900
0,95	3	38	10,5	8,0	16,10	00950
0,97	3	38	10,5	8,0	16,10	00970
0,98	3	38	10,5	8,0	16,10	00980
0,99	3	38	10,5	8,0	16,10	00990
1,00	3	38	10,5	8,0	16,10	01000
1,01	3	38	10,5	8,0	16,10	01010
1,02	3	38	10,5	8,0	16,10	01020
1,03	3	38	10,5	8,0	16,10	01030
1,05	3	38	10,5	8,0	16,10	01050
1,10	3	38	10,5	8,0	16,10	01100
1,15	3	38	10,5	8,0	16,10	01150
1,20	3	38	10,5	8,0	16,10	01200
1,25	3	38	10,5	8,0	16,10	01250
1,30	3	38	10,5	8,0	16,10	01300
1,35	3	38	10,5	8,0	16,10	01350
1,40	3	38	10,5	8,0	16,10	01400
1,45	3	38	10,5	8,0	16,10	01450
1,47	3	38	10,5	8,0	16,10	01470
1,48	3	38	10,5	8,0	16,10	01480
1,49	3	38	10,5	8,0	16,10	01490
1,50	3	38	10,5	8,0	16,10	01500
1,51	3	38	10,5	8,0	16,10	01510
1,52	3	38	10,5	8,0	16,10	01520
1,53	3	38	10,5	8,0	16,10	01530
1,55	3	38	10,5	8,0	16,10	01550
1,60	3	38	10,5	8,0	16,10	01600
1,65	3	38	10,5	8,0	16,10	01650
1,70	3	38	10,5	8,0	16,10	01700
1,75	3	38	10,5	8,0	16,10	01750
1,80	3	38	10,5	8,0	16,10	01800
1,85	3	38	12,0	8,0	16,10	01850
1,90	3	38	12,0	8,0	16,10	01900
1,95	3	38	12,0	8,0	16,10	01950
1,97	3	38	12,0	8,0	16,10	01970
1,98	3	38	12,0	8,0	16,10	01980
1,99	3	38	12,0	8,0	16,10	01990
2,00	3	42	13,0	9,0	23,04	02000
2,01	3	42	13,0	9,0	23,04	02010
2,02	3	42	13,0	9,0	23,04	02020
2,03	3	42	13,0	9,0	23,04	02030
2,05	3	42	13,0	9,0	23,04	02050
2,10	3	42	13,0	9,0	23,04	02100
2,15	3	42	13,0	9,0	23,04	02150
2,20	3	46	15,0	10,0	26,01	02200
2,25	3	46	15,0	10,0	26,01	02250
2,30	3	46	15,0	10,0	26,01	02300
2,35	3	46	15,0	10,0	26,01	02350
2,40	3	46	15,0	10,0	26,01	02400
2,45	3	46	15,0	10,0	26,01	02450
2,47	3	46	15,0	10,0	26,01	02470
2,48	3	46	15,0	10,0	26,01	02480
2,49	3	46	15,0	10,0	26,01	02490
2,50	3	46	15,0	10,0	26,01	02500
2,51	3	46	15,0	10,0	26,01	02510
2,52	3	46	15,0	10,0	26,01	02520
2,53	3	46	15,0	10,0	26,01	02530
2,60	3	46	15,0	10,0	26,01	02600
2,70	3	46	15,0	10,0	26,01	02700
2,80	3	46	15,0	10,0	26,01	02800
2,90	3	46	15,0	10,0	26,01	02900

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○

→ v_c Page 110

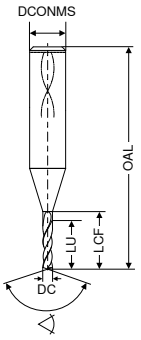
WTX – High Performance Drill, factory standard

- WTX flute geometry, optimises swarf control and chip evacuation
- all diameters with standard shank 3 mm

≤ 5xD

MINI

Ti700





Solid carbide

T4

DC +0,004	DCONMS -0,002/-0,005	OAL	LCF	LU	Article no. 10 775 ...	
mm	mm	mm	mm	mm	EUR	
1,0	3	55	8	5	122,30	010
1,1	3	55	12	8	122,30	011
1,2	3	55	12	8	122,30	012
1,3	3	55	12	8	122,30	013
1,4	3	55	12	8	122,30	014
1,5	3	55	12	8	122,30	015
1,6	3	68	16	11	129,00	016
1,7	3	68	16	11	129,00	017
1,8	3	68	16	11	129,00	018
1,9	3	68	16	11	129,00	019
2,0	3	68	16	11	129,00	020
2,1	3	74	20	14	132,30	021
2,2	3	74	20	14	132,30	022
2,3	3	74	20	14	132,30	023
2,4	3	74	20	14	132,30	024
2,5	3	74	20	14	132,30	025
2,6	3	81	23	16	138,80	026
2,7	3	81	23	16	138,80	027
2,8	3	81	23	16	138,80	028
2,9	3	81	23	16	138,80	029

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●

→ v_c Page 109

Coolant pressure 20–50 bar

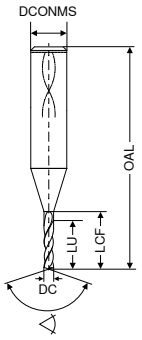
WTX – High Performance Drill, factory standard

- WTX flute geometry, optimises swarf control and chip evacuation
- all diameters with standard shank 3 mm

≤ 8xD

MINI

Ti700





Solid carbide

T4

DC +0,004	DCONMS -0,002/-0,005	OAL	LCF	LU	Article no. 10 778 ...	
mm	mm	mm	mm	mm	EUR	
1,0	3	55	11	8	129,00	010
1,1	3	55	17	13	129,00	011
1,2	3	55	17	13	129,00	012
1,3	3	55	17	13	129,00	013
1,4	3	55	17	13	129,00	014
1,5	3	55	17	13	129,00	015
1,6	3	68	22	17	138,80	016
1,7	3	68	22	17	138,80	017
1,8	3	68	22	17	138,80	018
1,9	3	68	22	17	138,80	019
2,0	3	68	22	17	138,80	020
2,1	3	74	28	22	141,00	021
2,2	3	74	28	22	141,00	022
2,3	3	74	28	22	141,00	023
2,4	3	74	28	22	141,00	024
2,5	3	74	28	22	141,00	025
2,6	3	81	32	25	145,50	026
2,7	3	81	32	25	145,50	027
2,8	3	81	32	25	145,50	028
2,9	3	81	32	25	145,50	029

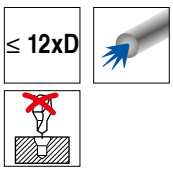
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●

→ v_c Page 109

Coolant pressure 20–50 bar

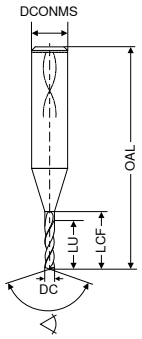
WTX – High Performance Drill, factory standard

- ▲ WTX flute geometry guarantees optimum swarf control and chip evacuation
- ▲ all diameters with standard shank 3 mm



MINI

Ti700





Solid carbide

T4

DC +0,004	DCONMS -0,002/-0,005	OAL	LCF	LU	Article no. 10 779 ...	
mm	mm	mm	mm	mm	EUR	
1,0	3	55	15	12	145,50	010
1,1	3	55	23	19	145,50	011
1,2	3	55	23	19	145,50	012
1,3	3	55	23	19	145,50	013
1,4	3	55	23	19	145,50	014
1,5	3	55	23	19	145,50	015
1,6	3	68	30	25	153,20	016
1,7	3	68	30	25	153,20	017
1,8	3	68	30	25	153,20	018
1,9	3	68	30	25	153,20	019
2,0	3	68	30	25	153,20	020
2,1	3	74	38	32	156,50	021
2,2	3	74	38	32	156,50	022
2,3	3	74	38	32	156,50	023
2,4	3	74	38	32	156,50	024
2,5	3	74	38	32	156,50	025
2,6	3	81	44	37	159,90	026
2,7	3	81	44	37	159,90	027
2,8	3	81	44	37	159,90	028
2,9	3	81	44	37	159,90	029

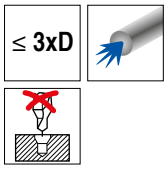
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

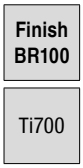
→ v_c Page 109

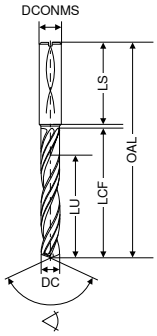
Coolant pressure 20–50 bar

WTX – Drill-Reamer -1/100

- solid carbide high-performance drill-reaming tool
- drilling and reaming in one operation
- 2 drilling edges
- 4 reaming edges
- high feed rates
- good surface quality
- for blind holes and through holes









Solid carbide
T4

DC ±0,003	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 761 ...	
mm	mm	mm	mm	mm	mm	EUR	
3,97	6	66	24	17	36	125,70	03970
3,98	6	66	24	17	36	125,70	03980
3,99	6	66	24	17	36	125,70	03990
4,00	6	66	24	17	36	125,70	04000
4,01	6	66	24	17	36	125,70	04010
4,02	6	66	24	17	36	125,70	04020
4,97	6	66	24	17	36	125,70	04970
4,98	6	66	24	17	36	125,70	04980
4,99	6	66	24	17	36	125,70	04990
5,00	6	79	34	24	36	125,70	05000
5,01	6	79	34	24	36	125,70	05010
5,02	6	79	34	24	36	125,70	05020
5,97	6	79	34	24	36	125,70	05970
5,98	6	79	34	24	36	125,70	05980
5,99	6	79	34	24	36	125,70	05990
6,00	6	79	34	24	36	125,70	06000
6,01	6	79	34	24	36	125,70	06010
6,02	6	79	34	24	36	125,70	06020
7,97	8	79	34	24	36	125,70	07970
7,98	8	79	34	24	36	125,70	07980
7,99	8	79	34	24	36	125,70	07990
8,00	8	79	34	24	36	125,70	08000
8,01	8	79	34	24	36	125,70	08010
8,02	8	79	34	24	36	125,70	08020
9,97	10	89	47	35	40	145,50	09970
9,98	10	89	47	35	40	145,50	09980
9,99	10	89	47	35	40	145,50	09990
10,00	10	89	47	35	40	145,50	10000
10,01	10	89	47	35	40	145,50	10010
10,02	10	89	47	35	40	145,50	10020
11,97	12	102	55	40	45	203,80	11970
11,98	12	102	55	40	45	203,80	11980
11,99	12	102	55	40	45	203,80	11990
12,00	12	102	55	40	45	203,80	12000
12,01	12	102	55	40	45	203,80	12010
12,02	12	102	55	40	45	203,80	12020

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 112

Tolerances e.g. Ø 8 F7 = 8.02 mm						
Ø 4	3,97	U 7	**X 7**			
	3,98	**N 10**	**N 11**	R 7		
	3,99	M 8	**N 7**	**N 8**	**N 9**	
	4,00	**J 7**	**J 8**	JS 7	JS 8	JS 9
	4,01	**G 7**	**H 8**			
	4,02	**F 8**	**H 9**			
Ø 5	4,97	U 7	**X 7**			
	4,98	**N 10**	**N 11**	R 7		
	4,99	M 8	**N 7**	**N 8**	**N 9**	
	5,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	5,01	**G 7**	**H 8**			
	5,02	**F 8**	**H 9**			
Ø 6	5,97	U 7	**X 7**			
	5,98	**N 10**	**N 11**	R 7		
	5,99	M 8	**N 7**	**N 8**	**N 9**	
	6,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	6,01	**G 7**	**H 8**			
	6,02	**F 8**	**H 9**			
Ø 8	7,97	S 7	**U 7**			
	7,98	N 8	**N 10**	**N 11**	P 7	R 7
	7,99	K 8	M 6	M 7	**M 8**	N 9
	8,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	8,01	G 7	**H 8**			
	8,02	**F 7**	F 8	**H 9**		
Ø 10	9,97	S 7	**U 7**			
	9,98	N 8	**N 10**	**N 11**	P 7	R 7
	9,99	K 8	M 6	M 7	**M 8**	N 9
	10,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	10,01	G 7	**H 8**			
	10,02	**F 7**	F 8	H 9		
Ø 12	11,97	N 11	R 7	**S 7**		
	11,98	N 8	**N 9**	**N 10**	**P 7**	
	11,99	K 8	**M 6**	**M 7**	**M 8**	N 7
	12,00	**J 7**	**J 8**	**JS 7**	**JS 8**	
	12,01	G 6	**H 7**	H 8	**JS 9**	
	12,02	F 7				

Tolerance classes written in standard print are not optimally positioned in the tolerance field.

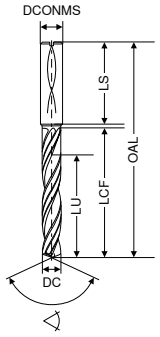
WTX – Drill-Reamer

- solid carbide high-performance drill-reaming tool
- drilling and reaming to tolerance H7 in one operation
- 2 drilling edges
- 4 reaming edges
- high feed rates
- good surface quality
- for blind holes and through holes
- optimum roundness – tolerance H7

≤ 3xD

Finish BR

Ti700





140°
Solid carbide

T4

DC h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 760 ...	
mm	mm	mm	mm	mm	mm	EUR	
4	6	66	24	17	36	125,70	040
5	6	79	34	24	36	125,70	050
6	6	79	34	24	36	125,70	060
8	8	79	34	24	36	125,70	080
10	10	89	47	35	40	145,50	100
12	12	102	55	40	45	203,80	120
14	14	107	60	43	45	274,50	140
16	16	115	65	45	48	380,30	160

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 112

Special dimensions available upon request

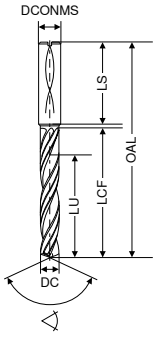
WTX – Drill-Reamer

- solid carbide high-performance drill-reaming tool
- drilling and reaming to tolerance H7 in one operation
- 2 drilling edges
- 4 reaming edges
- high feed rates
- good surface quality
- for blind holes and through holes
- optimum roundness – tolerance H7

≤ 5xD

Finish BR

Ti700





140°
Solid carbide

T4

DC h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 762 ...	
mm	mm	mm	mm	mm	mm	EUR	
4	6	74	36	29	36	151,00	040
5	6	91	53	43	36	151,00	050
6	6	91	53	43	36	151,00	060
8	8	91	53	43	36	151,00	080
10	10	103	61	49	40	215,00	100
12	12	118	71	56	45	304,20	120
14	14	124	77	60	45	414,30	140
16	16	133	83	63	48	515,80	160
18	18	143	93	71	48	595,20	180
20	20	153	101	77	50	717,50	200

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 113

Special dimensions available upon request

2

WTX – Short 90° step drill

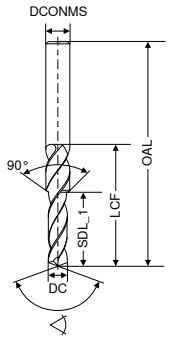
▲ for core hole plus countersink for thread cutting

≤ 3xD

SB

DPX74S

DRAGONSKIN





140°

Solid carbide

NEW T4

For threads	DC m7	DCONMS h6	OAL	SDL_1	LCF	Article no. 10 767 ...	
	mm	mm	mm	mm	mm	EUR	
M3	2,5	6	62	8,8	20	36,81	02500
M4	3,3	6	62	11,4	24	44,73	03300
M5	4,2	6	66	13,6	28	51,32	04200
M6	5,0	8	79	16,5	34	64,48	05000
M8	6,8	10	89	21,0	47	105,30	06800
M10	8,5	12	102	25,5	55	129,00	08500
M12	10,2	14	107	30,0	60	181,60	10200
M14	12,0	16	115	34,5	65	221,10	12000
M16	14,0	18	123	38,5	73	227,70	14000

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 110

WTX – Short 90° step drill

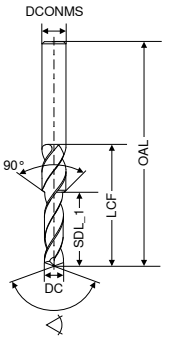
▲ for core hole plus countersink for thread forming

≤ 3xD

SB

DPX74S

DRAGONSKIN





140°

Solid carbide

NEW T4

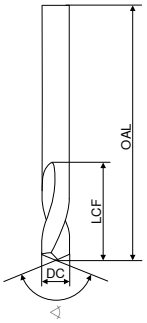
For threads	DC m7	DCONMS h6	OAL	SDL_1	LCF	Article no. 10 772 ...	
	mm	mm	mm	mm	mm	EUR	
M3	2,80	6	62	8,8	20	36,81	02800
M4	3,70	6	62	11,4	24	44,73	03700
M5	4,65	6	66	13,6	28	51,32	04650
M6	5,55	8	79	16,5	34	64,48	05550
M8	7,45	10	89	21,0	47	105,30	07450
M10	9,30	12	102	25,5	55	129,00	09300
M12	11,20	14	107	30,0	60	181,60	11200
M14	13,00	16	115	34,5	65	221,10	13000
M16	15,00	18	123	38,5	73	227,70	15000

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 110

NC Spot Drill, factory standard

▲ spiral flute



	NC-A	NC-A TiAlN	NC-A	NC-A TiAlN	NC-A	NC-A TiAlN
						
	HA	HB	HA	HB	HA	HB
	◁ 90°	◁ 90°	◁ 120°	◁ 120°	◁ 142°	◁ 142°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T3	T3	T3	T3	T3	T3
	Article no. 10 702 ...	Article no. 10 716 ...	Article no. 10 703 ...	Article no. 10 717 ...	Article no. 10 704 ...	Article no. 10 718 ...

DC $_{h5}$	OAL	LCF	EUR		EUR		EUR		EUR		EUR		EUR	
mm	mm	mm												
2	32	6	13,55	002	20,83	002 1)	13,55	002	20,83	002 1)	13,55	002	20,83	002 1)
3	32	8	13,55	003	20,83	003 1)	13,55	003	20,83	003 1)	13,55	003	20,83	003 1)
4	40	10	15,10	004	22,60	004 1)	15,10	004	22,60	004 1)	15,10	004	22,60	004 1)
5	50	13	17,31	005	24,80	005 1)	17,31	005	24,80	005 1)	17,31	005	24,80	005 1)
6	50	13	19,28	006	26,68	006	19,28	006	26,68	006	19,28	006	26,68	006
8	60	23	29,75	008	37,48	008	29,75	008	37,48	008	29,75	008	37,48	008
10	70	24	41,77	010	49,38	010	41,77	010	49,38	010	41,77	010	49,38	010
12	70	24	56,32	012	64,15	012	56,32	012	64,15	012	56,32	012	64,15	012
14	75	26	82,77	014	95,56	014	82,77	014	95,56	014	82,77	014	95,56	014
16	75	29	102,20	016	110,20	016	102,20	016	110,20	016	102,20	016	110,20	016
18	100	35	192,80	018	198,30	018	192,80	018	198,30	018	192,80	018	198,30	018
20	100	35	180,80	020	208,30	020	180,80	020	208,30	020	180,80	020	208,30	020

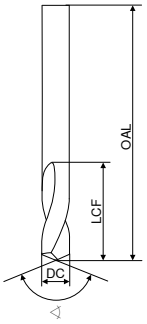
Steel	●	●	●	●	●	●
Stainless steel						
Cast iron	●	●	●	●	●	●
Non ferrous metals	●		●		●	
Heat resistant alloys						

1) DIN 6535 HA Shank

→ v_c Page 125+126

NC Spot Drill, factory standard, long

▲ spiral flutes









			90° Solid carbide T3		120° Solid carbide T3		142° Solid carbide T3	
DC_{h5}	OAL	LCF	Article no. 10 724 ...		Article no. 10 726 ...		Article no. 10 727 ...	
mm	mm	mm	EUR		EUR		EUR	
3	66	8	22,60	003 [1]	22,60	003 [1]	22,60	003 [1]
4	74	10	25,46	004 [1]	25,46	004 [1]	25,46	004 [1]
6	82	13	32,73	006	32,73	006	32,73	006
8	91	23	47,83	008	47,83	008	47,83	008
10	103	24	66,57	010	66,57	010	66,57	010
12	118	24	100,60	012	100,60	012	100,60	012
16	133	29	189,60	016	189,60	016	189,60	016
Steel			●		●		●	
Stainless steel								
Cast iron			●		●		●	
Non ferrous metals								
Heat resistant alloys								

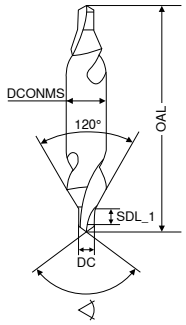
1) DIN 6535 HA Shank

→ v_c Page 126

Centre drills, DIN 333, form A

▲ spiral flutes

ZB





120°
Solid carbide
T3

DC k13	DCONMS h6	OAL	SDL_1	Article no. 10 708 ...	
mm	mm	mm	mm	EUR	
0,50	3,15	20,0	0,76	38,03	**050** 1)
0,80	3,15	20,0	1,07	38,03	**080** 1)
1,00	3,15	31,5	1,31	38,58	**100**
1,25	3,15	31,5	1,54	38,58	**125**
1,60	4,00	35,5	1,94	41,22	**160**
2,00	5,00	40,0	2,32	42,66	**200**
2,50	6,30	45,0	2,88	47,51	**250**
3,15	8,00	50,0	3,49	56,43	**315**
4,00	10,00	56,0	4,45	67,56	**400**
5,00	12,50	63,0	5,46	98,64	**500**
6,30	16,00	71,0	6,78	138,80	**630**

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

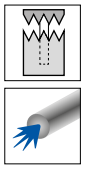
1) Single ended

→ v_c Page 125

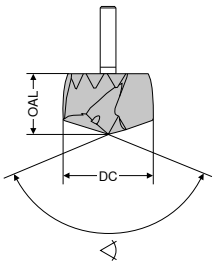
WTX – Drilling Head for Exchangeable drills

▲ extra long head type
▲ three-edged

Scope of supply:
Drill head incl. differential screw



Change Feed UNI
Ti750





140°
Solid carbide

DC m7	OAL	W2 Article no. 10 925 ... EUR	
mm	mm		
14,0	13,5	88,91	140
14,1	13,5	88,91	141
14,2	13,5	88,91	142
14,3	13,5	88,91	143
14,4	13,5	88,91	144
14,5	14,0	88,91	145
14,6	14,0	88,91	146
14,7	14,0	88,91	147
14,8	14,0	88,91	148
14,9	14,0	88,91	149
15,0	14,4	88,91	150
15,1	14,4	88,91	151
15,2	14,4	88,91	152
15,3	14,4	88,91	153
15,4	14,4	88,91	154
15,5	15,4	99,58	155
15,6	15,4	99,58	156
15,7	15,4	99,58	157
15,8	15,4	99,58	158
15,9	15,4	99,58	159
16,0	15,4	99,58	160
16,1	15,4	99,58	161
16,2	15,4	99,58	162
16,3	15,4	99,58	163
16,4	15,4	99,58	164
16,5	16,3	99,58	165
16,6	16,3	99,58	166
16,7	16,3	99,58	167
16,8	16,3	99,58	168
16,9	16,3	99,58	169
17,0	16,3	99,58	170
17,1	16,3	99,58	171
17,2	16,3	99,58	172
17,3	16,3	99,58	173
17,4	16,3	99,58	174
17,5	17,2	113,10	175
17,6	17,2	113,10	176
17,7	17,2	113,10	177
17,8	17,2	113,10	178
17,9	17,2	113,10	179
18,0	17,2	113,10	180
18,1	17,2	113,10	181
18,2	17,2	113,10	182
18,3	17,2	113,10	183
18,4	17,2	113,10	184
18,5	18,2	113,10	185
18,6	18,2	113,10	186
18,7	18,2	113,10	187
18,8	18,2	113,10	188
18,9	18,2	113,10	189
19,0	18,2	113,10	190
19,1	18,2	113,10	191
19,2	18,2	113,10	192
19,3	18,2	113,10	193
19,4	18,2	113,10	194
19,5	19,1	129,70	195
19,6	19,1	129,70	196
19,7	19,1	129,70	197
19,8	19,1	129,70	198
19,9	19,1	129,70	199
20,0	19,1	129,70	200
20,1	19,1	129,70	201
20,2	19,1	129,70	202
20,3	19,1	129,70	203
20,4	19,1	129,70	204
20,5	20,0	129,70	205
20,6	20,0	129,70	206
20,7	20,0	129,70	207
20,8	20,0	129,70	208
20,9	20,0	129,70	209
21,0	20,0	129,70	210
21,1	20,0	129,70	211
21,2	20,0	129,70	212
21,3	20,0	129,70	213
21,4	20,0	129,70	214
21,5	21,0	129,70	215
21,6	21,0	129,70	216
21,7	21,0	129,70	217
21,8	21,0	129,70	218
21,9	21,0	129,70	219
22,0	21,0	129,70	220
22,1	21,0	129,70	221
22,2	21,0	129,70	222
22,3	21,0	129,70	223
22,4	21,0	129,70	224
22,5	21,9	144,30	225
22,6	21,9	144,30	226
22,7	21,9	144,30	227
22,8	21,9	144,30	228
22,9	21,9	144,30	229
23,0	21,9	144,30	230
23,1	21,9	144,30	231
23,2	21,9	144,30	232
23,3	21,9	144,30	233
23,4	21,9	144,30	234
23,5	22,8	144,30	235
23,6	22,8	144,30	236
23,7	22,8	144,30	237
23,8	22,8	144,30	238
23,9	22,8	144,30	239
24,0	22,8	144,30	240
24,1	22,8	144,30	241
24,2	22,8	144,30	242
24,3	22,8	144,30	243
24,4	22,8	144,30	244
24,5	23,8	163,60	245
24,6	23,8	163,60	246
24,7	23,8	163,60	247
24,8	23,8	163,60	248
24,9	23,8	163,60	249
25,0	23,8	163,60	250

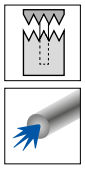
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

→ v_c Page 127

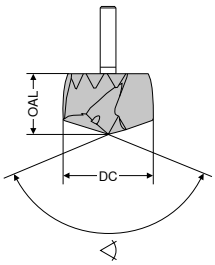
WTX – Drilling Head for Exchangeable drills

▲ extra long head type
▲ three-edged

Scope of supply:
Drill head incl. differential screw



Change Feed UNI
Ti750





140°
Solid carbide

DC m7	OAL	W2 Article no. 10 925 ...	
mm	mm	EUR	
25,1	23,8	163,60	251
25,2	23,8	163,60	252
25,3	23,8	163,60	253
25,4	23,8	163,60	254
25,5	24,7	163,60	255
25,6	24,7	163,60	256
25,7	24,7	163,60	257
25,8	24,7	163,60	258
25,9	24,7	163,60	259
26,0	24,7	163,60	260
26,1	24,7	163,60	261
26,2	24,7	163,60	262
26,3	24,7	163,60	263
26,4	24,7	163,60	264
26,5	25,6	176,40	265
26,6	25,6	176,40	266
26,7	25,6	176,40	267
26,8	25,6	176,40	268
26,9	25,6	176,40	269
27,0	25,6	176,40	270
27,1	25,6	176,40	271
27,2	25,6	176,40	272
27,3	25,6	176,40	273
27,4	25,6	176,40	274
27,5	26,6	176,40	275
27,6	26,6	176,40	276
27,7	26,6	176,40	277
27,8	26,6	176,40	278
27,9	26,6	176,40	279
28,0	26,6	176,40	280
28,1	26,6	176,40	281
28,2	26,6	176,40	282
28,3	26,6	176,40	283
28,4	26,6	176,40	284
28,5	27,5	194,60	285
28,6	27,5	194,60	286
28,7	27,5	194,60	287
28,8	27,5	194,60	288
28,9	27,5	194,60	289
29,0	27,5	194,60	290
29,1	27,5	194,60	291
29,2	27,5	194,60	292
29,3	27,5	194,60	293
29,4	27,5	194,60	294
29,5	28,4	194,60	295
29,6	28,4	194,60	296
29,7	28,4	194,60	297
29,8	28,4	194,60	298
29,9	28,4	194,60	299
30,0	28,4	194,60	300
30,1	28,4	194,60	301
30,2	28,4	194,60	302
30,3	28,4	194,60	303
30,4	28,4	194,60	304
30,5	29,3	212,50	305
30,6	29,3	212,50	306
30,7	29,3	212,50	307
30,8	29,3	212,50	308
30,9	29,3	212,50	309
31,0	29,3	212,50	310
31,1	29,3	212,50	311
31,2	29,3	212,50	312
31,3	29,3	212,50	313
31,4	29,3	212,50	314
31,5	30,3	212,50	315
31,6	30,3	212,50	316
31,7	30,3	212,50	317
31,8	30,3	212,50	318
31,9	30,3	212,50	319
32,0	30,3	212,50	320

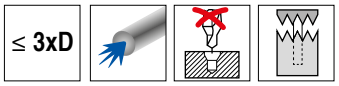
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

→ v_c Page 127

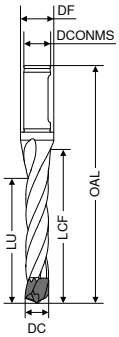
WTX – Holder for Exchangeable drills

Scope of supply:
Holder incl. blade holder and interchangeable blade

≤ 3xD



Change Feed





DC	DCONMS h6	OAL	LCF	LU	DF	torque moment	W1 Article no. 10 914 ...	
mm	mm	mm	mm	mm	mm	Nm	EUR	
14,00 - 14,49	16	120	72	48	20	0,7	254,00	140
14,50 - 14,99	16	122	74	49	20	0,7	254,00	145
15,00 - 15,49	16	124	76	51	25	0,7	254,00	150
15,50 - 16,49	20	131	81	54	25	0,7	262,40	155
16,50 - 17,49	20	135	85	58	25	0,7	262,40	165
17,50 - 18,49	20	140	90	61	25	1,3	262,40	175
18,50 - 19,49	25	150	94	64	31	1,3	309,10	185
19,50 - 20,49	25	155	99	68	31	2,0	311,90	195
20,50 - 21,49	25	159	103	71	31	2,0	341,50	205
21,50 - 22,49	25	164	108	74	31	2,0	341,50	215
22,50 - 23,49	25	168	112	78	31	2,0	374,30	225
23,50 - 24,49	25	173	117	81	31	2,0	374,30	235
24,50 - 25,49	32	182	122	84	38	3,1	421,20	245
25,50 - 26,49	32	186	126	87	38	3,1	421,20	255
26,50 - 27,49	32	191	131	91	38	3,1	421,20	265
27,50 - 28,49	32	195	135	94	38	3,1	421,20	275
28,50 - 29,49	32	200	140	97	38	5,6	485,40	285
29,50 - 30,49	32	204	144	101	38	5,6	485,40	295
30,50 - 31,49	32	209	149	104	38	5,6	531,00	305
31,50 - 32,49	32	213	153	107	38	5,6	531,00	315

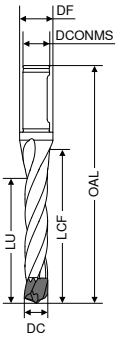
WTX – Holder for Exchangeable drills

Scope of supply:
Holder incl. blade holder and interchangeable blade

≤ 5xD



Change Feed





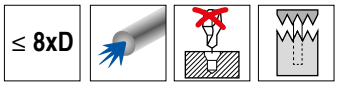
DC	DCONMS h6	OAL	LCF	LU	DF	torque moment	W1 Article no. 10 916 ...	
mm	mm	mm	mm	mm	mm	Nm	EUR	
14,00 - 14,49	16	149	101	77	20	0,7	280,50	140
14,50 - 14,99	16	152	104	79	20	0,7	280,50	145
15,00 - 15,49	16	155	107	82	25	0,7	280,50	150
15,50 - 16,49	20	164	114	87	25	0,7	303,80	155
16,50 - 17,49	20	170	120	93	25	0,7	303,80	165
17,50 - 18,49	20	177	127	98	25	1,3	303,80	175
18,50 - 19,49	25	189	133	103	31	1,3	347,50	185
19,50 - 20,49	25	196	140	109	31	2,0	350,20	195
20,50 - 21,49	25	202	146	114	31	2,0	382,20	205
21,50 - 22,49	25	209	153	119	31	2,0	382,20	215
22,50 - 23,49	25	215	159	124	31	2,0	411,60	225
23,50 - 24,49	25	222	166	130	31	2,0	411,60	235
24,50 - 25,49	32	233	173	135	38	3,1	457,60	245
25,50 - 26,49	32	239	179	140	38	3,1	457,60	255
26,50 - 27,49	32	246	186	146	38	3,1	457,60	265
27,50 - 28,49	32	252	192	151	38	3,1	457,60	275
28,50 - 29,49	32	259	199	156	38	5,6	520,70	285
29,50 - 30,49	32	265	205	162	38	5,6	520,70	295
30,50 - 31,49	32	272	212	167	38	5,6	565,40	305
31,50 - 32,49	32	278	218	172	38	5,6	565,40	315

Spare parts DC	W1 Interchangeable blade Article no. 80 022 ... EUR		Y7  Blade holder Article no. 80 020 ... EUR		W1  Torque handle Article no. 80 023 ... EUR		W2  Differential screw Article no. 10 950 ... EUR	
14,00 - 14,49	19,50	007	16,36	025	289,70	012	5,55	064
14,50 - 14,99	19,50	007	16,36	025	289,70	012	5,55	064
15,00 - 15,49	19,50	007	16,36	025	289,70	012	5,55	064
15,50 - 16,49	19,50	007	16,36	025	289,70	012	5,55	064
16,50 - 17,49	19,50	007	16,36	025	289,70	012	5,55	064
17,50 - 18,49	19,50	008	16,36	025	310,10	060	5,55	065
18,50 - 19,49	19,50	008	16,36	025	310,10	060	5,55	065
19,50 - 20,49	22,69	010	16,36	025	310,10	060	5,55	066
20,50 - 21,49	22,69	010	16,36	025	310,10	060	5,55	066
21,50 - 22,49	22,69	010	16,36	025	310,10	060	5,55	066
22,50 - 23,49	22,69	010	16,36	025	310,10	060	5,55	066
23,50 - 24,49	22,69	010	16,36	025	310,10	060	5,55	066
24,50 - 25,49	36,64	015	16,36	025	310,10	060	5,55	067
25,50 - 26,49	36,64	015	16,36	025	310,10	060	5,55	067
26,50 - 27,49	36,64	015	16,36	025	310,10	060	5,55	067
27,50 - 28,49	36,64	015	16,36	025	310,10	060	5,55	067
28,50 - 29,49	36,64	015	16,36	025	310,10	060	5,55	068
29,50 - 30,49	36,64	015	16,36	025	310,10	060	5,55	068
30,50 - 31,49	36,64	015	16,36	025	310,10	060	5,55	068
31,50 - 32,49	36,64	015	16,36	025	310,10	060	5,55	068

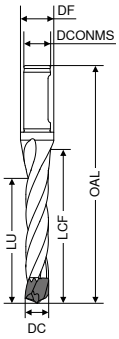
WTX – Holder for Exchangeable drills

Scope of supply:

Holder incl. blade holder and interchangeable blade









DC	DCONMS h6	OAL	LCF	LU	DF	torque moment	NEW W1 Article no. 10 917 ...	
mm	mm	mm	mm	mm	mm	Nm	EUR	
14,00 - 14,49	16	192	121	116	20	0,7	343,70	14000
14,50 - 14,99	16	197	125	120	20	0,7	343,70	14500
15,00 - 15,49	16	202	129	124	25	0,7	343,70	15000
15,50 - 16,49	20	213	137	132	25	0,7	369,20	15500
16,50 - 17,49	20	223	146	140	25	0,7	369,20	16500
17,50 - 18,49	20	232	154	148	25	1,3	369,20	17500
18,50 - 19,49	25	248	162	156	31	1,3	415,70	18500
19,50 - 20,49	25	257	171	164	31	2,0	421,40	19500
20,50 - 21,49	25	267	179	172	31	2,0	449,80	20500
21,50 - 22,49	25	276	187	180	31	2,0	449,80	21500
22,50 - 23,49	25	286	195	188	31	2,0	498,90	22500
23,50 - 24,49	25	295	204	196	31	2,0	498,90	23500
24,50 - 25,49	32	309	212	204	38	3,1	538,50	24500
25,50 - 26,49	32	319	220	212	38	3,1	538,50	25500
26,50 - 27,49	32	328	229	220	38	3,1	538,50	26500
27,50 - 28,49	32	338	237	228	38	3,1	538,50	27500
28,50 - 29,49	32	342	245	236	38	5,6	617,90	28500
29,50 - 30,49	32	352	254	244	38	5,6	617,90	29500
30,50 - 31,49	32	361	262	252	38	5,6	681,60	30500
31,50 - 32,49	32	371	270	260	38	5,6	681,60	31500

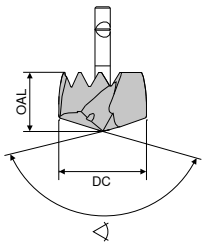
Spare parts DC	W1 Interchangeable blade Article no. 80 022 ... EUR		Y7  Blade holder Article no. 80 020 ... EUR		W1 Torque handle Article no. 80 023 ... EUR		W2 Differential screw Article no. 10 950 ... EUR	
14,00 - 14,49	19,50	007	16,36	025	289,70	012	5,55	064
14,50 - 14,99	19,50	007	16,36	025	289,70	012	5,55	064
15,00 - 15,49	19,50	007	16,36	025	289,70	012	5,55	064
15,50 - 16,49	19,50	007	16,36	025	289,70	012	5,55	064
16,50 - 17,49	19,50	007	16,36	025	289,70	012	5,55	064
17,50 - 18,49	19,50	008	16,36	025	310,10	060	5,55	065
18,50 - 19,49	19,50	008	16,36	025	310,10	060	5,55	065
19,50 - 20,49	22,69	010	16,36	025	310,10	060	5,55	066
20,50 - 21,49	22,69	010	16,36	025	310,10	060	5,55	066
21,50 - 22,49	22,69	010	16,36	025	310,10	060	5,55	066
22,50 - 23,49	22,69	010	16,36	025	310,10	060	5,55	066
23,50 - 24,49	22,69	010	16,36	025	310,10	060	5,55	066
24,50 - 25,49	36,64	015	16,36	025	310,10	060	5,55	067
25,50 - 26,49	36,64	015	16,36	025	310,10	060	5,55	067
26,50 - 27,49	36,64	015	16,36	025	310,10	060	5,55	067
27,50 - 28,49	36,64	015	16,36	025	310,10	060	5,55	067
28,50 - 29,49	36,64	015	16,36	025	310,10	060	5,55	068
29,50 - 30,49	36,64	015	16,36	025	310,10	060	5,55	068
30,50 - 31,49	36,64	015	16,36	025	310,10	060	5,55	068
31,50 - 32,49	36,64	015	16,36	025	310,10	060	5,55	068

WTX – Drilling Head for Exchangeable drills

▲ extra long head type

2

Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				





DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	EUR		EUR		EUR		EUR		EUR	
12,0	10,7	82,77	12000	82,77	120	82,77	120	82,77	120	82,77	120
12,1	10,7	82,77	12100	82,77	121	82,77	121	82,77	121	82,77	121
12,2	10,7	82,77	12200	82,77	122	82,77	122	82,77	122	82,77	122
12,3	10,7	82,77	12300	82,77	123	82,77	123	82,77	123	82,77	123
12,4	10,7	82,77	12400	82,77	124	82,77	124	82,77	124	82,77	124
12,5	10,7	82,77	12500	82,77	125	82,77	125	82,77	125	82,77	125
12,6	10,7	82,77	12600	82,77	126	82,77	126	82,77	126	82,77	126
12,7	10,7	82,77	12700	82,77	127	82,77	127	82,77	127	82,77	127
12,8	10,7	82,77	12800	82,77	128	82,77	128	82,77	128	82,77	128
12,9	10,7	82,77	12900	82,77	129	82,77	129	82,77	129	82,77	129
13,0	10,7	82,77	13000	82,77	130	82,77	130	82,77	130	82,77	130
13,1	10,7	82,77	13100	82,77	131	82,77	131	82,77	131	82,77	131
13,2	10,7	82,77	13200	82,77	132	82,77	132	82,77	132	82,77	132
13,3	10,7	82,77	13300	82,77	133	82,77	133	82,77	133	82,77	133
13,4	10,7	82,77	13400	82,77	134	82,77	134	82,77	134	82,77	134
13,5	11,3	82,77	13500	82,77	135	82,77	135	82,77	135	82,77	135
13,6	11,3	82,77	13600	82,77	136	82,77	136	82,77	136	82,77	136
13,7	11,3	82,77	13700	82,77	137	82,77	137	82,77	137	82,77	137
13,8	11,3	82,77	13800	82,77	138	82,77	138	82,77	138	82,77	138
13,9	11,3	82,77	13900	82,77	139	82,77	139	82,77	139	82,77	139
14,0	11,3	82,77	14000	82,77	140	82,77	140	82,77	140	82,77	140
14,1	11,3	82,77	14100	82,77	141	82,77	141	82,77	141	82,77	141
14,2	11,3	82,77	14200	82,77	142	82,77	142	82,77	142	82,77	142
14,3	11,3	82,77	14300	82,77	143	82,77	143	82,77	143	82,77	143
14,4	11,3	82,77	14400	82,77	144	82,77	144	82,77	144	82,77	144
14,5	11,3	82,77	14500	82,77	145	82,77	145	82,77	145	82,77	145
14,6	11,3	82,77	14600	82,77	146	82,77	146	82,77	146	82,77	146
14,7	11,3	82,77	14700	82,77	147	82,77	147	82,77	147	82,77	147
14,8	11,3	82,77	14800	82,77	148	82,77	148	82,77	148	82,77	148
14,9	11,3	82,77	14900	82,77	149	82,77	149	82,77	149	82,77	149
15,0	11,3	82,77	15000	82,77	150	82,77	150	82,77	150	82,77	150
15,1	11,3	82,77	15100	82,77	151	82,77	151	82,77	151	82,77	151
15,2	11,3	82,77	15200	82,77	152	82,77	152	82,77	152	82,77	152
15,3	11,3	82,77	15300	82,77	153	82,77	153	82,77	153	82,77	153
15,4	11,3	82,77	15400	82,77	154	82,77	154	82,77	154	82,77	154
15,5	11,9	82,77	15500	82,77	155	82,77	155	82,77	155	82,77	155
15,6	11,9	86,41	15600	86,41	156	86,41	156	86,41	156	86,41	156
15,7	11,9	86,41	15700	86,41	157	86,41	157	86,41	157	86,41	157

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

→ v_c Page 128–131

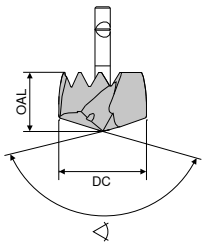
Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type

Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				





DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	EUR		EUR		EUR		EUR		EUR	
15,8	11,9	86,41	15800	86,41	158	86,41	158	86,41	158	86,41	158
15,9	11,9	86,41	15900	86,41	159	86,41	159	86,41	159	86,41	159
16,0	11,9	86,41	16000	86,41	160	86,41	160	86,41	160	86,41	160
16,1	11,9	86,41	16100	86,41	161	86,41	161	86,41	161	86,41	161
16,2	11,9	86,41	16200	86,41	162	86,41	162	86,41	162	86,41	162
16,3	11,9	86,41	16300	86,41	163	86,41	163	86,41	163	86,41	163
16,4	11,9	86,41	16400	86,41	164	86,41	164	86,41	164	86,41	164
16,5	13,4	86,41	16500	86,41	165	86,41	165	86,41	165	86,41	165
16,6	13,4	86,41	16600	86,41	166	86,41	166	86,41	166	86,41	166
16,7	13,4	86,41	16700	86,41	167	86,41	167	86,41	167	86,41	167
16,8	13,4	86,41	16800	86,41	168	86,41	168	86,41	168	86,41	168
16,9	13,4	86,41	16900	86,41	169	86,41	169	86,41	169	86,41	169
17,0	13,4	86,41	17000	86,41	170	86,41	170	86,41	170	86,41	170
17,1	13,4	86,41	17100	86,41	171	86,41	171	86,41	171	86,41	171
17,2	13,4	86,41	17200	86,41	172	86,41	172	86,41	172	86,41	172
17,3	13,4	86,41	17300	86,41	173	86,41	173	86,41	173	86,41	173
17,4	13,4	86,41	17400	86,41	174	86,41	174	86,41	174	86,41	174
17,5	13,4	86,41	17500	86,41	175	86,41	175	86,41	175	86,41	175
17,6	13,4	86,41	17600	86,41	176	86,41	176	86,41	176	86,41	176
17,7	13,4	86,41	17700	86,41	177	86,41	177	86,41	177	86,41	177
17,8	13,4	86,41	17800	86,41	178	86,41	178	86,41	178	86,41	178
17,9	13,4	86,41	17900	86,41	179	86,41	179	86,41	179	86,41	179
18,0	13,4	86,41	18000	86,41	180	86,41	180	86,41	180	86,41	180
18,1	13,4	93,57	18100	93,57	181	93,57	181	93,57	181	93,57	181
18,2	13,4	93,57	18200	93,57	182	93,57	182	93,57	182	93,57	182
18,3	13,4	93,57	18300	93,57	183	93,57	183	93,57	183	93,57	183
18,4	13,4	93,57	18400	93,57	184	93,57	184	93,57	184	93,57	184
18,5	13,4	93,57	18500	93,57	185	93,57	185	93,57	185	93,57	185
18,6	13,4	93,57	18600	93,57	186	93,57	186	93,57	186	93,57	186
18,7	13,4	93,57	18700	93,57	187	93,57	187	93,57	187	93,57	187
18,8	13,4	93,57	18800	93,57	188	93,57	188	93,57	188	93,57	188
18,9	13,4	93,57	18900	93,57	189	93,57	189	93,57	189	93,57	189
19,0	13,4	93,57	19000	93,57	190	93,57	190	93,57	190	93,57	190
19,1	13,4	93,57	19100	93,57	191	93,57	191	93,57	191	93,57	191
19,2	13,4	93,57	19200	93,57	192	93,57	192	93,57	192	93,57	192
19,3	13,4	93,57	19300	93,57	193	93,57	193	93,57	193	93,57	193
19,4	13,4	93,57	19400	93,57	194	93,57	194	93,57	194	93,57	194
19,5	13,4	93,57	19500	93,57	195	93,57	195	93,57	195	93,57	195

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

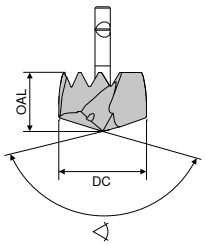
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type

2

Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				





DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	EUR		EUR		EUR		EUR		EUR	
19,6	13,4	93,57	19600	93,57	196	93,57	196	93,57	196	93,57	196
19,7	13,4	93,57	19700	93,57	197	93,57	197	93,57	197	93,57	197
19,8	13,4	93,57	19800	93,57	198	93,57	198	93,57	198	93,57	198
19,9	13,4	93,57	19900	93,57	199	93,57	199	93,57	199	93,57	199
20,0	13,4	93,57	20000	93,57	200	93,57	200	93,57	200	93,57	200
20,1	13,4	103,80	20100	103,80	201	103,80	201	103,80	201	103,80	201
20,2	13,4	103,80	20200	103,80	202	103,80	202	103,80	202	103,80	202
20,3	13,4	103,80	20300	103,80	203	103,80	203	103,80	203	103,80	203
20,4	13,4	103,80	20400	103,80	204	103,80	204	103,80	204	103,80	204
20,5	15,4	103,80	20500	103,80	205	103,80	205	103,80	205	103,80	205
20,6	15,4	103,80	20600	103,80	206	103,80	206	103,80	206	103,80	206
20,7	15,4	103,80	20700	103,80	207	103,80	207	103,80	207	103,80	207
20,8	15,4	103,80	20800	103,80	208	103,80	208	103,80	208	103,80	208
20,9	15,4	103,80	20900	103,80	209	103,80	209	103,80	209	103,80	209
21,0	15,4	103,80	21000	103,80	210	103,80	210	103,80	210	103,80	210
21,1	15,4	103,80	21100	103,80	211	103,80	211	103,80	211	103,80	211
21,2	15,4	103,80	21200	103,80	212	103,80	212	103,80	212	103,80	212
21,3	15,4	103,80	21300	103,80	213	103,80	213	103,80	213	103,80	213
21,4	15,4	103,80	21400	103,80	214	103,80	214	103,80	214	103,80	214
21,5	15,4	103,80	21500	103,80	215	103,80	215	103,80	215	103,80	215
21,6	15,4	103,80	21600	103,80	216	103,80	216	103,80	216	103,80	216
21,7	15,4	103,80	21700	103,80	217	103,80	217	103,80	217	103,80	217
21,8	15,4	103,80	21800	103,80	218	103,80	218	103,80	218	103,80	218
21,9	15,4	103,80	21900	103,80	219	103,80	219	103,80	219	103,80	219
22,0	15,4	103,80	22000	103,80	220	103,80	220	103,80	220	103,80	220
22,1	15,4	112,40	22100	112,40	221	112,40	221	112,40	221	112,40	221
22,2	15,4	112,40	22200	112,40	222	112,40	222	112,40	222	112,40	222
22,3	15,4	112,40	22300	112,40	223	112,40	223	112,40	223	112,40	223
22,4	15,4	112,40	22400	112,40	224	112,40	224	112,40	224	112,40	224
22,5	15,4	112,40	22500	112,40	225	112,40	225	112,40	225	112,40	225
22,6	15,4	112,40	22600	112,40	226	112,40	226	112,40	226	112,40	226
22,7	15,4	112,40	22700	112,40	227	112,40	227	112,40	227	112,40	227
22,8	15,4	112,40	22800	112,40	228	112,40	228	112,40	228	112,40	228
22,9	15,4	112,40	22900	112,40	229	112,40	229	112,40	229	112,40	229
23,0	15,4	112,40	23000	112,40	230	112,40	230	112,40	230	112,40	230
23,1	15,4	112,40	23100	112,40	231	112,40	231	112,40	231	112,40	231
23,2	15,4	112,40	23200	112,40	232	112,40	232	112,40	232	112,40	232
23,3	15,4	112,40	23300	112,40	233	112,40	233	112,40	233	112,40	233

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

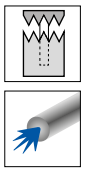
→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

Continued on next page

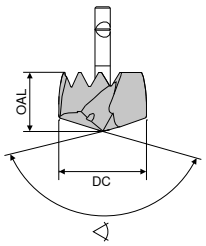
WTX – Drilling Head for Exchangeable drills

▲ extra long head type



Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB

DRAGONSKIN





DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	EUR		EUR		EUR		EUR		EUR	
23,4	15,4	112,40	23400	112,40	234	112,40	234	112,40	234	112,40	234
23,5	15,4	112,40	23500	112,40	235	112,40	235	112,40	235	112,40	235
23,6	15,4	112,40	23600	112,40	236	112,40	236	112,40	236	112,40	236
23,7	15,4	112,40	23700	112,40	237	112,40	237	112,40	237	112,40	237
23,8	15,4	112,40	23800	112,40	238	112,40	238	112,40	238	112,40	238
23,9	15,4	112,40	23900	112,40	239	112,40	239	112,40	239	112,40	239
24,0	15,4	112,40	24000	112,40	240	112,40	240	112,40	240	112,40	240
24,1	15,4	123,50	24100	123,50	241	123,50	241	123,50	241	123,50	241
24,2	15,4	123,50	24200	123,50	242	123,50	242	123,50	242	123,50	242
24,3	15,4	123,50	24300	123,50	243	123,50	243	123,50	243	123,50	243
24,4	15,4	123,50	24400	123,50	244	123,50	244	123,50	244	123,50	244
24,5	17,4	123,50	24500	123,50	245	123,50	245	123,50	245	123,50	245
24,6	17,4	123,50	24600	123,50	246	123,50	246	123,50	246	123,50	246
24,7	17,4	123,50	24700	123,50	247	123,50	247	123,50	247	123,50	247
24,8	17,4	123,50	24800	123,50	248	123,50	248	123,50	248	123,50	248
24,9	17,4	123,50	24900	123,50	249	123,50	249	123,50	249	123,50	249
25,0	17,4	123,50	25000	123,50	250	123,50	250	123,50	250	123,50	250
25,1	17,4	123,50	25100	123,50	251	123,50	251	123,50	251	123,50	251
25,2	17,4	123,50	25200	123,50	252	123,50	252	123,50	252	123,50	252
25,3	17,4	123,50	25300	123,50	253	123,50	253	123,50	253	123,50	253
25,4	17,4	123,50	25400	123,50	254	123,50	254	123,50	254	123,50	254
25,5	17,4	123,50	25500	123,50	255	123,50	255	123,50	255	123,50	255
25,6	17,4	130,00	25600	130,00	256	130,00	256	130,00	256	130,00	256
25,7	17,4	130,00	25700	130,00	257	130,00	257	130,00	257	130,00	257
25,8	17,4	130,00	25800	130,00	258	130,00	258	130,00	258	130,00	258
25,9	17,4	130,00	25900	130,00	259	130,00	259	130,00	259	130,00	259
26,0	17,4	130,00	26000	130,00	260	130,00	260	130,00	260	130,00	260
26,1	17,4	130,00	26100	130,00	261	130,00	261	130,00	261	130,00	261
26,2	17,4	130,00	26200	130,00	262	130,00	262	130,00	262	130,00	262
26,3	17,4	130,00	26300	130,00	263	130,00	263	130,00	263	130,00	263
26,4	17,4	130,00	26400	130,00	264	130,00	264	130,00	264	130,00	264
26,5	17,4	130,00	26500	130,00	265	130,00	265	130,00	265	130,00	265
26,6	17,4	130,00	26600	130,00	266	130,00	266	130,00	266	130,00	266
26,7	17,4	130,00	26700	130,00	267	130,00	267	130,00	267	130,00	267
26,8	17,4	130,00	26800	130,00	268	130,00	268	130,00	268	130,00	268
26,9	17,4	130,00	26900	130,00	269	130,00	269	130,00	269	130,00	269
27,0	17,4	130,00	27000	130,00	270	130,00	270	130,00	270	130,00	270
27,1	17,4	130,00	27100	130,00	271	130,00	271	130,00	271	130,00	271

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

→ v_c Page 128–131

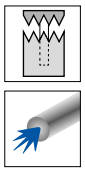
Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

Continued on next page

WTX – Drilling Head for Exchangeable drills

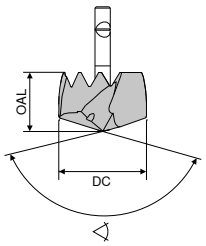
▲ extra long head type

2



Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB

DRAGONSKIN





DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	EUR		EUR		EUR		EUR		EUR	
27,2	17,4	130,00	27200	130,00	272	130,00	272	130,00	272	130,00	272
27,3	17,4	130,00	27300	130,00	273	130,00	273	130,00	273	130,00	273
27,4	17,4	130,00	27400	130,00	274	130,00	274	130,00	274	130,00	274
27,5	17,4	130,00	27500	130,00	275	130,00	275	130,00	275	130,00	275
27,6	17,4	130,00	27600	130,00	276	130,00	276	130,00	276	130,00	276
27,7	17,4	130,00	27700	130,00	277	130,00	277	130,00	277	130,00	277
27,8	17,4	130,00	27800	130,00	278	130,00	278	130,00	278	130,00	278
27,9	17,4	130,00	27900	130,00	279	130,00	279	130,00	279	130,00	279
28,0	17,4	130,00	28000	130,00	280	130,00	280	130,00	280	130,00	280
28,1	17,4	142,30	28100	142,30	281	142,30	281	142,30	281	142,30	281
28,2	17,4	142,30	28200	142,30	282	142,30	282	142,30	282	142,30	282
28,3	17,4	142,30	28300	142,30	283	142,30	283	142,30	283	142,30	283
28,4	17,4	142,30	28400	142,30	284	142,30	284	142,30	284	142,30	284
28,5	18,4	142,30	28500	142,30	285	142,30	285	142,30	285	142,30	285
28,6	18,4	142,30	28600	142,30	286	142,30	286	142,30	286	142,30	286
28,7	18,4	142,30	28700	142,30	287	142,30	287	142,30	287	142,30	287
28,8	18,4	142,30	28800	142,30	288	142,30	288	142,30	288	142,30	288
28,9	18,4	142,30	28900	142,30	289	142,30	289	142,30	289	142,30	289
29,0	18,4	142,30	29000	142,30	290	142,30	290	142,30	290	142,30	290
29,1	18,4	142,30	29100	142,30	291	142,30	291	142,30	291	142,30	291
29,2	18,4	142,30	29200	142,30	292	142,30	292	142,30	292	142,30	292
29,3	18,4	142,30	29300	142,30	293	142,30	293	142,30	293	142,30	293
29,4	18,4	142,30	29400	142,30	294	142,30	294	142,30	294	142,30	294
29,5	18,4	142,30	29500	142,30	295	142,30	295	142,30	295	142,30	295
29,6	18,4	142,30	29600	142,30	296	142,30	296	142,30	296	142,30	296
29,7	18,4	142,30	29700	142,30	297	142,30	297	142,30	297	142,30	297
29,8	18,4	142,30	29800	142,30	298	142,30	298	142,30	298	142,30	298
29,9	18,4	142,30	29900	142,30	299	142,30	299	142,30	299	142,30	299
30,0	18,4	142,30	30000	142,30	300	142,30	300	142,30	300	142,30	300
30,1	18,4	157,60	30100	157,60	301	157,60	301	157,60	301	157,60	301
30,2	18,4	157,60	30200	157,60	302	157,60	302	157,60	302	157,60	302
30,3	18,4	157,60	30300	157,60	303	157,60	303	157,60	303	157,60	303
30,4	18,4	157,60	30400	157,60	304	157,60	304	157,60	304	157,60	304
30,5	18,4	157,60	30500	157,60	305	157,60	305	157,60	305	157,60	305
30,6	18,4	157,60	30600	157,60	306	157,60	306	157,60	306	157,60	306
30,7	18,4	157,60	30700	157,60	307	157,60	307	157,60	307	157,60	307
30,8	18,4	157,60	30800	157,60	308	157,60	308	157,60	308	157,60	308
30,9	18,4	157,60	30900	157,60	309	157,60	309	157,60	309	157,60	309

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

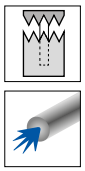
→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

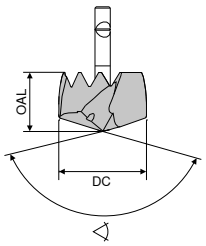
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type



Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				





DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	EUR		EUR		EUR		EUR		EUR	
31,0	18,4	157,60	31000	157,60	310	157,60	310	157,60	310	157,60	310
31,1	18,4	157,60	31100	157,60	311	157,60	311	157,60	311	157,60	311
31,2	18,4	157,60	31200	157,60	312	157,60	312	157,60	312	157,60	312
31,3	18,4	157,60	31300	157,60	313	157,60	313	157,60	313	157,60	313
31,4	18,4	157,60	31400	157,60	314	157,60	314	157,60	314	157,60	314
31,5	18,4	157,60	31500	157,60	315	157,60	315	157,60	315	157,60	315
31,6	18,4	157,60	31600	157,60	316	157,60	316	157,60	316	157,60	316
31,7	18,4	157,60	31700	157,60	317	157,60	317	157,60	317	157,60	317
31,8	18,4	157,60	31800	157,60	318	157,60	318	157,60	318	157,60	318
31,9	18,4	157,60	31900	157,60	319	157,60	319	157,60	319	157,60	319
32,0	18,4	157,60	32000	157,60	320	157,60	320	157,60	320	157,60	320
32,5	24,3	219,30	32500	219,30	325						
33,0	24,3	219,30	33000	219,30	330						
33,5	24,3	219,30	33500	219,30	335						
34,0	24,3	219,30	34000	219,30	340						
34,5	24,3	219,30	34500	219,30	345						
35,0	24,3	219,30	35000	219,30	350						
35,5	26,3	249,10	35500	249,10	355						
36,0	26,3	249,10	36000	249,10	360						
36,5	26,3	249,10	36500	249,10	365						
37,0	26,3	249,10	37000	249,10	370						
37,5	26,3	249,10	37500	249,10	375						
38,0	26,3	249,10	38000	249,10	380						
38,5	26,3	271,10	38500	271,10	385						
39,0	26,3	271,10	39000	271,10	390						
39,5	26,3	271,10	39500	271,10	395						
40,0	26,3	271,10	40000	271,10	400						
40,5	26,3	271,10	40500	271,10	405						
41,0	26,3	271,10	41000	271,10	410						
Steel		●		●		○					
Stainless steel						●					
Cast iron		●		●		○		●			
Non ferrous metals										●	
Heat resistant alloys											

→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

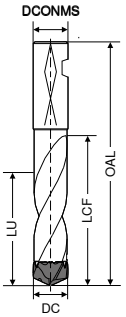
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:

Holder incl. screw driver

≤ 1xD | Change





HB

DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 911 ...	
mm	mm	mm	mm	mm	Nm	EUR	
12,00 - 12,49	14	81	29	12,5	1,0	199,20	120
12,50 - 12,99	14	81	29	13,0	1,0	199,20	125
13,00 - 13,49	14	81	31	13,5	1,0	199,20	130
13,50 - 13,99	16	86	32	14,0	1,3	199,20	135
14,00 - 14,49	16	86	33	14,5	1,3	199,20	140
14,50 - 14,99	16	91	34	15,0	1,3	199,20	145
15,00 - 15,49	16	91	36	15,5	1,3	199,20	150
15,50 - 16,49	18	92	38	16,5	1,3	206,50	160
15,50 - 16,49	20	97	38	16,5	1,3	206,50	161
16,50 - 17,49	18	94	40	17,5	3,5	206,50	165
16,50 - 17,49	20	99	40	17,5	3,5	206,50	166
17,50 - 18,49	18	99	43	18,5	3,5	206,50	175
17,50 - 18,49	20	104	43	18,5	3,5	206,50	176
18,50 - 19,49	20	99	45	19,5	3,5	244,30	185
19,50 - 20,49	20	104	47	20,5	3,5	244,30	195
20,50 - 21,49	25	111	49	21,5	3,5	269,50	205
21,50 - 22,49	25	116	52	22,5	3,5	269,50	215
22,50 - 23,49	25	116	54	23,5	3,5	295,70	225
23,50 - 24,49	25	121	56	24,5	4,0	295,70	235
24,50 - 25,49	25	123	59	25,5	4,0	320,80	245
25,50 - 26,49	25	123	61	26,5	4,0	320,80	255
26,50 - 27,49	25	128	63	27,5	4,0	320,80	265
27,50 - 28,49	25	128	66	28,5	4,0	320,80	275
28,50 - 29,49	32	134	68	29,5	4,0	372,30	285
29,50 - 30,49	32	139	70	30,5	4,0	372,30	295
30,50 - 31,49	32	139	75	31,5	4,0	411,10	305
31,50 - 32,49	32	139	75	32,5	4,0	411,10	315
32,50 - 33,49	32	150	78	33,5	6,0	442,50	325
33,50 - 34,49	32	150	79	34,5	6,0	442,50	335
34,50 - 35,49	32	150	82	35,5	6,0	442,50	345
35,50 - 37,49	32	152	86	37,5	6,0	510,70	355
37,50 - 39,49	32	157	91	39,5	6,0	528,50	375
39,50 - 41,00	32	167	95	41,5	6,0	542,10	395

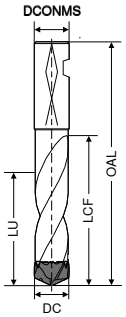
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:

Holder incl. screw driver

≤ 3xD | Change





HB

DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 913 ...	
mm	mm	mm	mm	mm	Nm	EUR	
12,00 - 12,49	14	100	53	38,0	1,0	220,20	120
12,50 - 12,99	14	105	55	39,0	1,0	220,20	125
13,00 - 13,49	14	105	57	40,0	1,0	220,20	130
13,50 - 13,99	16	110	59	42,0	1,3	220,20	135
14,00 - 14,49	16	115	61	43,0	1,3	220,20	140
14,50 - 14,99	16	115	63	45,0	1,3	220,20	145
15,00 - 15,49	16	115	65	46,0	1,3	220,20	150
15,50 - 16,49	18	120	70	50,0	1,3	225,50	160
15,50 - 16,49	20	125	70	50,0	1,3	225,50	161
16,50 - 17,49	18	125	74	53,0	3,5	225,50	165
16,50 - 17,49	20	130	74	50,0	3,5	225,50	166
17,50 - 18,49	18	130	78	55,0	3,5	225,50	175
17,50 - 18,49	20	135	78	50,0	3,5	225,50	176
18,50 - 19,49	20	135	82	58,0	3,5	269,50	185
19,50 - 20,49	20	140	87	62,0	3,5	269,50	195
20,50 - 21,49	25	150	91	65,0	3,5	299,90	205
21,50 - 22,49	25	155	95	67,0	3,5	299,90	215
22,50 - 23,49	25	160	99	70,0	3,5	327,10	225
23,50 - 24,49	25	165	103	73,0	3,5	327,10	235
24,50 - 25,49	25	165	108	77,0	4,0	356,60	245
25,50 - 26,49	25	175	112	80,0	4,0	356,60	255
26,50 - 27,49	25	175	116	82,0	4,0	356,60	265
27,50 - 28,49	25	180	120	85,0	4,0	356,60	275
28,50 - 29,49	32	190	124	88,0	4,0	413,10	285
29,50 - 30,49	32	195	129	92,0	4,0	413,10	295
30,50 - 31,49	32	195	133	94,0	4,0	456,20	305
31,50 - 32,49	32	200	137	97,0	4,0	456,20	315
32,50 - 33,49	32	210	144	100,5	6,0	515,90	325
33,50 - 34,49	32	215	148	103,5	6,0	515,90	335
34,50 - 35,49	32	220	153	106,5	6,0	515,90	345
35,50 - 37,49	32	227	161	112,5	6,0	592,40	355
37,50 - 39,49	32	237	170	118,5	6,0	615,60	375
39,50 - 41,00	32	247	178	124,5	6,0	630,20	395

Spare parts for Exchangeable Head Drill-Ø



Screw driver



Grub screw

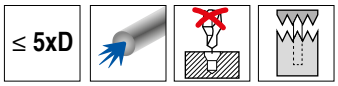
	Y7 Article no. 80 950 ...			W1 Article no. 10 950 ...	
	EUR			EUR	
12,00 - 12,49	SW 1,3	3,29	132	M2,5 x 0,45 x 5	2,16	025
12,50 - 13,49	SW 1,3	3,29	132	M2,5 x 0,45 x 6	2,16	026
13,50 - 14,49	SW 1,5	4,11	133	M3 x 0,5 x 6	2,16	031
14,50 - 16,49	SW 1,5	4,11	133	M3 x 0,5 x 7	2,16	030
16,50 - 20,49	SW 2	3,91	134	M4 x 0,5 x 7,5	2,16	040
20,50 - 24,49	SW 2	3,91	134	M4 x 0,5 x 10	2,16	041
24,50 - 28,49	SW 2,5	3,76	135	M5 x 0,5 x 11	2,16	050
28,50 - 32,49	SW 2,5	3,76	135	M5 x 0,5 x 14	2,16	051
32,50 - 35,49	SW 3	3,76	136	M6 x 0,5 x 16	3,91	060
35,50 - 39,49	SW 3	3,76	136	M6 x 0,5 x 18	3,91	061
39,50 - 41,00	SW 3	3,76	136	M6 x 0,5 x 20	3,91	062

WTX – Holder for Exchangeable drills

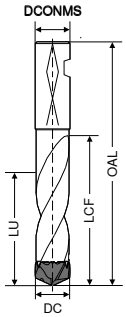
▲ with radial teeth

Scope of supply:

Holder incl. screw driver











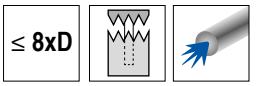
DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 915 ...	
mm	mm	mm	mm	mm	Nm	EUR	
12,00 - 12,49	14	125	78	62,0	1,0	250,60	120
12,50 - 12,99	14	130	81	65,0	1,0	250,60	125
13,00 - 13,49	14	130	84	67,0	1,0	250,60	130
13,50 - 13,99	16	140	88	70,0	1,3	250,60	135
14,00 - 14,49	16	140	90	72,0	1,3	250,60	140
14,50 - 14,99	16	145	94	75,0	1,3	250,60	145
15,00 - 15,49	16	145	96	77,0	1,3	250,60	150
15,50 - 16,49	18	155	103	82,0	1,3	269,50	160
15,50 - 16,49	20	160	103	82,0	1,3	269,50	161
16,50 - 17,49	18	160	109	87,0	3,5	269,50	165
16,50 - 17,49	20	165	109	87,0	3,5	269,50	166
17,50 - 18,49	18	165	115	92,0	3,5	269,50	175
17,50 - 18,49	20	170	115	92,0	3,5	269,50	176
18,50 - 19,49	20	175	121	97,0	3,5	313,50	185
19,50 - 20,49	20	180	128	102,0	3,5	313,50	195
20,50 - 21,49	25	195	134	107,0	3,5	341,80	205
21,50 - 22,49	25	200	140	112,0	3,5	341,80	215
22,50 - 23,49	25	205	146	117,0	3,5	370,10	225
23,50 - 24,49	25	210	152	122,0	3,5	370,10	235
24,50 - 25,49	25	220	159	127,0	4,0	397,40	245
25,50 - 26,49	25	225	165	132,0	4,0	397,40	255
26,50 - 27,49	25	230	171	137,0	4,0	397,40	265
27,50 - 28,49	25	240	177	142,0	4,0	397,40	275
28,50 - 29,49	32	250	183	146,0	4,0	456,20	285
29,50 - 30,49	32	255	190	152,0	4,0	456,20	295
30,50 - 31,49	32	260	196	157,0	4,0	498,00	305
31,50 - 32,49	32	265	202	162,0	4,0	498,00	315
32,50 - 33,49	32	275	210	167,5	6,0	583,00	325
33,50 - 34,49	32	285	217	172,5	6,0	583,00	335
34,50 - 35,49	32	290	224	177,5	6,0	583,00	345
35,50 - 37,49	32	302	236	187,5	6,0	655,40	355
37,50 - 39,49	32	317	249	197,5	6,0	680,50	375
39,50 - 41,00	32	327	261	207,5	6,0	695,20	395

WTX – Holder for Exchangeable drills

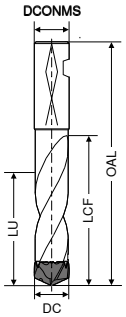
▲ with radial teeth

Scope of supply:

Holder incl. screw driver











DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 918 ...	
mm	mm	mm	mm	mm	Nm	EUR	
12,00 - 12,49	14	165	116	100	1,0	307,30	120
12,50 - 12,99	14	170	121	104	1,0	307,30	125
13,00 - 13,49	14	175	126	108	1,0	307,30	130
13,50 - 13,99	16	180	129	111	1,3	307,30	135
14,00 - 14,49	16	185	134	115	1,3	307,30	140
14,50 - 14,99	16	190	139	120	1,3	307,30	145
15,00 - 15,49	16	195	144	124	1,3	307,30	150
15,50 - 16,49	18	205	152	131	1,3	313,50	160
15,50 - 16,49	20	210	152	131	1,3	313,50	161
16,50 - 17,49	18	215	161	138	3,5	313,50	165
16,50 - 17,49	20	220	161	138	3,5	313,50	166
17,50 - 18,49	18	220	171	147	3,5	313,50	175
17,50 - 18,49	20	225	171	147	3,5	313,50	176
18,50 - 19,49	20	235	180	155	3,5	356,60	185
19,50 - 20,49	20	240	189	163	3,5	356,60	195
20,50 - 21,49	25	260	198	170	3,5	385,90	205
21,50 - 22,49	25	270	207	178	3,5	385,90	215
22,50 - 23,49	25	275	217	187	3,5	427,90	225
23,50 - 24,49	25	285	226	194	3,5	427,90	235
24,50 - 25,49	25	295	235	202	4,0	483,40	245
25,50 - 26,49	25	305	244	210	4,0	483,40	255
26,50 - 27,49	25	315	253	218	4,0	483,40	265
27,50 - 28,49	25	325	263	226	4,0	483,40	275
28,50 - 29,49	32	340	272	234	4,0	554,70	285
29,50 - 30,49	32	345	281	242	4,0	554,70	295
30,50 - 31,49	32	355	290	249	4,0	612,40	305
31,50 - 32,00	32	360	299	257	4,0	612,40	315

Spare parts for Exchangeable Head Drill-Ø



Screw driver



Grub screw

		Y7 Article no. 80 950 ... EUR			W1 Article no. 10 950 ... EUR	
12,00 - 12,49	SW 1,3	3,29	132	M2,5 x 0,45 x 5	2,16	025
12,50 - 13,49	SW 1,3	3,29	132	M2,5 x 0,45 x 6	2,16	026
13,50 - 14,49	SW 1,5	4,11	133	M3 x 0,5 x 6	2,16	031
14,50 - 16,49	SW 1,5	4,11	133	M3 x 0,5 x 7	2,16	030
16,50 - 20,49	SW 2	3,91	134	M4 x 0,5 x 7,5	2,16	040
20,50 - 24,49	SW 2	3,91	134	M4 x 0,5 x 10	2,16	041
24,50 - 28,49	SW 2,5	3,76	135	M5 x 0,5 x 11	2,16	050
28,50 - 32,49	SW 2,5	3,76	135	M5 x 0,5 x 14	2,16	051
32,50 - 35,49	SW 3	3,76	136	M6 x 0,5 x 16	3,91	060
35,50 - 39,49	SW 3	3,76	136	M6 x 0,5 x 18	3,91	061
39,50 - 41,00	SW 3	3,76	136	M6 x 0,5 x 20	3,91	062

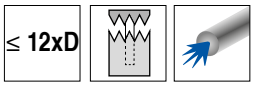
WTX – Holder for Exchangeable drills

2

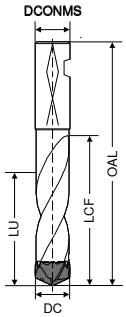
▲ with radial teeth

Scope of supply:

Holder incl. screw driver











DC	DCONMS h6	OAL	LCF	LU	torque moment	NEW W1 Article no. 10 912 ...	
mm	mm	mm	mm	mm	Nm	EUR	
12,00 - 12,49	14	210	162	150	1,0	448,00	12000
12,50 - 12,99	14	216	168	156	1,0	448,00	12500
13,00 - 13,49	14	223	175	162	1,0	448,00	13000
13,50 - 13,99	16	235	182	168	1,3	448,00	13500
14,00 - 14,49	16	242	189	174	1,3	448,00	14000
14,50 - 14,99	16	248	195	180	1,3	448,00	14500
15,00 - 15,49	16	255	202	186	1,3	448,00	15000
15,50 - 16,49	18	262	209	198	1,3	488,10	15500
16,50 - 17,49	18	275	222	210	3,5	488,10	16500
17,50 - 18,49	18	289	236	222	3,5	488,10	17500
18,50 - 19,49	20	304	249	234	3,5	591,40	18500
19,50 - 20,49	20	318	236	246	3,5	591,40	19500
20,50 - 21,49	25	337	276	258	3,5	638,80	20500
21,50 - 22,49	25	351	290	270	3,5	638,80	21500
22,50 - 23,49	25	364	303	282	3,5	709,80	22500
23,50 - 24,49	25	378	317	294	3,5	709,80	23500
24,50 - 25,49	25	391	330	306	4,0	804,60	24500
25,50 - 26,49	25	405	344	318	4,0	804,60	25500
26,50 - 27,49	25	418	357	330	4,0	804,60	26500
27,50 - 28,49	25	432	371	342	4,0	804,60	27500
28,50 - 29,49	32	449	384	354	4,0	922,70	28500
29,50 - 30,49	32	463	398	366	4,0	922,70	29500
30,50 - 31,49	32	476	411	378	4,0	1.018,00	30500
31,50 - 32,00	32	490	425	390	4,0	1.018,00	31500

Spare parts for Exchangeable Head Drill-Ø

		Y7 Screw driver Article no. 80 950 ... EUR			W1 Grub screw Article no. 10 950 ... EUR	
12,00 - 12,49	SW 1,3	3,29	132	M2,5 x 0,45 x 5	2,16	025
12,50 - 13,49	SW 1,3	3,29	132	M2,5 x 0,45 x 6	2,16	026
13,50 - 14,49	SW 1,5	4,11	133	M3 x 0,5 x 6	2,16	031
14,50 - 16,49	SW 1,5	4,11	133	M3 x 0,5 x 7	2,16	030
16,50 - 20,49	SW 2	3,91	134	M4 x 0,5 x 7,5	2,16	040
20,50 - 24,49	SW 2	3,91	134	M4 x 0,5 x 10	2,16	041
24,50 - 28,49	SW 2,5	3,76	135	M5 x 0,5 x 11	2,16	050
28,50 - 32,49	SW 2,5	3,76	135	M5 x 0,5 x 14	2,16	051
32,50 - 35,49	SW 3	3,76	136	M6 x 0,5 x 16	3,91	060
35,50 - 39,49	SW 3	3,76	136	M6 x 0,5 x 18	3,91	061
39,50 - 41,00	SW 3	3,76	136	M6 x 0,5 x 20	3,91	062

MultiChange Programme Overview

The highly stable „MultiChange“ exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Reaming and countersinking

- Through hole reamers
  Ø 8–30,2 mm incl. special diameters / ZEFP* 4–6
- Blind hold reamers
  Ø 12,2–30,2 mm incl. special diameters / ZEFP* 6

→ **Chapter 4, Reaming and countersinking**

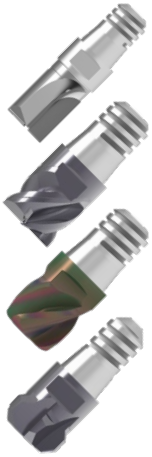


*ZEFP = Number of teeth

Solid carbide milling cutters

- PCD shoulder mills
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 2
- Solid carbide shoulder mills
  Type N, PCR-UNI, PCR-ALU / Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide rough and finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 4–6
- Solid carbide finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide high-feed cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide ball-nosed end mills
  Ø 10, 12, 16, 20 mm / ZEFP* 4
- Solid carbide torus bull nose milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide quarter round cutter
  Ø 8, 10, 12, 16, 20 mm
- Solid carbide deburring cutters
  Ø 10, 12, 16, 20 mm / ZEFP* 4+6

→ **Chapter 14, Solid carbide milling cutters**



*ZEFP = Number of teeth

Tool holder



- Steel holder, extra short
  Cylindrical / Tapered 87°
  Length 60–90 mm
  for KLG: 8, 10, 12, 16, 20 mm



- Short holder steel/Solid carbide
  Cylindrical
  Length 85–120 mm
  for KLG: 8, 10, 12, 16, 20 mm



- Holder steel/Solid carbide, short
  87° taper
  Length 85–120 mm
  for KLG: 8, 10, 12, 16, 20 mm



- Solid carbide holder, medium
  Cylindrical / Tapered 87°
  Length 110–150 mm
  for KLG: 8, 10, 12, 16, 20 mm



- Holder steel/Solid carbide, long
  Cylindrical
  Length 150–200 mm
  for KLG: 8, 10, 12, 16, 20 mm



- Holder steel/Solid carbide, long
  87° taper
  Length 150–200 mm
  for KLG: 8, 10, 12, 16, 20 mm

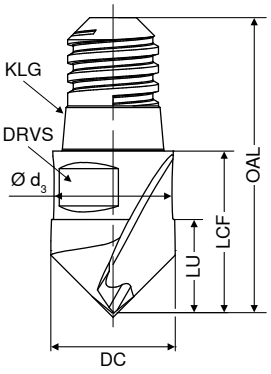


- Steel/Solid carbide holder, extra long
  Cylindrical
  Length 200–250 mm
  for KLG: 16 and 20 mm

→ **Chapter 17, Accessories**

MultiChange – NC Spot Drill

- ▲ KLG = Coupling Size
- ▲ TQX = Torque Moment
- ▲ NOF = No. of cutting edges





DC mm	KLG	LU mm	d_3 mm	LCF mm	OAL mm	NOF	DRVS mm	TQX Nm	$a_{p\,max}$ mm	◁ 90° Solid carbide T7 Article no. 10 709 ... EUR		◁ 120° Solid carbide T7 Article no. 10 712 ... EUR		◁ 142° Solid carbide T7 Article no. 10 714 ... EUR	
8	06	6,0	7,8	11	20,4	2	6	5,0	4	42,21	**080**	42,21	**080**	42,21	**080**
10	08	7,5	9,8	13	26,9	2	8	12,5	5	46,61	**100**	46,61	**100**	46,61	**100**
12	10	9,0	11,8	16	30,1	2	10	15,0	6	59,74	**120**	59,74	**120**	59,74	**120**
16	12	12,0	15,8	20	37,3	2	13	20,0	8	84,75	**160**	84,75	**160**	84,75	**160**
20	16	15,0	19,8	25	47,2	2	16	25,0	10	123,50	**200**	123,50	**200**	123,50	**200**

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys			

→ v_c Page 125

Torque wrench should be used for coupling sizes 06 and 08.

For unstable applications, the cutting data should be reduced.

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values – WTX – Ti

Index	Drilling depth 3xD Ti 10 786 ...						Drilling depth 5xD Ti 10 787 ...					
	v_c m/min with through coolant	Ø 4–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 4–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1	**75**	0,08	0,12	0,15	0,2	0,25	75	0,08	0,12	0,15	0,2	0,25
2.2	**75**	0,08	0,12	0,15	0,2	0,25	75	0,08	0,12	0,15	0,2	0,25
2.3	**65**	0,08	0,12	0,15	0,2	0,25	65	0,08	0,12	0,15	0,2	0,25
2.4	**65**	0,08	0,12	0,15	0,2	0,25	65	0,08	0,12	0,15	0,2	0,25
2.5	**70**	0,08	0,12	0,15	0,2	0,25	70	0,08	0,12	0,15	0,2	0,25
2.6	**70**	0,08	0,12	0,15	0,2	0,25	70	0,08	0,12	0,15	0,2	0,25
2.7	**40**	0,04	0,08	0,12	0,16	0,2	40	0,04	0,08	0,12	0,16	0,2
3.1												
3.2												
3.3												
3.4												
3.5												
3.6												
3.7												
3.8												
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11												
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.2	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.3	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.4	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.5	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.6	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.7	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.8	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.9	**45**	0,04	0,08	0,12	0,16	0,2	**45**	0,04	0,08	0,12	0,16	0,2
5.10	**40**	0,04	0,08	0,12	0,16	0,2	**40**	0,04	0,08	0,12	0,16	0,2
5.11	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – Speed

Index	Drilling depth 3xD Speed UNI 10 781 ...						Drilling depth 5xD Speed UNI 10 771 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**200**	0,15	0,20	0,26	0,31	0,35	**200**	0,14	0,19	0,24	0,29	0,32
1.2	**240**	0,25	0,33	0,42	0,50	0,56	**240**	0,23	0,30	0,38	0,46	0,52
1.3	**200**	0,19	0,25	0,33	0,39	0,44	**200**	0,18	0,23	0,30	0,36	0,40
1.4	**160**	0,17	0,22	0,29	0,35	0,39	**160**	0,15	0,20	0,26	0,32	0,36
1.5	**180**	0,19	0,25	0,33	0,39	0,44	**180**	0,18	0,23	0,30	0,36	0,40
1.6	**160**	0,17	0,22	0,29	0,35	0,39	**160**	0,15	0,20	0,26	0,32	0,36
1.7	**160**	0,17	0,22	0,29	0,35	0,39	**160**	0,15	0,20	0,26	0,32	0,36
1.8	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.9	**180**	0,19	0,25	0,33	0,39	0,44	**180**	0,18	0,23	0,30	0,36	0,40
1.10	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.11	**100**	0,12	0,16	0,21	0,25	0,28	**100**	0,11	0,15	0,19	0,23	0,26
1.12	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.13	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.14	**100**	0,12	0,16	0,21	0,25	0,28	**100**	0,11	0,15	0,19	0,23	0,26
1.15	**100**	0,14	0,18	0,23	0,28	0,31	**100**	0,13	0,17	0,22	0,26	0,29
1.16	**100**	0,14	0,18	0,23	0,28	0,31	**100**	0,13	0,17	0,22	0,26	0,29
2.1	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.2	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.3	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.4	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.5	**60**	0,08	0,10	0,13	0,16	0,20	**60**	0,08	0,10	0,13	0,16	0,20
2.6	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.7	**60**	0,08	0,10	0,13	0,16	0,20	**60**	0,08	0,10	0,13	0,16	0,20
3.1	**140**	0,24	0,31	0,39	0,47	0,54	**140**	0,24	0,31	0,39	0,47	0,54
3.2	**100**	0,21	0,27	0,35	0,42	0,47	**100**	0,21	0,27	0,35	0,42	0,47
3.3	**120**	0,27	0,35	0,45	0,54	0,60	**120**	0,27	0,35	0,45	0,54	0,60
3.4	**75**	0,21	0,27	0,35	0,42	0,47	**75**	0,21	0,27	0,35	0,42	0,47
3.5	**170**	0,30	0,39	0,49	0,59	0,67	**170**	0,30	0,39	0,49	0,59	0,67
3.6	**140**	0,27	0,35	0,45	0,54	0,60	**140**	0,27	0,35	0,45	0,54	0,60
3.7	**170**	0,27	0,35	0,45	0,54	0,60	**170**	0,27	0,35	0,45	0,54	0,60
3.8	**140**	0,21	0,27	0,35	0,42	0,47	**140**	0,21	0,27	0,35	0,42	0,47
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11	200	0,24	0,31	0,39	0,47	0,54	200	0,24	0,31	0,39	0,47	0,54
4.12	200	0,21	0,27	0,35	0,42	0,47	200	0,21	0,27	0,35	0,42	0,47
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1	50	0,10	0,13	0,17	0,20	0,23	50	0,09	0,12	0,15	0,19	0,21
6.2	40	0,06	0,08	0,11	0,13	0,15	40	0,06	0,08	0,10	0,12	0,13
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 8xD Speed UNI 10 782 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**170**	0,13	0,17	0,22	0,26	0,30
1.2	**205**	0,23	0,30	0,38	0,46	0,52
1.3	**170**	0,18	0,23	0,30	0,36	0,40
1.4	**135**	0,15	0,20	0,26	0,32	0,36
1.5	**155**	0,18	0,23	0,30	0,36	0,40
1.6	**135**	0,15	0,20	0,26	0,32	0,36
1.7	**135**	0,15	0,20	0,26	0,32	0,36
1.8	**100**	0,13	0,17	0,22	0,26	0,29
1.9	**155**	0,18	0,23	0,30	0,36	0,40
1.10	**100**	0,13	0,17	0,22	0,26	0,29
1.11	**85**	0,11	0,15	0,19	0,23	0,26
1.12	**100**	0,13	0,17	0,22	0,26	0,29
1.13	**100**	0,13	0,17	0,22	0,26	0,29
1.14	**85**	0,11	0,15	0,19	0,23	0,26
1.15	**85**	0,13	0,17	0,22	0,26	0,29
1.16	**85**	0,13	0,17	0,22	0,26	0,29
2.1	**65**	0,09	0,12	0,15	0,19	0,23
2.2	**65**	0,09	0,12	0,15	0,19	0,23
2.3	**65**	0,09	0,12	0,15	0,19	0,23
2.4	**65**	0,09	0,12	0,15	0,19	0,23
2.5	**60**	0,08	0,10	0,13	0,16	0,20
2.6	**65**	0,09	0,12	0,15	0,19	0,23
2.7	**60**	0,08	0,10	0,13	0,16	0,20
3.1	**125**	0,24	0,31	0,39	0,47	0,54
3.2	**100**	0,21	0,27	0,35	0,42	0,47
3.3	**120**	0,27	0,35	0,45	0,54	0,60
3.4	**75**	0,21	0,27	0,35	0,42	0,47
3.5	**170**	0,30	0,39	0,49	0,59	0,67
3.6	**140**	0,27	0,35	0,45	0,54	0,60
3.7	**170**	0,27	0,35	0,45	0,54	0,60
3.8	**140**	0,21	0,27	0,35	0,42	0,47
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	200	0,24	0,31	0,39	0,47	0,54
4.12	200	0,21	0,27	0,35	0,42	0,47
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1	40	0,10	0,13	0,17	0,20	0,23
6.2	30	0,06	0,08	0,11	0,13	0,15
6.3						
6.4						
6.5						

Drilling depth 5xD Speed VA 10 773 ...					
v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
200	0,10	0,13	0,17	0,20	0,23
240	0,17	0,21	0,27	0,33	0,37
200	0,13	0,17	0,21	0,26	0,29
160	0,11	0,14	0,19	0,23	0,25
180	0,13	0,17	0,21	0,26	0,29
160	0,11	0,14	0,19	0,23	0,25
160	0,11	0,14	0,19	0,23	0,25
120	0,09	0,12	0,15	0,18	0,21
180	0,13	0,17	0,21	0,26	0,29
120	0,09	0,12	0,15	0,18	0,21
100	0,08	0,11	0,14	0,16	0,18
120	0,09	0,12	0,15	0,18	0,21
120	0,09	0,12	0,15	0,18	0,21
100	0,08	0,11	0,14	0,16	0,18
100	0,09	0,12	0,15	0,18	0,21
100	0,09	0,12	0,15	0,18	0,21
90	0,10	0,13	0,17	0,20	0,23
75	0,08	0,11	0,14	0,18	0,20
90	0,08	0,10	0,13	0,16	0,18
60	0,08	0,10	0,13	0,16	0,18
65	0,08	0,10	0,13	0,16	0,18
75	0,08	0,11	0,14	0,18	0,20
50	0,07	0,09	0,12	0,14	0,16
140	0,17	0,22	0,28	0,34	0,38
100	0,15	0,20	0,25	0,30	0,34
120	0,19	0,25	0,32	0,38	0,43
75	0,15	0,20	0,25	0,30	0,34
170	0,22	0,28	0,35	0,42	0,48
140	0,19	0,25	0,32	0,38	0,43
170	0,19	0,25	0,32	0,38	0,43
140	0,15	0,20	0,25	0,30	0,34
200	0,24	0,31	0,39	0,47	0,54
200	0,21	0,27	0,35	0,42	0,47
50	0,06	0,08	0,10	0,12	0,13
25	0,06	0,08	0,10	0,12	0,13
25	0,06	0,08	0,10	0,12	0,13
25	0,06	0,08	0,10	0,12	0,13
25	0,06	0,08	0,10	0,12	0,13
25	0,06	0,08	0,10	0,12	0,13
50	0,06	0,08	0,10	0,12	0,13
15	0,06	0,08	0,10	0,12	0,13
50	0,12	0,16	0,20	0,25	0,28
40	0,15	0,19	0,25	0,31	0,35
40	0,12	0,16	0,20	0,25	0,28

Cutting data standard values – WTX – Feed

		Drilling depth 5xD Feed UNI 10 789 ...							
Index	v_c m/min with through coolant	Ø 4–6 f mm/rev.	Ø 6–7 f mm/rev.	Ø 7–8 f mm/rev.	Ø 8–10 f mm/rev.	Ø 10–12 f mm/rev.	Ø 12–15 f mm/rev.	Ø 15–17 f mm/rev.	Ø 17–20 f mm/rev.
1.1	**100**	0,27	0,31	0,35	0,40	0,44	0,49	0,54	0,56
1.2	**120**	0,45	0,51	0,57	0,64	0,71	0,78	0,86	0,90
1.3	**100**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.4	**80**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.5	**90**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.6	**80**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.7	**80**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.8	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.9	**90**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.10	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.11	**50**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.12	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.13	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.14	**50**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.15	**50**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.16	**50**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
2.1	**65**	0,14	0,16	0,18	0,21	0,23	0,26	0,28	0,30
2.2	**55**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.3	**65**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.4	**45**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.5	**40**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.6	**55**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.7	**40**	0,10	0,12	0,13	0,15	0,17	0,18	0,20	0,21
3.1	**120**	0,38	0,42	0,47	0,53	0,59	0,65	0,71	0,76
3.2	**85**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.3	**110**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.4	**75**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.5	**140**	0,47	0,53	0,59	0,67	0,73	0,81	0,89	0,95
3.6	**115**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.7	**140**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.8	**115**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
4.1	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.2	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.3	250	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.4	220	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.5	180	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.6									
4.7									
4.8	120	0,29	0,31	0,35	0,40	0,44	0,48	0,52	0,58
4.9	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.10	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.11	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.12	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	v_c m/min with through coolant	Hole depth 8xD and 12xD Feed UNI 10 794 ..., 10 796 ... Ø 4–6 f mm/rev.	Ø 6–7 f mm/rev.	Ø 7–8 f mm/rev.	Ø 8–10 f mm/rev.	Ø 10–12 f mm/rev.	Ø 12–15 f mm/rev.	Ø 15–17 f mm/rev.	Ø 17–20 f mm/rev.
1.1	**90**	0,27	0,31	0,35	0,40	0,44	0,49	0,54	0,56
1.2	**110**	0,45	0,51	0,57	0,64	0,71	0,78	0,86	0,90
1.3	**90**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.4	**70**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.5	**80**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.6	**70**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.7	**70**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.8	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.9	**80**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.10	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.11	**45**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.12	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.13	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.14	**45**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.15	**45**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.16	**45**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
2.1	**60**	0,14	0,16	0,18	0,21	0,23	0,26	0,28	0,30
2.2	**50**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.3	**60**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.4	**40**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.5	**35**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.6	**50**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.7	**35**	0,10	0,12	0,13	0,15	0,17	0,18	0,20	0,21
3.1	**110**	0,38	0,42	0,47	0,53	0,59	0,65	0,71	0,76
3.2	**75**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.3	**100**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.4	**65**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.5	**130**	0,47	0,53	0,59	0,67	0,73	0,81	0,89	0,95
3.6	**110**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.7	**130**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.8	**110**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
4.1	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.2	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.3	250	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.4	220	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.5	180	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.6									
4.7									
4.8	120	0,29	0,31	0,35	0,40	0,44	0,48	0,52	0,58
4.9	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.10	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.11	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.12	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

Cutting data standard values – WTX – UNI

Index	Drilling depth 3xD UNI 11 776 ..., 11 777 ..., 11 778 ..., 11 779 ..., 11 780 ..., 11 781 ...							
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	Ø 20–25 f mm/rev.
1.1	**110**	**125**	0,14	0,17	0,22	0,26	0,30	0,32
1.2	**130**	**150**	0,23	0,28	0,35	0,42	0,48	0,51
1.3	**110**	**125**	0,18	0,21	0,28	0,33	0,37	0,40
1.4	**90**	**100**	0,15	0,19	0,24	0,29	0,33	0,35
1.5	**100**	**115**	0,18	0,21	0,28	0,33	0,37	0,40
1.6	**90**	**100**	0,15	0,19	0,24	0,29	0,33	0,35
1.7	**90**	**100**	0,15	0,19	0,24	0,29	0,33	0,35
1.8	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.9	**100**	**115**	0,18	0,21	0,28	0,33	0,37	0,40
1.10	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.11	**55**	**65**	0,11	0,14	0,18	0,21	0,24	0,26
1.12	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.13	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.14	**55**	**65**	0,11	0,14	0,18	0,21	0,24	0,26
1.15	**55**	**65**	0,12	0,15	0,20	0,24	0,27	0,28
1.16	**55**	**65**	0,12	0,15	0,20	0,24	0,27	0,28
2.1		50	0,10	0,12	0,15	0,19	0,21	0,23
2.2		45	0,08	0,10	0,13	0,16	0,19	0,21
2.3		45	0,07	0,09	0,12	0,15	0,17	0,18
2.4		35	0,07	0,09	0,12	0,15	0,17	0,18
2.5		35	0,07	0,09	0,12	0,15	0,17	0,18
2.6		50	0,08	0,10	0,13	0,16	0,19	0,21
2.7		35	0,07	0,08	0,11	0,13	0,15	0,16
3.1	**70**	**90**	0,20	0,24	0,31	0,37	0,42	0,46
3.2	**50**	**60**	0,18	0,21	0,28	0,33	0,37	0,40
3.3	**60**	**80**	0,23	0,28	0,35	0,42	0,48	0,51
3.4	**45**	**55**	0,18	0,21	0,28	0,33	0,37	0,40
3.5	**90**	**110**	0,25	0,30	0,39	0,46	0,53	0,58
3.6	**75**	**90**	0,23	0,28	0,35	0,42	0,48	0,51
3.7	**90**	**110**	0,23	0,28	0,35	0,42	0,48	0,51
3.8	**75**	**90**	0,18	0,21	0,28	0,33	0,37	0,40
4.1								
4.2								
4.3								
4.4								
4.5								
4.6								
4.7								
4.8								
4.9								
4.10								
4.11	120	200	0,18	0,22	0,28	0,34	0,38	0,42
4.12	120	200	0,16	0,20	0,25	0,30	0,34	0,36
4.13								
4.14								
4.15								
4.16								
4.17	240		0,12	0,15	0,20	0,24	0,27	0,29
4.18								
4.19								
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1	40	55	0,09	0,11	0,14	0,17	0,19	0,21
6.2	25	35	0,06	0,08	0,10	0,12	0,13	0,14
6.3								
6.4								
6.5								

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 5xD UNI 11 782 ..., 11 783 ..., 11 784 ..., 11 785 ..., 11 786 ..., 11 787 ...								Drilling depth 8xD UNI 11 788 ..., 11 789 ..., 11 790 ...					
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	Ø 20–25 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**90**	**125**	0,13	0,17	0,22	0,26	0,30	0,32	**110**	0,13	0,17	0,22	0,26	0,30
1.2	**110**	**150**	0,21	0,28	0,35	0,42	0,48	0,51	**130**	0,21	0,28	0,35	0,42	0,48
1.3	**90**	**125**	0,16	0,21	0,28	0,33	0,37	0,40	**110**	0,16	0,21	0,28	0,33	0,37
1.4	**75**	**100**	0,14	0,19	0,24	0,29	0,33	0,35	**90**	0,14	0,19	0,24	0,29	0,33
1.5	**80**	**115**	0,16	0,21	0,28	0,33	0,37	0,40	**100**	0,16	0,21	0,28	0,33	0,37
1.6	**75**	**100**	0,14	0,19	0,24	0,29	0,33	0,35	**90**	0,14	0,19	0,24	0,29	0,33
1.7	**75**	**100**	0,14	0,19	0,24	0,29	0,33	0,35	**90**	0,14	0,19	0,24	0,29	0,33
1.8	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.9	**80**	**115**	0,16	0,21	0,28	0,33	0,37	0,40	**100**	0,16	0,21	0,28	0,33	0,37
1.10	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.11	**45**	**65**	0,10	0,14	0,18	0,21	0,24	0,26	**55**	0,10	0,14	0,18	0,21	0,24
1.12	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.13	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.14	**45**	**65**	0,10	0,14	0,18	0,21	0,24	0,26	**55**	0,10	0,14	0,18	0,21	0,24
1.15	**45**	**65**	0,12	0,15	0,20	0,24	0,27	0,28	**55**	0,12	0,15	0,20	0,24	0,27
1.16	**45**	**65**	0,12	0,15	0,20	0,24	0,27	0,28	**55**	0,12	0,15	0,20	0,24	0,27
2.1		50	0,09	0,12	0,15	0,19	0,21	0,23						
2.2		45	0,08	0,10	0,13	0,16	0,19	0,21						
2.3		45	0,07	0,09	0,12	0,15	0,17	0,18						
2.4		35	0,07	0,09	0,12	0,15	0,17	0,18						
2.5		35	0,07	0,09	0,12	0,15	0,17	0,18						
2.6		50	0,08	0,10	0,13	0,16	0,19	0,21						
2.7		35	0,06	0,08	0,11	0,13	0,15	0,16						
3.1	**75**	**90**	0,17	0,22	0,28	0,34	0,38	0,42	**80**	0,17	0,22	0,28	0,34	0,38
3.2	**55**	**60**	0,15	0,20	0,25	0,30	0,34	0,36	**55**	0,15	0,20	0,25	0,30	0,34
3.3	**70**	**80**	0,19	0,25	0,32	0,38	0,43	0,47	**70**	0,19	0,25	0,32	0,38	0,43
3.4	**45**	**55**	0,15	0,20	0,25	0,30	0,34	0,36	**50**	0,15	0,20	0,25	0,30	0,34
3.5	**90**	**110**	0,22	0,28	0,35	0,42	0,48	0,52	**95**	0,22	0,28	0,35	0,42	0,48
3.6	**75**	**90**	0,19	0,25	0,32	0,38	0,43	0,47	**80**	0,19	0,25	0,32	0,38	0,43
3.7	**90**	**110**	0,19	0,25	0,32	0,38	0,43	0,47	**95**	0,19	0,25	0,32	0,38	0,43
3.8	**75**	**90**	0,15	0,20	0,25	0,30	0,34	0,36	**80**	0,15	0,20	0,25	0,30	0,34
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11	100	200	0,17	0,22	0,28	0,34	0,38	0,42	200	0,17	0,22	0,28	0,34	0,38
4.12	100	200	0,15	0,20	0,25	0,30	0,34	0,36	200	0,15	0,20	0,25	0,30	0,34
4.13														
4.14														
4.15														
4.16														
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1		55	0,08	0,11	0,14	0,17	0,19	0,21						
6.2														
6.3														
6.4														
6.5														

Cutting data standard values – WTX – VA

Index	Drilling depth 3xD VA 10 731 ..., 10 732 ..., 10 733 ..., 10 734 ...							Drilling depth 5xD VA 10 740 ..., 10 741 ..., 10 745 ..., 10 746 ...						
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 2–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min without through coolant	v_c m/min with through coolant	Ø 2–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	90	90	0,09	0,12	0,16	0,19	0,22	90	90	0,09	0,12	0,16	0,19	0,22
1.2	105	105	0,15	0,20	0,26	0,31	0,35	105	105	0,15	0,20	0,26	0,31	0,35
1.3	90	90	0,11	0,16	0,20	0,24	0,27	90	90	0,11	0,16	0,20	0,24	0,27
1.4	70	70	0,10	0,14	0,18	0,21	0,24	70	70	0,10	0,14	0,18	0,21	0,24
1.5	80	80	0,11	0,16	0,20	0,24	0,27	80	80	0,11	0,16	0,20	0,24	0,27
1.6	70	70	0,10	0,14	0,18	0,21	0,24	70	70	0,10	0,14	0,18	0,21	0,24
1.7	70	70	0,10	0,14	0,18	0,21	0,24	70	70	0,10	0,14	0,18	0,21	0,24
1.8	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.9	80	80	0,11	0,16	0,20	0,24	0,27	80	80	0,11	0,16	0,20	0,24	0,27
1.10	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.11	45	45	0,07	0,10	0,13	0,15	0,17	45	45	0,07	0,10	0,13	0,15	0,17
1.12	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.13	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.14	45	45	0,07	0,10	0,13	0,15	0,17	45	45	0,07	0,10	0,13	0,15	0,17
1.15	45	45	0,08	0,11	0,14	0,17	0,19	45	45	0,08	0,11	0,14	0,17	0,19
1.16	45	45	0,08	0,11	0,14	0,17	0,19	45	45	0,08	0,11	0,14	0,17	0,19
2.1	**30**	**60**	0,08	0,11	0,14	0,17	0,19	**30**	**60**	0,08	0,11	0,14	0,17	0,19
2.2	**25**	**50**	0,06	0,09	0,12	0,15	0,17	**25**	**50**	0,06	0,09	0,12	0,15	0,17
2.3	**30**	**60**	0,06	0,08	0,11	0,13	0,15	**30**	**60**	0,06	0,08	0,11	0,13	0,15
2.4	**20**	**40**	0,06	0,08	0,11	0,13	0,15	**20**	**40**	0,06	0,08	0,11	0,13	0,15
2.5	**18**	**35**	0,06	0,08	0,11	0,13	0,15	**18**	**35**	0,06	0,08	0,11	0,13	0,15
2.6	**25**	**50**	0,06	0,09	0,12	0,15	0,17	**25**	**50**	0,06	0,09	0,12	0,15	0,17
2.7	**18**	**35**	0,05	0,08	0,10	0,12	0,13	**18**	**35**	0,05	0,08	0,10	0,12	0,13
3.1	90	100	0,16	0,22	0,28	0,34	0,38	80	100	0,16	0,22	0,28	0,34	0,38
3.2	65	70	0,14	0,20	0,25	0,30	0,34	60	70	0,14	0,20	0,25	0,30	0,34
3.3	80	90	0,18	0,25	0,32	0,38	0,43	70	90	0,18	0,25	0,32	0,38	0,43
3.4	50	60	0,14	0,20	0,25	0,30	0,34	50	60	0,14	0,20	0,25	0,30	0,34
3.5	110	120	0,20	0,28	0,35	0,42	0,48	100	120	0,20	0,28	0,35	0,42	0,48
3.6	90	100	0,18	0,25	0,32	0,38	0,43	80	100	0,18	0,25	0,32	0,38	0,43
3.7	110	120	0,18	0,25	0,32	0,38	0,43	95	120	0,18	0,25	0,32	0,38	0,43
3.8	90	100	0,14	0,20	0,25	0,30	0,34	80	100	0,14	0,20	0,25	0,30	0,34
4.1	**240**	**320**	0,11	0,15	0,20	0,24	0,27	**160**	**320**	0,11	0,15	0,20	0,24	0,27
4.2	**180**	**240**	0,11	0,15	0,20	0,24	0,27	**120**	**240**	0,11	0,15	0,20	0,24	0,27
4.3	**150**	**200**	0,14	0,20	0,25	0,30	0,34	**100**	**200**	0,14	0,20	0,25	0,30	0,34
4.4	**120**	**160**	0,11	0,15	0,20	0,24	0,27	**80**	**160**	0,11	0,15	0,20	0,24	0,27
4.5	**90**	**120**	0,10	0,14	0,18	0,22	0,24	**60**	**120**	0,10	0,14	0,18	0,22	0,24
4.6	**240**	**320**	0,10	0,14	0,18	0,22	0,24	**200**	**320**	0,10	0,14	0,18	0,22	0,24
4.7	**210**	**280**	0,10	0,14	0,18	0,22	0,24	**175**	**280**	0,10	0,14	0,18	0,22	0,24
4.8	**120**	**160**	0,10	0,14	0,18	0,22	0,24	**100**	**160**	0,10	0,14	0,18	0,22	0,24
4.9	**150**	**200**	0,10	0,14	0,18	0,22	0,24	**125**	**200**	0,10	0,14	0,18	0,22	0,24
4.10	**120**	**160**	0,10	0,14	0,18	0,22	0,24	**100**	**160**	0,10	0,14	0,18	0,22	0,24
4.11	**120**	**160**	0,16	0,22	0,28	0,34	0,38	**120**	**160**	0,16	0,22	0,28	0,34	0,38
4.12	**120**	**160**	0,14	0,20	0,25	0,30	0,34	**120**	**160**	0,14	0,20	0,25	0,30	0,34
4.13	**80**	**120**	0,05	0,08	0,10	0,12	0,13	**60**	**120**	0,05	0,08	0,10	0,12	0,13
4.14	**100**	**150**	0,09	0,12	0,16	0,19	0,22	**75**	**150**	0,09	0,12	0,16	0,19	0,22
4.15	**80**	**120**	0,09	0,12	0,16	0,19	0,22	**60**	**120**	0,09	0,12	0,16	0,19	0,22
4.16	**150**	**300**	0,11	0,15	0,20	0,24	0,27		**300**	0,11	0,15	0,20	0,24	0,27
4.17	400		0,11	0,15	0,20	0,24	0,27	400		0,11	0,15	0,20	0,24	0,27
4.18		**40**	0,06	0,09	0,12	0,15	0,17		**40**	0,06	0,09	0,12	0,15	0,17
4.19		**40**	0,05	0,08	0,10	0,12	0,13		**40**	0,05	0,08	0,10	0,12	0,13
5.1		40	0,05	0,08	0,10	0,12	0,13		40	0,05	0,08	0,10	0,12	0,13
5.2		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.3		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.4		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.5		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.6		18	0,05	0,08	0,10	0,12	0,13		18	0,05	0,08	0,10	0,12	0,13
5.7		15	0,05	0,08	0,10	0,12	0,13		15	0,05	0,08	0,10	0,12	0,13
5.8		10	0,05	0,08	0,10	0,12	0,13		10	0,05	0,08	0,10	0,12	0,13
5.9		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.10		25	0,05	0,08	0,10	0,12	0,13		25	0,05	0,08	0,10	0,12	0,13
5.11		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
6.1	30		0,05	0,08	0,10	0,10	0,10	20		0,05	0,08	0,10	0,10	0,10
6.2	22		0,04	0,06	0,07	0,07	0,07	15		0,04	0,06	0,07	0,07	0,07
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 8xD VA 10 770 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	75	0,09	0,12	0,16	0,19	0,22
1.2	90	0,15	0,20	0,26	0,31	0,35
1.3	75	0,11	0,16	0,20	0,24	0,27
1.4	60	0,10	0,14	0,18	0,21	0,24
1.5	70	0,11	0,16	0,20	0,24	0,27
1.6	60	0,10	0,14	0,18	0,21	0,24
1.7	60	0,10	0,14	0,18	0,21	0,24
1.8	45	0,08	0,11	0,14	0,17	0,19
1.9	70	0,11	0,16	0,20	0,24	0,27
1.10	45	0,08	0,11	0,14	0,17	0,19
1.11	40	0,07	0,10	0,13	0,15	0,17
1.12	45	0,08	0,11	0,14	0,17	0,19
1.13	45	0,08	0,11	0,14	0,17	0,19
1.14	40	0,07	0,10	0,13	0,15	0,17
1.15	40	0,08	0,11	0,14	0,17	0,19
1.16	40	0,08	0,11	0,14	0,17	0,19
2.1	**50**	0,08	0,11	0,14	0,17	0,19
2.2	**45**	0,06	0,09	0,12	0,15	0,17
2.3	**50**	0,06	0,08	0,11	0,13	0,15
2.4	**35**	0,06	0,08	0,11	0,13	0,15
2.5	**30**	0,06	0,08	0,11	0,13	0,15
2.6	**45**	0,06	0,09	0,12	0,15	0,17
2.7	**30**	0,05	0,08	0,10	0,12	0,13
3.1	85	0,16	0,22	0,28	0,34	0,38
3.2	60	0,14	0,20	0,25	0,30	0,34
3.3	75	0,18	0,25	0,32	0,38	0,43
3.4	50	0,14	0,20	0,25	0,30	0,34
3.5	100	0,20	0,28	0,35	0,42	0,48
3.6	85	0,18	0,25	0,32	0,38	0,43
3.7	100	0,18	0,25	0,32	0,38	0,43
3.8	85	0,14	0,20	0,25	0,30	0,34
4.1	**270**	0,11	0,15	0,20	0,24	0,27
4.2	**205**	0,11	0,15	0,20	0,24	0,27
4.3	**170**	0,14	0,20	0,25	0,30	0,34
4.4	**135**	0,11	0,15	0,20	0,24	0,27
4.5	**100**	0,10	0,14	0,18	0,22	0,24
4.6	**270**	0,10	0,14	0,18	0,22	0,24
4.7	**240**	0,10	0,14	0,18	0,22	0,24
4.8	**135**	0,10	0,14	0,18	0,22	0,24
4.9	**170**	0,10	0,14	0,18	0,22	0,24
4.10	**135**	0,10	0,14	0,18	0,22	0,24
4.11	**135**	0,16	0,22	0,28	0,34	0,38
4.12	**135**	0,14	0,20	0,25	0,30	0,34
4.13	**100**	0,05	0,08	0,10	0,12	0,13
4.14	**130**	0,09	0,12	0,16	0,19	0,22
4.15	**100**	0,09	0,12	0,16	0,19	0,22
4.16	**255**	0,11	0,15	0,20	0,24	0,27
4.17						
4.18	**35**	0,06	0,09	0,12	0,15	0,17
4.19	**35**	0,05	0,08	0,10	0,12	0,13
5.1	35	0,05	0,08	0,10	0,12	0,13
5.2	15	0,05	0,08	0,10	0,12	0,13
5.3	15	0,05	0,08	0,10	0,12	0,13
5.4	15	0,05	0,08	0,10	0,12	0,13
5.5	15	0,05	0,08	0,10	0,12	0,13
5.6	15	0,05	0,08	0,10	0,12	0,13
5.7	15	0,05	0,08	0,10	0,12	0,13
5.8	10	0,05	0,08	0,10	0,12	0,13
5.9	15	0,05	0,08	0,10	0,12	0,13
5.10	20	0,05	0,08	0,10	0,12	0,13
5.11	15	0,05	0,08	0,10	0,12	0,13
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – Quattro 4F

Index	Drilling depth 5xD Quattro 4F 10 730 ..., 10 735...							Drilling depth 8xD Quattro 4F 10 736 ...					
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**90**	**125**	0,13	0,17	0,22	0,26	0,30	**110**	0,13	0,17	0,22	0,26	0,30
1.2	**110**	**150**	0,21	0,28	0,35	0,42	0,48	**130**	0,21	0,28	0,35	0,42	0,48
1.3	**90**	**125**	0,16	0,21	0,28	0,33	0,37	**110**	0,16	0,21	0,28	0,33	0,37
1.4	**75**	**100**	0,14	0,19	0,24	0,29	0,33	**90**	0,14	0,19	0,24	0,29	0,33
1.5	**80**	**115**	0,16	0,21	0,28	0,33	0,37	**100**	0,16	0,21	0,28	0,33	0,37
1.6	**75**	**100**	0,14	0,19	0,24	0,29	0,33	**90**	0,14	0,19	0,24	0,29	0,33
1.7	**75**	**100**	0,14	0,19	0,24	0,29	0,33	**90**	0,14	0,19	0,24	0,29	0,33
1.8	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.9	**80**	**115**	0,16	0,21	0,28	0,33	0,37	**100**	0,16	0,21	0,28	0,33	0,37
1.10	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.11	**45**	**65**	0,10	0,14	0,18	0,21	0,24	**55**	0,10	0,14	0,18	0,21	0,24
1.12	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.13	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.14	**45**	**65**	0,10	0,14	0,18	0,21	0,24	**55**	0,10	0,14	0,18	0,21	0,24
1.15	**45**	**65**	0,12	0,15	0,20	0,24	0,27	**55**	0,12	0,15	0,20	0,24	0,27
1.16	**45**	**65**	0,12	0,15	0,20	0,24	0,27	**55**	0,12	0,15	0,20	0,24	0,27
2.1		50	0,09	0,12	0,15	0,19	0,21						
2.2		45	0,08	0,10	0,13	0,16	0,19						
2.3		45	0,07	0,09	0,12	0,15	0,17						
2.4		35	0,07	0,09	0,12	0,15	0,17						
2.5		35	0,07	0,09	0,12	0,15	0,17						
2.6		50	0,08	0,10	0,13	0,16	0,19						
2.7		35	0,06	0,08	0,11	0,13	0,15						
3.1	**75**	**90**	0,17	0,22	0,28	0,34	0,38	**80**	0,17	0,22	0,28	0,34	0,38
3.2	**55**	**60**	0,15	0,20	0,25	0,30	0,34	**55**	0,15	0,20	0,25	0,30	0,34
3.3	**70**	**80**	0,19	0,25	0,32	0,38	0,43	**70**	0,19	0,25	0,32	0,38	0,43
3.4	**45**	**55**	0,15	0,20	0,25	0,30	0,34	**50**	0,15	0,20	0,25	0,30	0,34
3.5	**90**	**110**	0,22	0,28	0,35	0,42	0,48	**95**	0,22	0,28	0,35	0,42	0,48
3.6	**75**	**90**	0,19	0,25	0,32	0,38	0,43	**80**	0,19	0,25	0,32	0,38	0,43
3.7	**90**	**110**	0,19	0,25	0,32	0,38	0,43	**95**	0,19	0,25	0,32	0,38	0,43
3.8	**75**	**90**	0,15	0,20	0,25	0,30	0,34	**80**	0,15	0,20	0,25	0,30	0,34
4.1													
4.2													
4.3													
4.4													
4.5													
4.6													
4.7													
4.8													
4.9													
4.10													
4.11	120	200	0,17	0,22	0,28	0,34	0,38	200	0,17	0,22	0,28	0,34	0,38
4.12	120	200	0,15	0,20	0,25	0,30	0,34	200	0,15	0,20	0,25	0,30	0,34
4.13													
4.14													
4.15													
4.16													
4.17	240		0,12	0,15	0,20	0,24	0,27						
4.18													
4.19													
5.1													
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9													
5.10													
5.11													
6.1	40	55	0,08	0,11	0,14	0,17	0,19	55	0,08	0,11	0,14	0,17	0,19
6.2	20	35	0,06	0,08	0,10	0,12	0,13						
6.3													
6.4													
6.5													

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

		Drilling depth 12xD Quattro 4F 10 737 ...				
Index	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	100	0,12	0,15	0,20	0,24	0,27
1.2	120	0,19	0,25	0,32	0,38	0,43
1.3	100	0,15	0,20	0,25	0,30	0,34
1.4	80	0,13	0,17	0,22	0,27	0,30
1.5	90	0,15	0,20	0,25	0,30	0,34
1.6	80	0,13	0,17	0,22	0,27	0,30
1.7	80	0,13	0,17	0,22	0,27	0,30
1.8	60	0,10	0,14	0,18	0,22	0,24
1.9	90	0,15	0,20	0,25	0,30	0,34
1.10	60	0,10	0,14	0,18	0,22	0,24
1.11	50	0,09	0,12	0,16	0,19	0,22
1.12	60	0,10	0,14	0,18	0,22	0,24
1.13	60	0,10	0,14	0,18	0,22	0,24
1.14	50	0,09	0,12	0,16	0,19	0,22
1.15	50	0,10	0,14	0,18	0,22	0,24
1.16	50	0,10	0,14	0,18	0,22	0,24
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	80	0,17	0,22	0,28	0,34	0,38
3.2	55	0,15	0,20	0,25	0,30	0,34
3.3	70	0,19	0,25	0,32	0,38	0,43
3.4	50	0,15	0,20	0,25	0,30	0,34
3.5	95	0,22	0,28	0,35	0,42	0,48
3.6	80	0,19	0,25	0,32	0,38	0,43
3.7	95	0,19	0,25	0,32	0,38	0,43
3.8	80	0,15	0,20	0,25	0,30	0,34
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	200	0,17	0,22	0,28	0,34	0,38
4.12	200	0,15	0,20	0,25	0,30	0,34
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – AL

Index	Drilling depth 5xD AL 10 791 ...						Drilling depth 8xD AL 10 792 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1	105	0,23	0,33	0,42	0,52	0,58	105	0,23	0,33	0,42	0,52	0,58
3.2	100	0,23	0,33	0,42	0,52	0,58	100	0,23	0,33	0,42	0,52	0,58
3.3	105	0,2	0,25	0,35	0,4	0,46	105	0,2	0,25	0,35	0,4	0,46
3.4	100	0,2	0,25	0,35	0,4	0,46	100	0,2	0,25	0,35	0,4	0,46
3.5	105	0,2	0,25	0,35	0,4	0,46	105	0,2	0,25	0,35	0,4	0,46
3.6	100	0,2	0,25	0,35	0,4	0,46	100	0,2	0,25	0,35	0,4	0,46
3.7	105	0,2	0,25	0,35	0,4	0,46	105	0,2	0,25	0,35	0,4	0,46
3.8	100	0,2	0,25	0,35	0,4	0,46	100	0,2	0,25	0,35	0,4	0,46
4.1	**360**	0,3	0,4	0,5	0,6	0,65	**330**	0,3	0,4	0,5	0,6	0,65
4.2	**400**	0,3	0,4	0,5	0,6	0,65	**360**	0,3	0,4	0,5	0,6	0,65
4.3	**360**	0,35	0,45	0,55	0,65	0,7	**330**	0,35	0,45	0,55	0,65	0,7
4.4	**350**	0,3	0,4	0,5	0,6	0,65	**320**	0,3	0,4	0,5	0,6	0,65
4.5	**300**	0,3	0,4	0,5	0,6	0,65	**300**	0,3	0,4	0,5	0,6	0,65
4.6	**160**	0,23	0,3	0,38	0,45	0,52	**130**	0,23	0,3	0,38	0,45	0,52
4.7	**200**	0,23	0,3	0,38	0,45	0,52	**170**	0,23	0,3	0,38	0,45	0,52
4.8												
4.9												
4.10												
4.11	**200**	0,23	0,3	0,38	0,45	0,52	**170**	0,23	0,3	0,38	0,45	0,52
4.12	**160**	0,23	0,3	0,38	0,45	0,52	**130**	0,23	0,3	0,38	0,45	0,52
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 12xD AL 10 793 ...					
	v_c m/min with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
1.10						
1.11						
1.12						
1.13						
1.14						
1.15						
1.16						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	105	0,23	0,33	0,42	0,52	0,58
3.2	100	0,23	0,33	0,42	0,52	0,58
3.3	105	0,2	0,25	0,35	0,4	0,46
3.4	100	0,2	0,25	0,35	0,4	0,46
3.5	105	0,2	0,25	0,35	0,4	0,46
3.6	100	0,2	0,25	0,35	0,4	0,46
3.7	105	0,2	0,25	0,35	0,4	0,46
3.8	100	0,2	0,25	0,35	0,4	0,46
4.1	**330**	0,3	0,4	0,5	0,6	0,65
4.2	**360**	0,3	0,4	0,5	0,6	0,65
4.3	**330**	0,35	0,45	0,55	0,65	0,7
4.4	**320**	0,3	0,4	0,5	0,6	0,65
4.5	**300**	0,3	0,4	0,5	0,6	0,65
4.6	**130**	0,23	0,3	0,38	0,45	0,52
4.7	**170**	0,23	0,3	0,38	0,45	0,52
4.8						
4.9						
4.10						
4.11	**170**	0,23	0,3	0,38	0,45	0,52
4.12	**130**	0,23	0,3	0,38	0,45	0,52
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – GG

Index	Drilling depth 5xD GG 10 749 ...						Drilling depth 8xD GG 10 753 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1	**100**	0,15	0,18	0,25	0,30	0,34	**100**	0,14	0,16	0,22	0,27	0,31
3.2	**70**	0,13	0,16	0,23	0,27	0,30	**70**	0,12	0,14	0,20	0,24	0,27
3.3	**90**	0,17	0,21	0,29	0,35	0,39	**90**	0,16	0,18	0,26	0,31	0,35
3.4	**60**	0,13	0,16	0,23	0,27	0,30	**60**	0,12	0,14	0,20	0,24	0,27
3.5	**120**	0,19	0,23	0,32	0,38	0,43	**120**	0,17	0,20	0,28	0,34	0,38
3.6	**100**	0,17	0,21	0,29	0,35	0,39	**100**	0,16	0,18	0,26	0,31	0,35
3.7	**120**	0,17	0,21	0,29	0,35	0,39	**120**	0,16	0,18	0,26	0,31	0,35
3.8	**100**	0,13	0,16	0,23	0,27	0,30	**100**	0,12	0,14	0,20	0,24	0,27
4.1												
4.2	**300**	0,12	0,14	0,20	0,24	0,27	**300**	0,12	0,14	0,20	0,24	0,27
4.3	**250**	0,15	0,18	0,25	0,30	0,34	**250**	0,15	0,18	0,25	0,30	0,34
4.4	**200**	0,12	0,14	0,20	0,24	0,27	**200**	0,12	0,14	0,20	0,24	0,27
4.5	**150**	0,10	0,13	0,18	0,22	0,24	**150**	0,10	0,13	0,18	0,22	0,24
4.6												
4.7												
4.8	**200**	0,10	0,13	0,18	0,22	0,24	**200**	0,10	0,13	0,18	0,22	0,24
4.9	**250**	0,10	0,13	0,18	0,22	0,24	**250**	0,10	0,13	0,18	0,22	0,24
4.10	**200**	0,10	0,13	0,18	0,22	0,24	**200**	0,10	0,13	0,18	0,22	0,24
4.11	**200**	0,17	0,20	0,28	0,34	0,38	**200**	0,17	0,20	0,28	0,34	0,38
4.12	**200**	0,15	0,18	0,25	0,30	0,34	**200**	0,15	0,18	0,25	0,30	0,34
4.13	**120**	0,06	0,07	0,10	0,12	0,13	**120**	0,06	0,07	0,10	0,12	0,13
4.14	**150**	0,09	0,11	0,16	0,19	0,22	**150**	0,09	0,11	0,16	0,19	0,22
4.15	**120**	0,09	0,11	0,16	0,19	0,22	**120**	0,09	0,11	0,16	0,19	0,22
4.16	**300**	0,12	0,14	0,20	0,24	0,27	**300**	0,12	0,14	0,20	0,24	0,27
4.17	**400**	0,12	0,14	0,20	0,24	0,27	**400**	0,12	0,14	0,20	0,24	0,27
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – Mini

Index	Drilling depth 5xD MINI 10 775 ...				Drilling depth 8xD MINI 10 778 ...				Drilling depth 12xD MINI 10 779 ...			
	v_c m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.	v_c m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.	v_c m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.
1.1	80	0,07	0,08	0,09	80	0,06	0,07	0,08	70	0,06	0,06	0,07
1.2	95	0,12	0,14	0,16	95	0,11	0,12	0,14	85	0,10	0,11	0,13
1.3	90	0,09	0,10	0,12	90	0,08	0,09	0,11	70	0,07	0,08	0,10
1.4	65	0,08	0,09	0,10	65	0,07	0,08	0,09	60	0,06	0,07	0,08
1.5	70	0,09	0,10	0,12	70	0,08	0,09	0,11	65	0,07	0,08	0,10
1.6	65	0,08	0,09	0,10	65	0,07	0,08	0,09	55	0,06	0,07	0,08
1.7	65	0,08	0,09	0,10	65	0,07	0,08	0,09	55	0,06	0,07	0,08
1.8	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.9	70	0,09	0,10	0,12	70	0,08	0,09	0,11	60	0,07	0,08	0,10
1.10	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.11	40	0,06	0,06	0,07	40	0,05	0,06	0,07	35	0,04	0,05	0,06
1.12	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.13	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.14	40	0,06	0,06	0,07	40	0,05	0,06	0,07	35	0,04	0,05	0,06
1.15	40	0,06	0,07	0,08	40	0,06	0,06	0,07	35	0,05	0,06	0,07
1.16	40	0,06	0,07	0,08	40	0,06	0,06	0,07	35	0,05	0,06	0,07
2.1	50	0,05	0,06	0,06	50	0,04	0,05	0,06				
2.2	40	0,04	0,05	0,06	40	0,04	0,04	0,05				
2.3	50	0,04	0,04	0,05	50	0,03	0,04	0,05				
2.4	32	0,04	0,04	0,05	32	0,03	0,04	0,05				
2.5	28	0,04	0,04	0,05	28	0,03	0,04	0,05				
2.6	40	0,04	0,05	0,06	40	0,04	0,04	0,05				
2.7	28	0,03	0,04	0,05	28	0,03	0,04	0,04				
3.1	90	0,11	0,12	0,14	90	0,10	0,11	0,13	80	0,09	0,10	0,11
3.2	65	0,09	0,10	0,12	65	0,08	0,09	0,11	55	0,07	0,08	0,10
3.3	80	0,12	0,14	0,16	80	0,11	0,12	0,14	70	0,10	0,11	0,13
3.4	55	0,09	0,10	0,12	55	0,08	0,09	0,11	50	0,07	0,08	0,10
3.5	100	0,14	0,16	0,18	100	0,13	0,14	0,16	95	0,11	0,13	0,14
3.6	90	0,12	0,14	0,16	90	0,11	0,12	0,14	80	0,10	0,11	0,13
3.7	105	0,12	0,14	0,16	105	0,11	0,12	0,14	95	0,10	0,11	0,13
3.8	90	0,09	0,10	0,12	90	0,08	0,09	0,11	80	0,07	0,08	0,10
4.1												
4.2	180	0,07	0,08	0,09	180	0,06	0,07	0,08	180	0,06	0,06	0,07
4.3	150	0,09	0,10	0,12	150	0,08	0,09	0,11	150	0,07	0,08	0,10
4.4	120	0,07	0,08	0,09	120	0,06	0,07	0,08	120	0,06	0,06	0,07
4.5	90	0,06	0,07	0,08	90	0,06	0,06	0,07	90	0,05	0,06	0,07
4.6												
4.7												
4.8	120	0,06	0,07	0,08	120	0,06	0,06	0,07	120	0,05	0,06	0,07
4.9	150	0,06	0,07	0,08	150	0,06	0,06	0,07	150	0,05	0,06	0,07
4.10	120	0,06	0,07	0,08	120	0,06	0,06	0,07	120	0,05	0,06	0,07
4.11	120	0,11	0,12	0,14	120	0,10	0,11	0,13	160	0,09	0,10	0,11
4.12	120	0,09	0,10	0,12	120	0,08	0,09	0,11	160	0,07	0,08	0,10
4.13	100	0,03	0,04	0,05	100	0,03	0,04	0,04	96	0,03	0,03	0,04
4.14	125	0,06	0,06	0,07	125	0,05	0,06	0,07	120	0,04	0,05	0,06
4.15	120	0,06	0,06	0,07	110	0,05	0,06	0,07	95	0,04	0,05	0,06
4.16	180	0,07	0,08	0,09	180	0,06	0,07	0,08	180	0,06	0,06	0,07
4.17									320	0,06	0,06	0,07
4.18	30	0,04	0,05	0,06	30	0,04	0,04	0,05				
4.19	32	0,03	0,04	0,05	32	0,03	0,04	0,04				
5.1	35	0,03	0,04	0,05	35	0,03	0,04	0,04				
5.2	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.3	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.4	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.5	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.6	15	0,03	0,04	0,05	15	0,03	0,04	0,04				
5.7	12	0,03	0,04	0,05	12	0,03	0,04	0,04				
5.8	8	0,03	0,04	0,05	8	0,03	0,04	0,04				
5.9	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.10	20	0,03	0,04	0,05	20	0,03	0,04	0,04				
5.11	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
6.1												
6.2												
6.3												
6.4												
6.5												

Coolant pressure 20–50 bar. High coolant pressure can lead to stiffening of the tool and may result in tool breakage with minimum radial force. The coolant system should be operated with a filter of 20–25 microns in order to avoid a possible blockage of the coolant channels. The cutting values are highly dependent on the external conditions, the material and the machine. The values shown represent possible cutting data which may have to be corrected up or down depending on application.

Cutting data standard values – WTX – Mini, WTX – SB

Index	Drilling depth 5xD Mini 11 770 ...				
	v_c m/min without through coolant	< Ø 1,0	> Ø 1,0–1,5	> Ø 1,5–2,0	> Ø 2,0–2,9
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**70**	0,01	0,015	0,03	0,05
1.2	**70**	0,01	0,015	0,03	0,05
1.3	**75**	0,01	0,015	0,03	0,05
1.4	**65**	0,01	0,015	0,03	0,05
1.5	**65**	0,02	0,03	0,04	0,06
1.6	**65**	0,01	0,015	0,03	0,05
1.7	**65**	0,02	0,03	0,04	0,06
1.8	**50**	0,01	0,015	0,03	0,05
1.9					
1.10	**65**	0,01	0,015	0,03	0,05
1.11	**65**	0,01	0,015	0,03	0,05
1.12	**50**	0,01	0,015	0,03	0,05
1.13					
1.14					
1.15	**50**	0,01	0,015	0,03	0,05
1.16	**50**	0,01	0,015	0,03	0,05
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1	**70**	0,01	0,015	0,03	0,05
3.2	**70**	0,01	0,015	0,03	0,05
3.3	**70**	0,01	0,015	0,03	0,05
3.4	**70**	0,01	0,015	0,03	0,05
3.5	**70**	0,01	0,015	0,03	0,05
3.6	**70**	0,01	0,015	0,03	0,05
3.7	**70**	0,01	0,015	0,03	0,05
3.8	**70**	0,01	0,015	0,03	0,05
4.1	200	0,01	0,015	0,03	0,05
4.2	200	0,01	0,015	0,03	0,05
4.3	160	0,01	0,015	0,03	0,05
4.4	130	0,01	0,015	0,03	0,05
4.5	130	0,01	0,015	0,03	0,05
4.6	100	0,01	0,015	0,03	0,05
4.7	100	0,01	0,015	0,03	0,05
4.8					
4.9					
4.10					
4.11	70	0,01	0,015	0,03	0,05
4.12	120	0,01	0,015	0,03	0,05
4.13					
4.14					
4.15					
4.16	200	0,01	0,015	0,03	0,05
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9	30	0,01	0,015	0,03	0,05
5.10	20	0,01	0,015	0,03	0,05
5.11	20	0,01	0,015	0,03	0,05
6.1					
6.2					
6.3					
6.4					
6.5					

Index	Drilling depth 3xD SB 10 767 ..., 10 772 ...				
	v_c m/min without through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–16
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**100**	0,11	0,15	0,20	0,24
1.2	**120**	0,19	0,25	0,32	0,38
1.3	**100**	0,14	0,20	0,25	0,30
1.4	**80**	0,12	0,17	0,22	0,27
1.5	**90**	0,14	0,20	0,25	0,30
1.6	**80**	0,12	0,17	0,22	0,27
1.7	**80**	0,12	0,17	0,22	0,27
1.8	**60**	0,10	0,14	0,18	0,22
1.9	**90**	0,14	0,20	0,25	0,30
1.10	**60**	0,10	0,14	0,18	0,22
1.11	**50**	0,09	0,12	0,16	0,19
1.12	**60**	0,10	0,14	0,18	0,22
1.13	**60**	0,10	0,14	0,18	0,22
1.14	**50**	0,09	0,12	0,16	0,19
1.15	**50**	0,10	0,14	0,18	0,22
1.16	**50**	0,10	0,14	0,18	0,22
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1	**70**	0,17	0,22	0,28	0,34
3.2	**50**	0,14	0,20	0,25	0,30
3.3	**60**	0,19	0,25	0,32	0,38
3.4	**45**	0,14	0,20	0,25	0,30
3.5	**90**	0,21	0,28	0,35	0,42
3.6	**75**	0,19	0,25	0,32	0,38
3.7	**90**	0,19	0,25	0,32	0,38
3.8	**75**	0,14	0,20	0,25	0,30
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
4.10					
4.11	120	0,17	0,22	0,28	0,34
4.12	120	0,14	0,20	0,25	0,30
4.13					
4.14					
4.15					
4.16					
4.17	240	0,11	0,15	0,20	0,24
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
5.10					
5.11					
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – H

Index	Drilling depth 3xD H 10 776 ...								Drilling depth 3xD H 10 777 ...							
	v_c m/min with through coolant	Ø 2–3 f mm/rev.	Ø 3–4 f mm/rev.	Ø 4–5 f mm/rev.	Ø 5–6 f mm/rev.	Ø 6–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	v_c m/min without through coolant	Ø 2–3 f mm/rev.	Ø 3–4 f mm/rev.	Ø 4–5 f mm/rev.	Ø 5–6 f mm/rev.	Ø 6–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.
1.1	120	0,1	0,14	0,18	0,21	0,24	0,3	0,35								
1.2	120	0,1	0,14	0,18	0,21	0,24	0,3	0,35								
1.3	120	0,1	0,14	0,18	0,21	0,24	0,3	0,35								
1.4	100	0,09	0,13	0,16	0,19	0,22	0,28	0,34								
1.5	110	0,09	0,13	0,16	0,19	0,22	0,28	0,34								
1.6	100	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.7	100	0,09	0,13	0,16	0,19	0,22	0,28	0,34								
1.8	85	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.9																
1.10	100	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.11	100	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.12																
1.13	30	0,045	0,06	0,08	0,1	0,12	0,15	0,2								
1.14																
1.15	60	0,045	0,06	0,08	0,1	0,12	0,15	0,2								
1.16	80	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
2.1																
2.2																
2.3																
2.4																
2.5																
2.6																
2.7																
3.1	115	0,15	0,19	0,23	0,27	0,335	0,425	0,52								
3.2	95	0,15	0,19	0,23	0,27	0,335	0,425	0,52								
3.3	95	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.4	90	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.5	95	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.6	90	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.7	95	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.8	90	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
4.1																
4.2																
4.3																
4.4																
4.5																
4.6																
4.7																
4.8																
4.9																
4.10																
4.11																
4.12																
4.13																
4.14																
4.15																
4.16																
4.17																
4.18																
4.19																
5.1																
5.2																
5.3																
5.4																
5.5																
5.6																
5.7																
5.8																
5.9																
5.10																
5.11																
6.1	**28**	**0,02**	**0,03**	**0,04**	**0,055**	**0,08**	**0,12**	**0,16**	**28**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,11**	**0,13**
6.2	**20**	**0,02**	**0,03**	**0,04**	**0,055**	**0,08**	**0,12**	**0,16**	**28**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,11**	**0,13**
6.3	20	0,02	0,03	0,04	0,055	0,08	0,12	0,16	**20**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,11**	**0,13**
6.4									**16**	**0,04**	**0,04**	**0,049**	**0,055**	**0,065**	**0,075**	**0,09**
6.5									**10**	**0,04**	**0,04**	**0,049**	**0,055**	**0,065**	**0,075**	**0,09**

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – BR

		Drilling depth 3xD BR 10 760 ..., 10 761 ...							
Index	v_c m/min with through coolant	Ø 4 f mm/rev.	Ø 5 f mm/rev.	Ø 6 f mm/rev.	Ø 8 f mm/rev.	Ø 10 f mm/rev.	Ø 12 f mm/rev.	Ø 14 f mm/rev.	Ø 16 f mm/rev.
1.1									
1.2	**90**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
1.3	**75**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
1.4	**60**	0,09	0,11	0,13	0,15	0,18	0,20	0,21	0,23
1.5	**70**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
1.6	**60**	0,09	0,11	0,13	0,15	0,18	0,20	0,21	0,23
1.7	**60**	0,09	0,11	0,13	0,15	0,18	0,20	0,21	0,23
1.8	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.9	**70**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
1.10	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.11	**40**	0,06	0,08	0,09	0,11	0,13	0,14	0,15	0,16
1.12	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.13	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.14	**35**	0,06	0,08	0,09	0,11	0,13	0,14	0,15	0,16
1.15	**35**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.16	**35**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
2.1									
2.2									
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	**80**	0,11	0,14	0,17	0,20	0,22	0,25	0,27	0,29
3.2	**55**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
3.3	**70**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
3.4	**50**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
3.5	**90**	0,14	0,18	0,21	0,25	0,28	0,31	0,34	0,36
3.6	**80**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
3.7	**95**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
3.8	**80**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
4.1									
4.2									
4.3	125	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
4.4	100	0,08	0,10	0,12	0,14	0,16	0,18	0,19	0,21
4.5	75	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.6									
4.7									
4.8	100	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.9	125	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.10	100	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.11	100	0,11	0,14	0,17	0,20	0,22	0,25	0,27	0,29
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

		Drilling depth 5xD BR 10 762 ...									
Index	v_c m/min with through coolant	Ø 4 f mm/rev.	Ø 5 f mm/rev.	Ø 6 f mm/rev.	Ø 8 f mm/rev.	Ø 10 f mm/rev.	Ø 12 f mm/rev.	Ø 14 f mm/rev.	Ø 16 f mm/rev.	Ø 18 f mm/rev.	Ø 20 f mm/rev.
1.1											
1.2	90	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
1.3	75	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
1.4	60	0,09	0,10	0,12	0,15	0,18	0,20	0,21	0,23	0,24	0,27
1.5	70	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
1.6	60	0,09	0,10	0,12	0,15	0,18	0,20	0,21	0,23	0,24	0,27
1.7	60	0,09	0,10	0,12	0,15	0,18	0,20	0,21	0,23	0,24	0,27
1.8	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.9	70	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
1.10	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.11	40	0,07	0,08	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,18
1.12	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.13	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.14	35	0,07	0,08	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,18
1.15	35	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.16	35	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
2.1											
2.2											
2.3											
2.4											
2.5											
2.6											
2.7											
3.1	80	0,12	0,13	0,16	0,20	0,22	0,25	0,27	0,29	0,31	0,34
3.2	55	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
3.3	70	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
3.4	50	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
3.5	90	0,13	0,15	0,18	0,25	0,28	0,31	0,34	0,36	0,39	0,43
3.6	80	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
3.7	95	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
3.8	80	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
4.1											
4.2											
4.3	125	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
4.4	100	0,09	0,10	0,12	0,14	0,16	0,18	0,19	0,21	0,23	0,25
4.5	75	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.6											
4.7											
4.8	100	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.9	125	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.10	100	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.11	100	0,12	0,13	0,16	0,20	0,22	0,25	0,27	0,29	0,31	0,34
4.12											
4.13											
4.14											
4.15											
4.16											
4.17											
4.18											
4.19											
5.1											
5.2											
5.3											
5.4											
5.5											
5.6											
5.7											
5.8											
5.9											
5.10											
5.11											
6.1											
6.2											
6.3											
6.4											
6.5											

Cutting data standard values – WTX – 180

Index	v_c m/min with through coolant	Drilling depth 3xD Type 180 10 720 ... Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	Ø 20–25 f mm/rev.
1.1	**100**	0,12	0,15	0,20	0,24	0,27	0,29
1.2	**120**	0,21	0,25	0,32	0,38	0,43	0,47
1.3	**100**	0,16	0,20	0,25	0,30	0,34	0,36
1.4	**80**	0,14	0,17	0,22	0,27	0,30	0,32
1.5	**90**	0,16	0,20	0,25	0,30	0,34	0,36
1.6	**80**	0,14	0,17	0,22	0,27	0,30	0,32
1.7	**80**	0,14	0,17	0,22	0,27	0,30	0,32
1.8	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.9	**90**	0,16	0,20	0,25	0,30	0,34	0,36
1.10	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.11	**50**	0,10	0,12	0,16	0,19	0,22	0,23
1.12	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.13	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.14	**50**	0,10	0,12	0,16	0,19	0,22	0,23
1.15	**50**	0,11	0,14	0,18	0,22	0,24	0,26
1.16	**50**	0,11	0,14	0,18	0,22	0,24	0,26
2.1	60	0,09	0,11	0,14	0,17	0,19	0,21
2.2	50	0,07	0,09	0,12	0,15	0,17	0,19
2.3	60	0,07	0,08	0,11	0,13	0,15	0,17
2.4	40	0,07	0,08	0,11	0,13	0,15	0,17
2.5	35	0,07	0,08	0,11	0,13	0,15	0,17
2.6	50	0,07	0,09	0,12	0,15	0,17	0,19
2.7	35	0,06	0,08	0,10	0,12	0,13	0,14
3.1	**90**	0,18	0,22	0,28	0,34	0,38	0,42
3.2	**65**	0,16	0,20	0,25	0,30	0,34	0,36
3.3	**80**	0,21	0,25	0,32	0,38	0,43	0,47
3.4	**55**	0,16	0,20	0,25	0,30	0,34	0,36
3.5	**110**	0,23	0,28	0,35	0,42	0,48	0,52
3.6	**90**	0,21	0,25	0,32	0,38	0,43	0,47
3.7	**110**	0,21	0,25	0,32	0,38	0,43	0,47
3.8	**90**	0,16	0,20	0,25	0,30	0,34	0,36
4.1							
4.2							
4.3							
4.4							
4.5							
4.6							
4.7							
4.8							
4.9							
4.10							
4.11	160	0,18	0,22	0,28	0,34	0,38	0,42
4.12	160	0,16	0,20	0,25	0,30	0,34	0,36
4.13							
4.14							
4.15							
4.16							
4.17							
4.18							
4.19							
5.1							
5.2							
5.3							
5.4							
5.5							
5.6							
5.7							
5.8							
5.9							
5.10							
5.11							
6.1	50	0,07	0,09	0,11	0,14	0,15	0,17
6.2	30	0,05	0,06	0,08	0,10	0,11	0,12
6.3							
6.4							
6.5							

Index	v_c m/min with through coolant	Drilling depth 5xD Type 180 10 721 ... Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	90	0,09	0,12	0,16	0,19	0,22
1.2	110	0,16	0,20	0,26	0,31	0,35
1.3	90	0,12	0,16	0,20	0,24	0,27
1.4	75	0,10	0,14	0,18	0,21	0,24
1.5	80	0,12	0,16	0,20	0,24	0,27
1.6	75	0,10	0,14	0,18	0,21	0,24
1.7	75	0,10	0,14	0,18	0,21	0,24
1.8	55	0,08	0,11	0,14	0,17	0,19
1.9	85	0,12	0,16	0,20	0,24	0,27
1.10	60	0,08	0,11	0,14	0,17	0,19
1.11	50	0,07	0,10	0,13	0,15	0,17
1.12	60	0,08	0,11	0,14	0,17	0,19
1.13	60	0,08	0,11	0,14	0,17	0,19
1.14	50	0,07	0,10	0,13	0,15	0,17
1.15	50	0,08	0,11	0,14	0,17	0,19
1.16	50	0,08	0,11	0,14	0,17	0,19
2.1	60	0,07	0,09	0,11	0,14	0,15
2.2	50	0,06	0,07	0,10	0,12	0,14
2.3	60	0,05	0,07	0,09	0,11	0,12
2.4	40	0,05	0,07	0,09	0,11	0,12
2.5	35	0,05	0,07	0,09	0,11	0,12
2.6	50	0,06	0,07	0,10	0,12	0,14
2.7	35	0,05	0,06	0,08	0,10	0,11
3.1	90	0,14	0,18	0,22	0,27	0,31
3.2	65	0,12	0,16	0,20	0,24	0,27
3.3	80	0,16	0,20	0,26	0,31	0,35
3.4	55	0,12	0,16	0,20	0,24	0,27
3.5	110	0,17	0,22	0,28	0,34	0,38
3.6	90	0,16	0,20	0,26	0,31	0,35
3.7	110	0,16	0,20	0,26	0,31	0,35
3.8	90	0,12	0,16	0,20	0,24	0,27
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	160	0,17	0,22	0,28	0,34	0,38
4.12	160	0,15	0,20	0,25	0,30	0,34
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1	50	0,06	0,08	0,10	0,12	0,13
6.2	30	0,04	0,05	0,07	0,08	0,09
6.3						
6.4						
6.5						

Application Note:

Spot drilling with reduced feedrate

1. Feedrate f [mm/U] should be multiplied by correction factor A_k
2. Drill with reduced feed rate until tool is fully engaged in workpiece by approximately 0,25xD
3. Retract from the hole at double the feed rate f in mm/U – only with inclined surfaces

   This operation is necessary in order to achieve maximum performance of the drill!
4. Drill the hole with feed rate f [mm/U] without pecking for chip evacuation

Correction factor A_k for f [mm/U] when spot drilling		
Inclination workpiece surface	A_k to 3xD (10 720 ...)	A_k to 5xD (10 721 ...)
15°	0,5	0,25
30°	0,4	not recommended
45°	0,25	not recommended

For drilling on flat surfaces (inclination 0°) with the WTX – 180 5xD, we recommend the use of a pilot drill (WTX – UNI 3xD).

Cutting data standard values – WPC – UNI

Index	v_c m/min without through coolant	v_c m/min with through coolant	Drilling depth 3xD UNI 11 600 ..., 11 601 ..., 11 603 ..., 11 604 ... Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**100**	**100**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
1.2	**120**	**120**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
1.3	**100**	**100**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.4	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.5	**90**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.6	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.7	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.8	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.9	**90**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.10	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.11	**50**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.12	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.13	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.14	**50**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.15	**50**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.16	**50**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
2.1		45	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3		45	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4		30	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5		25	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7		25	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	**70**	**80**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	**50**	**55**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	**60**	**70**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	**45**	**50**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	**90**	**95**	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	**75**	**80**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	**90**	**95**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	**75**	**80**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11	120	200	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	120	200	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13										
4.14										
4.15										
4.16										
4.17	240		0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that must be corrected according to the usage conditions.

		Drilling depth 5xD UNI 11 606 ..., 11 607 ..., 11 609 ..., 11 610 ...									
	Index	v_c m/min without through coolant	v_c m/min with through coolant	Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
	1.1	**80**	**100**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
	1.2	**96**	**120**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
	1.3	**80**	**100**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	1.4	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
	1.5	**72**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	1.6	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
	1.7	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
	1.8	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
	1.9	**72**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	1.10	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
	1.11	**40**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
	1.12	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
	1.13	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
	1.14	**40**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
	1.15	**40**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
	1.16	**40**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
	2.1		45	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
	2.2		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
	2.3		45	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
	2.4		30	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
	2.5		25	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
	2.6		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
	2.7		25	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
	3.1	**65**	**80**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
	3.2	**46**	**55**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	3.3	**59**	**70**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
	3.4	**40**	**50**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	3.5	**78**	**95**	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
	3.6	**65**	**80**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
	3.7	**78**	**95**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
	3.8	**65**	**80**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	4.1										
	4.2										
	4.3										
	4.4										
	4.5										
	4.6										
	4.7										
	4.8										
	4.9										
	4.10										
	4.11	100	200	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
	4.12	100	200	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
	4.13										
	4.14										
	4.15										
	4.16										
	4.17	240		0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
	4.18										
	4.19										
	5.1										
	5.2										
	5.3										
	5.4										
	5.5										
	5.6										
	5.7										
	5.8										
	5.9										
	5.10										
	5.11										
	6.1										
	6.2										
	6.3										
	6.4										
	6.5										

Cutting data standard values – WPC – UNI

Index	Drilling depth 8xD UNI 11 612 ...						Drilling depth 12xD UNI 11 615 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–18 f mm/rev.
1.1	**90**	0,10	0,14	0,18	0,22	0,24	**80**	0,10	0,14	0,18	0,22	0,24
1.2	**110**	0,17	0,23	0,29	0,35	0,39	**100**	0,17	0,23	0,29	0,35	0,38
1.3	**90**	0,13	0,18	0,23	0,27	0,30	**80**	0,13	0,18	0,23	0,27	0,30
1.4	**70**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,26
1.5	**80**	0,13	0,18	0,23	0,27	0,30	**70**	0,13	0,18	0,23	0,27	0,30
1.6	**70**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,26
1.7	**70**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,26
1.8	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.9	**80**	0,13	0,18	0,23	0,27	0,30	**70**	0,13	0,18	0,23	0,27	0,30
1.10	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.11	**45**	0,08	0,11	0,14	0,17	0,19	**40**	0,08	0,11	0,14	0,17	0,19
1.12	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.13	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.14	**45**	0,08	0,11	0,14	0,17	0,19	**40**	0,08	0,11	0,14	0,17	0,19
1.15	**45**	0,09	0,13	0,16	0,19	0,22	**40**	0,09	0,13	0,16	0,19	0,21
1.16	**45**	0,09	0,13	0,16	0,19	0,22	**40**	0,09	0,13	0,16	0,19	0,21
2.1	45	0,07	0,10	0,13	0,15	0,17	40	0,07	0,10	0,13	0,15	0,17
2.2	40	0,06	0,08	0,11	0,13	0,15	35	0,06	0,08	0,11	0,13	0,15
2.3	45	0,06	0,08	0,10	0,12	0,14	40	0,06	0,08	0,10	0,12	0,13
2.4	30	0,06	0,08	0,10	0,12	0,14	25	0,06	0,08	0,10	0,12	0,13
2.5	25	0,06	0,08	0,10	0,12	0,14	25	0,06	0,08	0,10	0,12	0,13
2.6	40	0,06	0,08	0,11	0,13	0,15	35	0,06	0,08	0,11	0,13	0,15
2.7	25	0,05	0,07	0,09	0,11	0,12	25	0,05	0,07	0,09	0,11	0,12
3.1	**80**	0,15	0,20	0,25	0,30	0,34	**70**	0,15	0,20	0,25	0,30	0,33
3.2	**55**	0,13	0,18	0,23	0,27	0,30	**50**	0,13	0,18	0,23	0,27	0,30
3.3	**70**	0,17	0,23	0,29	0,35	0,39	**65**	0,17	0,23	0,29	0,35	0,38
3.4	**50**	0,13	0,18	0,23	0,27	0,30	**45**	0,13	0,18	0,23	0,27	0,30
3.5	**95**	0,19	0,25	0,32	0,38	0,43	**85**	0,19	0,25	0,32	0,38	0,42
3.6	**80**	0,17	0,23	0,29	0,35	0,39	**70**	0,17	0,23	0,29	0,35	0,38
3.7	**95**	0,17	0,23	0,29	0,35	0,39	**85**	0,17	0,23	0,29	0,35	0,38
3.8	**80**	0,13	0,18	0,23	0,27	0,30	**70**	0,13	0,18	0,23	0,27	0,30
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11	200	0,17	0,22	0,28	0,34	0,38	180	0,17	0,22	0,28	0,34	0,37
4.12	200	0,15	0,20	0,25	0,30	0,34	180	0,15	0,20	0,25	0,30	0,33
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

Recommended application for WPC 8xD and 12xD

The following application notes should be observed for optimum machining results.

1. For 8xD and 12xD tools a pilot hole is recommended. The pilot hole can be drilled with the WPC 3xD drills. The tolerance of the 3xD drill (m7) and the tolerance of the 8xD and 12xD drill (h7) are matched accordingly.

2. Alternatively, with cutting speed and feedrate both reduced by 50 % the 8xD and 12xD tool can drill to a depth of 1xD.
Then, with normal feed and speed values continue drilling.
Note: when accelerating to normal speed, the spindle must not stop for gear changes!

3. The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type! The values indicated represent possible cutting data which may need to be corrected depending on operating conditions !

Cutting data standard values – Type N – Twist drills

Index	Drilling depth 3xD Type N (similar DIN 1897) 10 700 ...							Drilling depth 5xD Type N (similar DIN 338) 10 710 ...					
	v_c m/min without through coolant	Ø 0,5–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min without through coolant	Ø 0,5–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.
1.1	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.3	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.4	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.5	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.6	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.7	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.8													
1.9													
1.10													
1.11													
1.12													
1.13	**25**	0,01–0,03	0,02–0,05	0,04–0,06	0,05–0,08	0,08–0,1	0,08–0,1	**25**	0,01–0,03	0,02–0,05	0,04–0,06	0,05–0,08	0,08–0,1
1.14													
1.15													
1.16													
2.1	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.2	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.3	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.4	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.5	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.6	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.7	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
3.1	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.3	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.4	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.5	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.6	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.7	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.8	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
4.1	**200**	0,01	0,03	0,07	0,11	0,15	0,2	**200**	0,01	0,03	0,07	0,11	0,15
4.2	**200**	0,01	0,03	0,07	0,11	0,15	0,2	**200**	0,01	0,03	0,07	0,11	0,15
4.3	**180**	0,01	0,03	0,07	0,11	0,15	0,2	**180**	0,01	0,03	0,07	0,11	0,15
4.4	**160**	0,01	0,03	0,07	0,11	0,15	0,2	**160**	0,01	0,03	0,07	0,11	0,15
4.5	**130**	0,01	0,03	0,07	0,11	0,15	0,2	**130**	0,01	0,03	0,07	0,11	0,15
4.6	**100**	0,007	0,02	0,06	0,11	0,16	0,2	**100**	0,007	0,02	0,06	0,11	0,16
4.7	**120**	0,007	0,02	0,06	0,11	0,16	0,2	**120**	0,007	0,02	0,06	0,11	0,16
4.8													
4.9													
4.10													
4.11	**160**	0,007	0,02	0,06	0,11	0,16	0,2	**160**	0,007	0,02	0,06	0,11	0,16
4.12	**120**	0,007	0,02	0,06	0,11	0,16	0,2	**120**	0,007	0,02	0,06	0,11	0,16
4.13	**50**	0,013	0,04	0,08	0,12	0,16	0,2	**50**	0,013	0,04	0,08	0,12	0,16
4.14	**70**	0,013	0,04	0,08	0,12	0,16	0,2	**70**	0,013	0,04	0,08	0,12	0,16
4.15													
4.16	**200**	0,01	0,03	0,07	0,11	0,15	0,2	**200**	0,01	0,03	0,07	0,11	0,15
4.17													
4.18													
4.19													
5.1													
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9	30	0,003	0,01	0,03	0,06	0,08	0,1	30	0,003	0,01	0,03	0,06	0,08
5.10	20	0,003	0,01	0,03	0,06	0,08	0,1	20	0,003	0,01	0,03	0,06	0,08
5.11	20	0,003	0,01	0,03	0,06	0,08	0,1	20	0,003	0,01	0,03	0,06	0,08
6.1													
6.2													
6.3													
6.4													
6.5													

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WPC – VA

Index	Drilling depth 3xD VA 11 620 ..., 11 621 ..., 11 623 ..., 11 624 ...									
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 1–1,5	Ø 1,5–2	Ø 2–3	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
			f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	90	90	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.2	105	105	0,08	0,09	0,11	0,15	0,22	0,28	0,33	0,36
1.3	90	90	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.4	70	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.5	80	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.6	70	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.7	70	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.8	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.9	80	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.10	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.11	45	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.12	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.13	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.14	45	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.15	45	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.16	45	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
2.1	**30**	**60**	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2	**25**	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3	**30**	**60**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4	**20**	**40**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5	**18**	**35**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6	**25**	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7	**18**	**35**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	90	100	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	65	70	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	80	90	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	50	60	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	110	120	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	90	100	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	110	120	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	90	100	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1	**240**	**320**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.2	**180**	**240**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.3	**150**	**200**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.4	**120**	**160**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.5	**90**	**120**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.6	**240**	**320**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.7	**210**	**280**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.8	**120**	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.9	**150**	**200**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.10	**120**	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.11	**120**	**160**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	**120**	**160**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13	**80**	**120**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
4.14	**100**	**150**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.15	**80**	**120**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.16	**150**	**300**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.17	**400**		0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18		**40**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
4.19		**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.1		**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.2		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.3		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.4		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.5		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.6		**18**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.7		**15**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.8		**10**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.9		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.10		**25**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.11		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
6.1	30		0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
6.2	22		0,02	0,02	0,03	0,04	0,06	0,08	0,09	0,10
6.3										
6.4										
6.5										

The cutting data depends extremely on the external conditions, such as stability of the tool and workpiece clamping, material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WPC – VA

Index	v_c m/min with through coolant	Drilling depth 5xD VA 11 629 ..., 11 630 ... Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	90	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.2	105	0,08	0,09	0,11	0,15	0,22	0,28	0,33	0,36
1.3	90	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.4	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.5	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.6	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.7	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.8	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.9	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.10	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.11	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.12	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.13	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.14	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.15	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.16	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
2.1	**60**	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3	**60**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4	**40**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5	**35**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7	**35**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	100	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	70	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	90	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	60	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	120	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	100	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	120	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	100	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1	**320**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.2	**240**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.3	**200**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.4	**160**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.5	**120**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.6	**320**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.7	**280**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.8	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.9	**200**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.10	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.11	**160**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	**160**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13	**120**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
4.14	**150**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.15	**120**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.16	**300**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.17	**300**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18	**40**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
4.19	**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.1	**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.2	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.3	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.4	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.5	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.6	**18**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.7	**15**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.8	**10**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.9	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.10	**25**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.11	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WTX – TB UNI

	WTX–TB16 UNI	WTX–TB20 UNI	WTX–TB25 UNI	WTX–TB30 UNI	Hole depth TB UNI 11 016 ..., 11 020 ..., 11 025 ..., 11 030 ...			
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	Ø 2–3 f mm/rev.	Ø > 3–5 f mm/rev.	Ø > 5–8 f mm/rev.	Ø > 8–12 f mm/rev.
1.1	**100**	**95**	**85**	**80**	0,075	0,1	0,15	0,2
1.2	**100**	**95**	**85**	**80**	0,075	0,1	0,15	0,2
1.3	**105**	**100**	**90**	**85**	0,1	0,14	0,2	0,275
1.4	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.5	**95**	**90**	**80**	**75**	0,1	0,14	0,2	0,275
1.6	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.7	**95**	**90**	**80**	**75**	0,1	0,14	0,2	0,275
1.8	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
1.9	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
1.10	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.11	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.12	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
1.13								
1.14								
1.15								
1.16	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
2.1	**75**	**70**	**65**	**60**	0,05	0,08	0,12	0,15
2.2	**75**	**70**	**65**	**60**	0,05	0,08	0,12	0,15
2.3	**50**	**45**	**45**	**40**	0,05	0,08	0,12	0,15
2.4	**50**	**45**	**45**	**40**	0,05	0,08	0,12	0,15
2.5	**55**	**50**	**50**	**45**	0,05	0,08	0,12	0,15
2.6	**55**	**50**	**50**	**45**	0,05	0,08	0,12	0,15
2.7								
3.1	**105**	**100**	**90**	**85**	0,15	0,23	0,335	0,425
3.2	**100**	**95**	**85**	**80**	0,15	0,23	0,335	0,425
3.3	**105**	**100**	**90**	**85**	0,125	0,2	0,25	0,35
3.4	**100**	**95**	**85**	**80**	0,125	0,2	0,25	0,35
3.5	**105**	**100**	**90**	**85**	0,125	0,2	0,25	0,35
3.6	**100**	**95**	**85**	**80**	0,125	0,2	0,25	0,35
3.7	**105**	**100**	**90**	**85**	0,125	0,2	0,25	0,35
3.8	**100**	**95**	**85**	**80**	0,125	0,2	0,25	0,35
4.1								
4.2								
4.3								
4.4								
4.5								
4.6								
4.7								
4.8								
4.9								
4.10								
4.11								
4.12								
4.13								
4.14								
4.15								
4.16								
4.17								
4.18								
4.19								
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1								
6.2								
6.3								
6.4								
6.5								

Cutting data standard values – WTX – TB UNI

Index	WTX–TB40 UNI	WTX–TB50 UNI	Hole depth 40xD / 50xD TB UNI 11 040 ..., 11 050 ...			
	v_c m/min	v_c m/min	Ø 2–3	Ø > 3–5	Ø > 5–8	Ø > 8–9
			f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	65	55	0,05	0,08	0,12	0,15
1.2	65	55	0,05	0,08	0,12	0,15
1.3	70	60	0,075	0,1	0,15	0,2
1.4	60	50	0,05	0,08	0,12	0,15
1.5	60	50	0,075	0,1	0,15	0,2
1.6	60	50	0,05	0,08	0,12	0,15
1.7	60	50	0,075	0,1	0,15	0,2
1.8	50	45	0,05	0,08	0,12	0,15
1.9	50	55	0,05	0,08	0,12	0,15
1.10	60	50	0,05	0,08	0,12	0,15
1.11	60	50	0,05	0,08	0,12	0,15
1.12	50	45	0,05	0,08	0,12	0,15
1.13						
1.14						
1.15						
1.16	50	45	0,05	0,08	0,12	0,15
2.1	50	45	0,04	0,06	0,09	0,11
2.2	50	45	0,04	0,06	0,09	0,11
2.3	35	30	0,04	0,06	0,09	0,11
2.4	35	30	0,04	0,06	0,09	0,11
2.5	40	35	0,04	0,06	0,09	0,11
2.6	40	35	0,04	0,06	0,09	0,11
2.7						
3.1	70	60	0,125	0,2	0,25	0,35
3.2	65	55	0,125	0,2	0,25	0,35
3.3	70	60	0,1	0,14	0,2	0,275
3.4	65	55	0,1	0,14	0,2	0,275
3.5	70	60	0,1	0,14	0,2	0,275
3.6	65	55	0,1	0,14	0,2	0,275
3.7	70	60	0,1	0,14	0,2	0,275
3.8	65	55	0,1	0,14	0,2	0,275
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

All solid carbide WTX deep hole drills must be used with a pilot bore. The tool must never be run at high speed while not engaged in a material. Please refer to the strategy for the production of deep holes on → **Page 134**

Cutting data standard values – WTX – TB ALU

	WTX-TB16 ALU	WTX-TB20 ALU	WTX-TB25 ALU	Hole depth 16xD / 20xD / 25xD TB ALU 11 017 ..., 11 021 ..., 11 026 ...				WTX-TB30 ALU	Hole depth TB ALU 11 031 ...			
Index	v_c m/min	v_c m/min	v_c m/min	Ø 2–3 f mm/rev.	Ø > 3–5 f mm/rev.	Ø > 5–8 f mm/rev.	Ø > 8–12 f mm/rev.	v_c m/min	Ø 2–3 f mm/rev.	Ø > 3–5 f mm/rev.	Ø > 5–8 f mm/rev.	Ø > 8–12 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1												
3.2												
3.3												
3.4												
3.5												
3.6												
3.7												
3.8												
4.1	**160**	**150**	**130**	0,125	0,2	0,25	0,35	**120**	0,08	0,15	0,21	0,27
4.2	**160**	**150**	**130**	0,125	0,2	0,25	0,35	**120**	0,08	0,15	0,21	0,27
4.3	**160**	**150**	**130**	0,15	0,23	0,3	0,38	**120**	0,15	0,23	0,3	0,38
4.4	**140**	**130**	**120**	0,125	0,2	0,25	0,35	**110**	0,08	0,15	0,21	0,27
4.5	**140**	**130**	**120**	0,125	0,2	0,25	0,35	**110**	0,08	0,15	0,21	0,27
4.6	**90**	**80**	**75**	0,125	0,2	0,25	0,35	**70**	0,08	0,15	0,21	0,27
4.7	**90**	**80**	**75**	0,125	0,2	0,25	0,35	**70**	0,08	0,15	0,21	0,27
4.8												
4.9												
4.10												
4.11	**115**	**100**	**90**	0,125	0,2	0,25	0,35	**80**	0,08	0,15	0,21	0,27
4.12	**115**	**100**	**90**	0,125	0,2	0,25	0,35	**80**	0,08	0,15	0,21	0,27
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

All solid carbide WTX deep hole drills must be used with a pilot bore.
The tool must never be run at high speed while not engaged in a material.
Please refer to the strategy for the production of deep holes on
→ **Page 134**

Cutting data standard values – Solid Carbide NC Spot Drills, Centre Drills

Index	Solid Carbide NC Spot Drills MultiChange 10 709 ..., 10 712 ..., 10 714 ...					
	v_c m/min	Ø 8	Ø 10	Ø 12	Ø 16	Ø 20
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	40–130	0,180	0,200	0,220	0,280	0,300
1.2	40–130	0,215	0,235	0,260	0,330	0,355
1.3	40–130	0,180	0,200	0,220	0,280	0,300
1.4	40–130	0,165	0,180	0,200	0,255	0,275
1.5	40–130	0,195	0,220	0,240	0,305	0,325
1.6	40–130	0,165	0,180	0,200	0,255	0,275
1.7	40–130	0,195	0,220	0,240	0,305	0,325
1.8	40–130	0,130	0,145	0,160	0,205	0,220
1.9	40–130	0,180	0,200	0,220	0,280	0,300
1.10	40–130	0,130	0,145	0,160	0,205	0,220
1.11	40–130	0,115	0,125	0,140	0,180	0,190
1.12	40–130	0,130	0,145	0,160	0,205	0,220
1.13	40–130	0,130	0,145	0,160	0,205	0,220
1.14	40–130	0,000	0,000	0,000	0,000	0,000
1.15	40–130	0,115	0,125	0,140	0,180	0,190
1.16	40–130	0,115	0,125	0,140	0,180	0,190
2.1	20–40	0,145	0,165	0,180	0,230	0,245
2.2	20–40	0,130	0,145	0,160	0,205	0,220
2.3	20–40	0,130	0,145	0,160	0,205	0,220
2.4	20–40	0,100	0,110	0,120	0,155	0,165
2.5	20–40	0,115	0,125	0,140	0,180	0,190
2.6	20–40	0,115	0,125	0,140	0,180	0,190
2.7	20–40	0,100	0,110	0,120	0,155	0,165
3.1	60–80	0,215	0,235	0,260	0,330	0,355
3.2	60–80	0,180	0,200	0,220	0,280	0,300
3.3	60–80	0,195	0,220	0,240	0,305	0,325
3.4	60–80	0,165	0,180	0,200	0,255	0,275
3.5	60–80	0,195	0,220	0,240	0,305	0,325
3.6	60–80	0,180	0,200	0,220	0,280	0,300
3.7	60–80	0,195	0,220	0,240	0,305	0,325
3.8	60–80	0,165	0,180	0,200	0,255	0,275
4.1	90–300	0,310	0,345	0,380	0,485	0,520
4.2	90–300	0,310	0,345	0,380	0,485	0,520
4.3	90–300	0,295	0,325	0,360	0,460	0,490
4.4	90–300	0,280	0,310	0,340	0,435	0,465
4.5	90–300	0,245	0,275	0,300	0,380	0,410
4.6	90–300	0,195	0,220	0,240	0,305	0,325
4.7	90–300	0,180	0,200	0,220	0,280	0,300
4.8	90–300	0,145	0,165	0,180	0,230	0,245
4.9	90–300	0,115	0,125	0,140	0,180	0,190
4.10	90–300	0,115	0,125	0,140	0,180	0,190
4.11	90–300	0,215	0,235	0,260	0,330	0,355
4.12	90–300	0,215	0,235	0,260	0,330	0,355
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

Solid Carbide NC Spot Drills ZB & NC-A 10 708 ..., 10 704 ..., 10 703 ..., 10 702 ...				
v_c m/min without through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–20
	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
80	0,14	0,2	0,27	0,35
80	0,14	0,2	0,27	0,35
75	0,14	0,2	0,27	0,35
70	0,14	0,2	0,27	0,35
65	0,14	0,2	0,27	0,35
65	0,1	0,15	0,2	0,26
65	0,14	0,2	0,27	0,35
65	0,1	0,15	0,2	0,26
65	0,1	0,15	0,2	0,26
65	0,1	0,15	0,2	0,26
50	0,1	0,15	0,2	0,26
50	0,1	0,15	0,2	0,26
70	0,12	0,17	0,22	0,3
70	0,1	0,15	0,2	0,26
70	0,1	0,15	0,2	0,26
70	0,1	0,15	0,2	0,26
70	0,1	0,15	0,2	0,26
70	0,1	0,15	0,2	0,26
70	0,1	0,15	0,2	0,26
70	0,1	0,15	0,2	0,26
200	0,03	0,07	0,11	0,15
200	0,03	0,07	0,11	0,15
180	0,03	0,07	0,11	0,15
160	0,03	0,07	0,11	0,15
130	0,03	0,07	0,11	0,15
100	0,02	0,06	0,11	0,15
120	0,02	0,06	0,11	0,15
160	0,02	0,06	0,11	0,15
120	0,02	0,06	0,11	0,15

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – Solid Carbide NC-A TiAlN

Index	Solid Carbide NC Spot Drill Type NC-A TiAlN 10 716 ..., 10 717 ..., 10 718 ...					Solid Carbide NC Spot Drills, long Type NC-A TiAlN 10 724 ..., 10 726 ..., 10 727 ...				
	v_c m/min	> Ø 2–5 f mm/rev.	> Ø 5–8 f mm/rev.	> Ø 8–12 f mm/rev.	> Ø 12–20 f mm/rev.	v_c m/min	> Ø 2–5 f mm/rev.	> Ø 5–8 f mm/rev.	> Ø 8–12 f mm/rev.	> Ø 12–20 f mm/rev.
1.1	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
1.2	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
1.3	**75**	0,14	0,2	0,275	0,35	**75**	0,14	0,2	0,275	0,35
1.4	**65**	0,14	0,2	0,275	0,35	**65**	0,14	0,2	0,275	0,35
1.5	**65**	0,14	0,2	0,275	0,35	**65**	0,14	0,2	0,275	0,35
1.6	**65**	0,1	0,15	0,2	0,26	**65**	0,1	0,15	0,2	0,26
1.7	**65**	0,14	0,2	0,275	0,35	**65**	0,14	0,2	0,275	0,35
1.8	**50**	0,1	0,15	0,2	0,26	**50**	0,1	0,15	0,2	0,26
1.9										
1.10	**65**	0,1	0,15	0,2	0,26	**65**	0,1	0,15	0,2	0,26
1.11	**65**	0,1	0,15	0,2	0,26	**65**	0,1	0,15	0,2	0,26
1.12	**50**	0,1	0,15	0,2	0,26	**50**	0,1	0,15	0,2	0,26
1.13										
1.14										
1.15	**50**	0,1	0,15	0,2	0,26	**50**	0,1	0,15	0,2	0,26
1.16	**50**	0,1	0,15	0,2	0,26	**50**	0,1	0,15	0,2	0,26
2.1										
2.2										
2.3										
2.4										
2.5										
2.6										
2.7										
3.1	**70**	0,125	0,175	0,225	0,3	**70**	0,125	0,175	0,225	0,3
3.2	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
3.3	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
3.4	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
3.5	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
3.6	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
3.7	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
3.8	**70**	0,1	0,15	0,2	0,26	**70**	0,1	0,15	0,2	0,26
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12										
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WTX – Change Feed

Index	v_c m/min with through coolant	v_c m/min With external coolant	v_c m/min MMS	Change Feed UNI 10 925 ... > Ø 14,0 f mm/rev.	>Ø 17,5 f mm/rev.	>Ø 21,5 f mm/rev.	>Ø 26,0 f mm/rev.	Ø 32,0 f mm/rev.
1.1	90	80	80	0,42	0,46	0,51	0,54	0,55
1.2	90	80	80	0,42	0,46	0,51	0,54	0,55
1.3	90	80	80	0,42	0,46	0,51	0,54	0,55
1.4	90	75	75	0,49	0,55	0,60	0,64	0,66
1.5	90	80	80	0,42	0,46	0,51	0,54	0,55
1.6	80	70	70	0,52	0,58	0,64	0,68	0,69
1.7	90	75	75	0,49	0,55	0,60	0,64	0,66
1.8	65	55	55	0,39	0,43	0,48	0,50	0,51
1.9	90	75	75	0,49	0,55	0,60	0,64	0,66
1.10	90	75	75	0,49	0,55	0,60	0,64	0,66
1.11	65	55	55	0,39	0,43	0,48	0,50	0,51
1.12	70	60	60	0,44	0,49	0,54	0,58	0,59
1.13	55	50	50	0,36	0,40	0,44	0,47	0,48
1.14	55	50	50	0,36	0,40	0,44	0,47	0,48
1.15	55	50	50	0,36	0,40	0,44	0,47	0,48
1.16	70	60	60	0,44	0,49	0,54	0,58	0,59
2.1								
2.2								
2.3								
2.4								
2.5								
2.6								
2.7								
3.1	110	75	75	0,69	0,77	0,85	0,91	0,93
3.2	90	70	70	0,55	0,61	0,67	0,72	0,73
3.3	145	90	110	0,64	0,71	0,78	0,83	0,85
3.4	90	70	70	0,55	0,61	0,67	0,72	0,73
3.5	80	70	70	0,59	0,66	0,72	0,77	0,78
3.6	70	65	65	0,47	0,52	0,57	0,61	0,62
3.7	80	70	70	0,59	0,66	0,72	0,77	0,78
3.8	70	65	65	0,47	0,52	0,57	0,61	0,62
4.1								
4.2								
4.3								
4.4								
4.5								
4.6								
4.7								
4.8								
4.9								
4.10								
4.11								
4.12								
4.13								
4.14								
4.15								
4.16								
4.17								
4.18								
4.19								
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1								
6.2								
6.3								
6.4								
6.5								

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WTX – Change

Index	v_c m/min	Change UNI 10 919 ... > Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.	> Ø 32–41 f mm/rev.
1.1	100	0,22	0,26	0,29	0,32	0,40
1.2	120	0,35	0,41	0,47	0,51	0,64
1.3	100	0,28	0,32	0,36	0,40	0,50
1.4	80	0,24	0,28	0,32	0,35	0,44
1.5	90	0,28	0,32	0,36	0,40	0,50
1.6	80	0,24	0,28	0,32	0,35	0,44
1.7	80	0,24	0,28	0,32	0,35	0,44
1.8	60	0,20	0,23	0,26	0,28	0,35
1.9	90	0,28	0,32	0,36	0,40	0,50
1.10	60	0,20	0,23	0,26	0,28	0,35
1.11	50	0,18	0,21	0,23	0,26	0,32
1.12	60	0,20	0,23	0,26	0,28	0,35
1.13	60	0,20	0,23	0,26	0,28	0,35
1.14	50	0,18	0,21	0,23	0,26	0,32
1.15	50	0,20	0,23	0,26	0,28	0,35
1.16	50	0,20	0,23	0,26	0,28	0,35
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	90	0,34	0,40	0,46	0,51	0,64
3.2	60	0,30	0,35	0,40	0,44	0,55
3.3	80	0,39	0,45	0,51	0,57	0,71
3.4	55	0,30	0,35	0,40	0,44	0,55
3.5	110	0,43	0,50	0,58	0,63	0,78
3.6	90	0,39	0,45	0,51	0,57	0,71
3.7	110	0,39	0,45	0,51	0,57	0,71
3.8	90	0,30	0,35	0,40	0,44	0,55
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

		Change P 10 923 ...				
Index	v_c m/min	> Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.	> Ø 32–41 f mm/rev.
1.1	110	0,25	0,28	0,33	0,40	0,46
1.2	130	0,40	0,45	0,54	0,64	0,73
1.3	110	0,32	0,35	0,41	0,49	0,57
1.4	90	0,28	0,31	0,37	0,44	0,50
1.5	100	0,32	0,35	0,41	0,49	0,57
1.6	90	0,28	0,31	0,37	0,44	0,50
1.7	90	0,28	0,31	0,37	0,44	0,50
1.8	65	0,23	0,25	0,30	0,35	0,40
1.9	100	0,32	0,35	0,41	0,49	0,57
1.10	65	0,23	0,25	0,30	0,35	0,40
1.11	55	0,21	0,23	0,26	0,31	0,37
1.12	65	0,23	0,25	0,30	0,35	0,40
1.13	65	0,23	0,25	0,30	0,35	0,40
1.14	55	0,21	0,23	0,26	0,31	0,37
1.15	55	0,21	0,23	0,26	0,31	0,37
1.16	55	0,21	0,23	0,26	0,31	0,37
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	100	0,37	0,42	0,51	0,60	0,70
3.2	65	0,33	0,37	0,44	0,52	0,60
3.3	90	0,43	0,47	0,56	0,67	0,78
3.4	60	0,33	0,37	0,44	0,52	0,60
3.5	120	0,47	0,53	0,64	0,76	0,86
3.6	100	0,43	0,47	0,56	0,67	0,78
3.7	120	0,43	0,47	0,56	0,67	0,78
3.8	100	0,33	0,37	0,44	0,52	0,60
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

For through holes, the feed must be reduced by approx. 30 % when exiting the hole. For more accurate positioning, precentre with a 142° NC spot drill.
With Type VA 5xD and 8xD, enter the hole with reduced feed of 0,05–0,06 mm/revolution.

Cutting data standard values – WTX – Change

	Change VA 10 921 ...					Change GG 10 924 ...				
Index	v_c m/min	> Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.	v_c m/min	> Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.
1.1	100	0,22	0,26	0,29	0,32					
1.2	120	0,35	0,41	0,47	0,51					
1.3	100	0,28	0,32	0,36	0,40					
1.4	80	0,24	0,28	0,32	0,35					
1.5	90	0,28	0,32	0,36	0,40					
1.6	80	0,24	0,28	0,32	0,35					
1.7	80	0,24	0,28	0,32	0,35					
1.8	60	0,20	0,23	0,26	0,28					
1.9	90	0,28	0,32	0,36	0,40					
1.10	60	0,20	0,23	0,26	0,28					
1.11	50	0,18	0,21	0,23	0,26					
1.12	60	0,20	0,23	0,26	0,28					
1.13	60	0,20	0,23	0,26	0,28					
1.14	50	0,18	0,21	0,23	0,26					
1.15	50	0,20	0,23	0,26	0,28					
1.16	50	0,20	0,23	0,26	0,28					
2.1	**60**	0,17	0,19	0,23	0,27					
2.2	**50**	0,15	0,17	0,20	0,24					
2.3	**60**	0,13	0,15	0,18	0,22					
2.4	**40**	0,13	0,15	0,18	0,22					
2.5	**35**	0,13	0,15	0,18	0,22					
2.6	**50**	0,15	0,17	0,20	0,24					
2.7	**35**	0,12	0,13	0,16	0,19					
3.1	90	0,34	0,40	0,46	0,51	**110**	0,44	0,49	0,60	0,71
3.2	60	0,30	0,35	0,40	0,44	**75**	0,39	0,43	0,52	0,62
3.3	80	0,39	0,45	0,51	0,57	**100**	0,51	0,56	0,66	0,79
3.4	55	0,30	0,35	0,40	0,44	**70**	0,39	0,43	0,52	0,62
3.5	110	0,43	0,50	0,58	0,63	**135**	0,56	0,62	0,75	0,89
3.6	90	0,39	0,45	0,51	0,57	**110**	0,51	0,56	0,66	0,79
3.7	110	0,39	0,45	0,51	0,57	**135**	0,51	0,56	0,66	0,79
3.8	90	0,30	0,35	0,40	0,44	**110**	0,39	0,43	0,52	0,62
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12										
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Index	v_c m/min	Change AL 10 922 ... > Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
1.10					
1.11					
1.12					
1.13					
1.14					
1.15					
1.16					
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1					
3.2					
3.3					
3.4					
3.5					
3.6					
3.7					
3.8					
4.1	350	0,30	0,37	0,50	0,65
4.2	300	0,30	0,37	0,50	0,65
4.3	250	0,37	0,46	0,63	0,82
4.4	200	0,30	0,37	0,50	0,65
4.5	150	0,27	0,33	0,45	0,59
4.6	180	0,27	0,33	0,45	0,59
4.7	140	0,27	0,33	0,45	0,59
4.8	140	0,27	0,33	0,45	0,59
4.9	130	0,27	0,33	0,45	0,59
4.10	120	0,27	0,33	0,45	0,59
4.11	200	0,42	0,52	0,71	0,93
4.12	200	0,37	0,46	0,63	0,82
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
5.10					
5.11					
6.1					
6.2					
6.3					
6.4					
6.5					

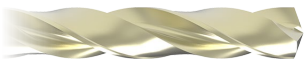
With through-holes the feedrate should be reduced at the break out by approx. 30 %. Use 142° NC Spot Drill to ensure positional accuracy.
Use reduced feedrate of 0,05–0,06 mm/U when using type VA 5xD and 8xD drill.

Type overview – WTX high performance drilling tools

- good self-centring
- optimum swarf control
- precise radial run-out
- excellent alignment precision
- high-quality surface finish
- close drilling tolerances
- limited hardening of peripheral zones of the material
- good chip evacuation even with large drilling depths

For all products that are marked with the video icon, a relevant product video can be viewed at **cutting.tools/uk/type-overview-wtx/**

UNI DRAGONSKIN



- high-performance solid carbide drill for universal application, for all materials up to 1200 N/mm²

Feed UNI DRAGONSKIN



- solid carbide high feed drills with 3 cutting edges
- very good positional accuracy

Speed UNI DRAGONSKIN



- for double the cutting speed
- asymetric point geometry permits performance improvement when drilling steel and cast iron by up to 60 %

Quattro 4F DRAGONSKIN



- with additional guide land for best alignment accuracy, concentricity and positional accuracy

180



- for inclined surfaces up to 45° and flat bottom holes

TB



- solid carbide deep hole drill, up to 50xD without peck drilling
- 4 or 6 facet head geometry for excellent alignment accuracy

VA



- first choice for corrosion and acid resistant seels
- for volume production

AL



- solid carbide high performance drill specailly for the machining of aluminium, copper and brass
- 6 facet geometry for excellent hole quality

GG



- for cast materials to 250 HB
- straight flutes

Ti DRAGONSKIN



- specialist for cost effective machining of Titanium, Titanium Alloys and Heat Resistant Alloys

H DRAGONSKIN



- high-performance drill for hardened steels from 45 to 70 HRC

MINI



- solid carbide micro drill for the precise manufacture of very small holes from Ø 0,1 mm to 2,9 mm

Change



- replaceable head drills with the performance level of a solid carbide drill, from Ø 12,0 mm to 41,0 mm

BR



- solid carbide high performance drill reamer
- drill and ream in one operation

Change Feed



- exchangeable head drill with three cutting edges for even greater performance, from Ø 14.0 mm to 32.0 mm

SB DRAGONSKIN



- core hole plus countersink for tapping and thread forming

Important application criteria for WTX drills

Axial offset
The axial run-out of the axis between a rotating work piece and a stationary tool must not exceed 0.04 mm. A larger run-out reduces tool life and drilling quality and can lead to tool breakage.

Run-out
The concentricity error when the tool is rotating should not exceed 0.015 mm.

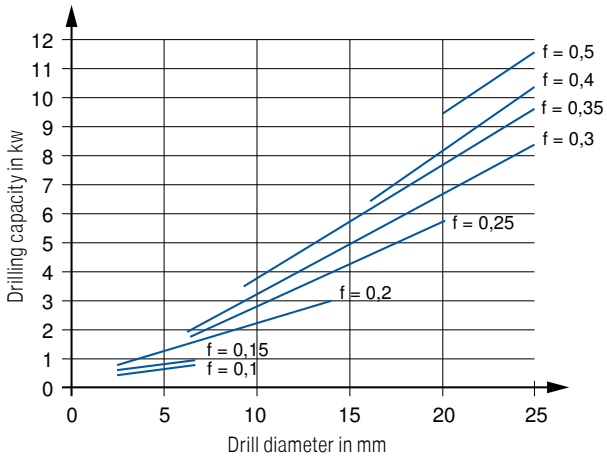
With internally cooled tools the coolant pressure should be min. 20 bar – see diagram bottom right
High-quality semi-synthetic or emulsion coolants with min. 10 % oil content and EP additives are recommended. This allows better life, and achieves higher tolerance accuracy and better surface quality. A fine filter system is recommended to prevent possible clogging of the coolant channels.

Drilling into solid
Due to the geometric design of the solid carbide drills, they are suitable for drilling into solid material.
With solid carbide drills ≤ 12xD drilling can be carried out in solid material without the need for centering and spot drilling operations.

Flute run-out
When using WTX drills a safety margin of at least 1 to 1.5xD must be maintained between the work piece and the flute outlet groove of the drill to ensure optimum chip evacuation and prevent chip clogging and tool fracture.

Peck drilling
Pecking should be avoided as there is a very high risk of fracture caused by chips left behind or flushed into the hole.

Feed rate f in mm/rev.
Drilling capacity relative to the diameter: v_c = 80 m/min.
Tensile strength of the material = 600 N/mm²



Secondary tools
If a smaller diameter WTX drill is used as a following tool in the same hole, it should have a smaller drill point angle to ensure that it centres properly.

Interrupted Cuts
Reduce the feedrate on entry to and from cross holes

Drill exit
To avoid severe burr formation, reduce v_c and f.

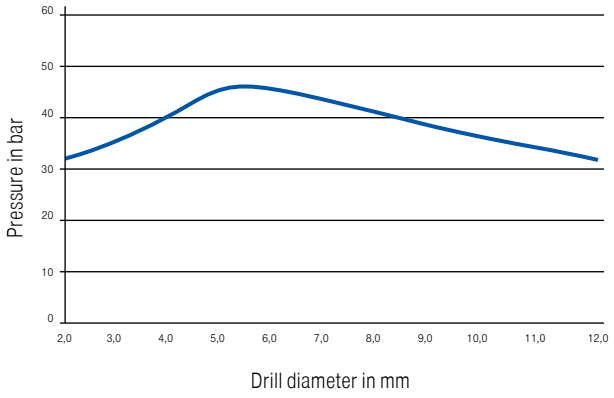
Workpiece clamping
To avoid tool breakages, care must be taken to ensure a proper workpiece clamping without vibration or workpiece deflection.

Tool holding
With optimum clamping high alignment accuracy and tolerances (IT7-8) are possible.
Due to the high surface quality reaming operations can often be dispensed with.

Machine Requirements
Please note the performance diagram (below left)

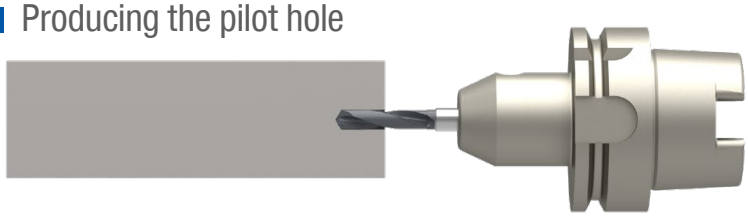
Cutting data table
To control the chip length (comma chip) the feed rates should be no lower than the lower limits quoted in the cutting data table.

Coolant pressure



Strategy for the production of deep holes with the WTX solid carbide deep hole drill

1 Producing the pilot hole



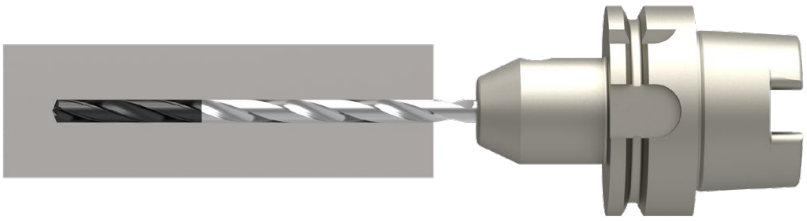
- For the pilot hole, we recommend a WTX drill 3xD / 5xD with the same nominal diameter
- The pilot hole should be 0,01–0,03 mm larger in diameter and at least 3xD deep.
- From a hole depth of 40xD, we recommend a pilot hole of 12xD with our WTX Quattro 4F.

2 Movement of the deep hole drill into the pilot hole



- Move the WTX deep hole drill without coolant pressure and with reduced speed (n = 200–300 rpm) into the pilot hole at a feed of v_f = 1000 mm/min
- Approx. 2 mm before reaching the bottom of the hole (end of the pilot hole), stop the feed, switch on the coolant and wait for a short time until the recommended pressure is reached. Then increase the spindle speed to the recommended speed as smoothly as possible.

3 Drilling to required depth without pecking



- Reduce feed rate for cross holes and at drill exit by 50 %.

4 Retracting the drill



- Retract the drill to approximately the depth of the pilot hole.
- Reduce the rpm to a low speed (n = 200–300 U/min).
- Use normal rapid feed (V_f = 3000 mm/min) when exiting the hole.

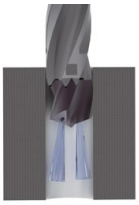
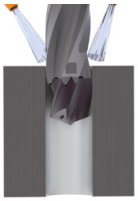
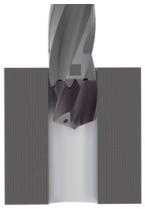
For horizontal deep drilling operations from 40xD, move the deep hole drill into the hole counter-clockwise at 200 rpm. This prevents sagging of the deep hole drill.

It is essential to ensure that deep hole drills never run unsupported at full speed in the machine!

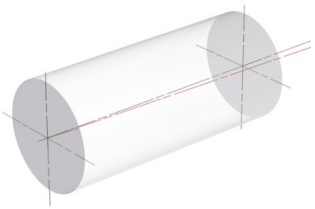
Application notes for WTX – Change Feed and WTX – Change exchangeable head drills

Coolant conditions

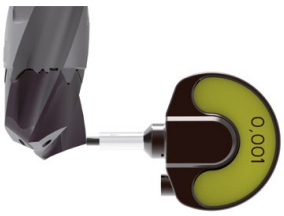
Coolant pressure dependent on drilling depth:

with thro' coolant		with external cooling		Without coolant supply
				
1xD: 8 bar	✓	1xD: 8 bar	✓	
3xD: 8 bar	✓	3xD: 8 bar	✓	
5xD: 12 bar	✓	5xD: 12 bar	✗	max. bore depth: 3xD
8xD: 25 bar	✓	8xD: 25 bar	✗	
12xD: 25 bar	✓	12xD: 25 bar	✗	

Runout accuracy

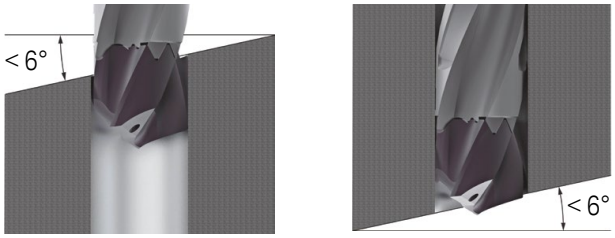


max. 0,02 mm



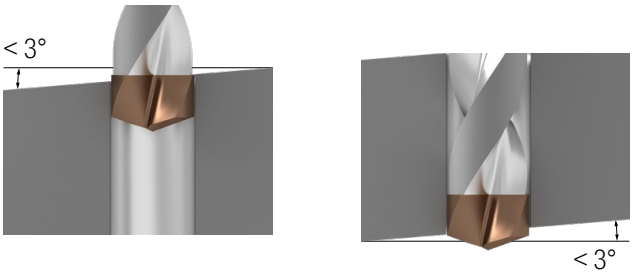
max. 0,04 mm

Max. entry and exit angle for the WTX – Change Feed



When entering and exiting angled surfaces, reduce v_f by 50 %.

Max. entry and exit angle for the WTX – Change



When entering and exiting angled surfaces, reduce v_f by 50 %.

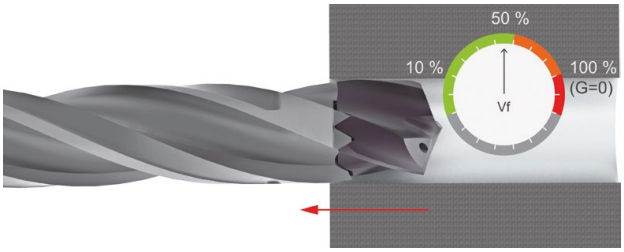
Exiting a through hole

▲ WTX Change Feed and WTX Change

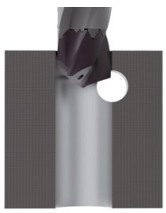
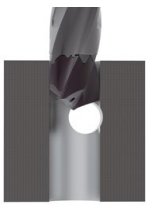
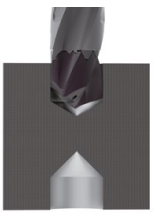
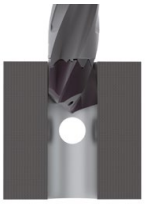
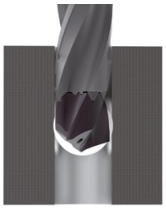
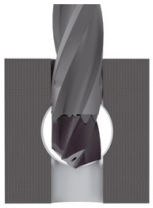


Do not retract at rapid feedrate

For withdrawal, a rate of 5 times the value of the feed rate is recommended.



Machining situations

Offset cross hole point is engaged	*Offset cross hole point is not engaged*	*Breakthrough at counterbore*	*Hole on centre and smaller Ø*	*Hole on centre and same Ø*	*Hole on centre and larger Ø*
					
WTX – Change Feed ✓	*WTX – Change Feed* ✗	*WTX – Change Feed* ✓	*WTX – Change Feed* ✓	*WTX – Change Feed* ✗	*WTX – Change Feed* ✗
WTX – Change ✓	*WTX – Change* ✗	*WTX – Change* ✗	*WTX – Change* ✓	*WTX – Change* ✗	*WTX – Change* ✗

Recommendations for solid carbide drilling operations

Reasons for ...	Solutions ...
... Built-up edge	
v_c too low	Increase v_c
Too much material taken off at main cutting edge	Reduce cut
Uncoated cutting edge	Coating
... Corners broken off	
Unstable conditions	Change clamping
Run out too high	Optimize radial run-out
Interrupted cut	Reduce feed rate
... Heavy flank wear	
v_c too low	Reduce v_c
Feed rate too low	Increase feed rate
Clearance angle too small	Increase clearance angle
... Scoring on the tool flanks	
Unstable conditions	Change clamping
Run out too high	Correct radial run-out
Interrupted cut	Reduce feed rate
Abrasive materials	Thicker emulsion or oil
... Round chamfer wear	
Unstable conditions	More stable clamping
Run out too high	Check radial run-out
Back taper too small	Increase back taper
Wrong emulsion or too thin emulsion	Thicker emulsion or oil
... Material broken off at main cutting edge	
Unstable conditions	More stable clamping
Interrupted cut	Reduce feed rate
Wrong type of tool	Optimize tool
Max. tool life has been exceeded	Change tool earlier
... Heavy wear at chisel edge	
v_c too low	Increase v_c
Feed rate too high	Reduce feed rate
Too much material taken off at main cutting edge	Optimize cutting edge
... Material broken off at intersections, drill point and main cutting edge	
Clearance angle too small	Increase clearance angle
Too much material taken off at main cutting edge	Optimize cutting edge
Wrong tool	Other tool
... Plastic deformation of cutting corner	
v_c too high	Reduce v_c
Insufficient emulsion	Increase amount of coolant
Wrong or no corner chamfer	Correct corner chamfer
... Poor surface quality	
Run out too high	Check radial run-out
Insufficient cooling	More emulsion
Unstable conditions	Change toolholding
... Heavy burring on hole exit	
Feed too high	Reduce feed rate
Excessive honing of main cutting edge	Reduce cutting edge

Coatings

Ti800
- AlTiN nanolayer coating
- Maximum application temperature: 1100 °C

Ti700
- TiAlN multilayer coating
- Maximum application temperature: 1100 °C

TiAlN
- TiAlN multilayer coating
- Maximum application temperature: 900 °C

TiB
- TiB monolayer coating
- Specially for aluminium machining
- Maximum application temperature: 900 °C

TiSi
- TiSi multilayer coating
- Maximum application temperature: 800 °C

Ti1050
- Ti multilayer coating
- HV0.005 = 3300
- Coefficient of friction (against steel) = 0.3–0.5
- Maximum application temperature: 900 °C

Ti750
- TiAlN nanolayer coating
- Maximum application temperature: 1000 °C

DLC
- Diamond-like carbon coating
- Specially for machining non-ferrous metals
- Maximum application temperature: 400 °C

DPX74S DRAGONSKIN
- Special TiAlN nanolayer coating
- Maximum application temperature: 1000 °C

DPA54 DRAGONSKIN
- Special multilayer coating
- High hardness and heat resistance
- Maximum application temperature: 800 °C

DPX64S DRAGONSKIN
- TiAlN monolayer coating
- Perfected for hardened materials
- Optimised coating and surface structure
- Maximum application temperature: 800 °C

DPX14S DRAGONSKIN
- TiAlN nanolayer coating
- Coefficient of friction (dry, against steel) = 0.35
- Maximum application temperature: 1000 °C

DPX64U DRAGONSKIN
- Special TiAlN monolayer coating
- Perfected for hardened materials
- Optimised coating and surface structure
- Maximum application temperature: 800 °C

New products for machining technicians

NEW KUB Pentron



- Ø 14–46 mm
- Cyl. shank, ABS, PSC
- 2xD, 3xD, 4xD, 5xD

6–18

NEW KUB 100



- Ø 14–27 mm
- Cyl. shank
- 3xD

27

NEW KUB Trigon



- Ø 14–44 mm
- Combi shank, ABS
- 2xD, 3xD, 4xD

29–34

NEW Indexable inserts for KUB Pentron



BK8425

- Universal PVD grade



BK6115

- Wear resistant
  CVD-coated indexable insert

19

NEW Indexable inserts for KUB Trigon



BK8425

- Universal PVD grade



BK6115

- Wear resistant
  CVD-coated indexable insert

35

Programme Extension

MaxiDrill 900



- Expansion to include intermediate Ø for 4xD and 5xD

20–26



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling 3
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

List of contents

Symbol explanation	2
Application tips – eccentric sleeves	3
Toolfinder	4+5
Product programme	6–38
Technical Information	
Material examples	39
Cutting Data	40–50
Maximum Offset Range	51–53
Technical data for turning – MaxiDrill 900	52
Coding example, coolant supply	54
Problems / possible causes / solutions	55
Application and Grade Comparison	56+57

KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

KOMET \ Standard

Quality tools for standard applications.

The quality tools of the **KOMET Standard** product line are high quality, high performance, reliable and enjoy the highest level of trust among our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank

C Cylindrical shank with clamping flat
Guarantees optimum clamping of the tool and can be clamped in every standard adapter

K Drill with combi shank
This drill shank has two clamping flats (DIN 6535HE, DIN 6595) that guarantee pull-out protection and good face contact of the drill. Both Weldon and Whistle Notch adapters can be used.

ABS Drill with ABS connection
The ABS connection from Komet is a modular coupling system for rotating tools and stationary tools, and offers a number of advantages, such as improved force transmission

PSC Drill with polygonal shank
The polygonal shank offers the best rigidity during the transmission of force from the drill to the adapter. The tapered polygonal shape easily absorbs torsional forces and bending forces



Version



Drill with thro' coolant supply
The tried-and-tested thro' coolant system guarantees a reduction in heat at the cutting edges of the tool as well as improved chip removal

Designation		Pages
Adjuster with ABS connection		38

Adapters can be found in → **Chapter 16 Adapters.**

Application tips – eccentric sleeves

Users of rotating tools can now enjoy greater flexibility.
Using the eccentric sleeves, you can vary and adjust the diameter of the hole by +/- 0.3 mm with ease.

Two types of eccentric sleeve are available:
One for use with the new indexable insert drill adapter and one for use with the existing Weldon adapter.
The difference lies solely in the design and position of the slots for the adapter's clamping screws.
There are four sizes per type, which are tailored to the shank diameter.



Eccentric sleeve for indexable insert drill adapter



Eccentric sleeve for Weldon adapter

Designation		Pages
Eccentric sleeves for indexable insert drill adapters		37
Eccentric sleeves for Weldon adapters		37



Toolfinder

● = **Main Application**
○ = Extended application
- = Not possible

KUB Pentron

The specialist for large hole depths



- ▲ The all-rounder for process-secure drilling under a wide variety of conditions
- ▲ Ideal for extreme machining situations

Boring depth	Drilling through a transverse hole	Stack plate drilling	Drilling on uneven surfaces	Drilling	Spot drilling an edge	Spot drilling a convex surface	Spot drilling angled surfaces	Spot drilling a pointed contour	Chain drilling	Drilling through a centre or pre-op
2xD	●	●	●	○	●	●	●	●	●	●
3xD	●	●	●	○	●	●	●	●	●	●
4xD	●	○	○	-	●	●	●	●	○	●
5xD	●	○	○	-	●	○	●	○	-	○
3xD	●	●	●	○	●	●	●	●	●	●
4xD	●	○	○	-	●	●	●	●	○	●
5xD	●	○	○	-	●	○	●	○	-	○
3xD	●	●	●	○	●	●	●	●	●	●

MaxiDrill 900

The specialist for high productivity in rough machining



- ▲ Provides perfect drilling quality even under enormous loads
- ▲ Ideal for large drilling depths: The high feed rates increase productivity
- ▲ For stable machining situations

2xD	●	●	●	○	●	●	●	●	○	●
3xD	●	●	●	○	●	●	●	●	○	●
4xD	●	○	○	○	●	●	●	●	○	●
5xD	●	○	○	○	●	●	●	●	○	●

KUB 100

Ideal for robust machining situations



- ▲ The high performance all-rounder for outstanding productivity and reliability
- ▲ Offers consistent hole quality and a constant diameter across all materials and feed rates

3xD	●	●	●	○	●	●	●	●	●	●

KUB Trigon

The solution for unstable conditions and high accuracy



- ▲ Ideal for machining under unstable conditions
- ▲ Well-suited to machining on less powerful machines
- ▲ The first choice for creating dimensionally accurate holes

2xD	●	-	●	○	○	●	●	○	●	○
3xD	○	-	○	○	○	○	○	○	○	○
4xD	○	-	○	-	-	○	○	-	○	○
2xD	●	-	●	○	○	●	●	○	●	○
3xD	○	-	○	○	○	○	○	○	○	○
4xD	○	-	○	-	-	○	○	-	○	○

MaxiDrill Classic

The drilling tool for universal application



- ▲ Ideal for use on machines with limited power
- ▲ Suitable for use under unstable conditions

2xD	●	-	●	-	-	○	○	-	-	●
3xD	●	-	●	-	-	○	○	-	-	●
4xD	●	-	●	-	-	○	○	-	-	●

Shank	Diameter Ø	KOMET \ Performance	KOMET \ Standard	Insert type		No. of cutting edges	Grade	Steel	Stainless steel	Cast iron	Non ferrous metals	Heat resistant alloys	Hardened materials	KOMET \ Performance
		Pages												Pages
C	14–46	6+7			SOGX	4	-01 BK6115	●		●			○	19
C	14–46	8+9			SOGX	4	-01 BK8425	●	●	●				19
C	14–46	10+11			SOGX	4	-01 BK7935	●	●	○	○	○		🛒
C	14–46	12+13			SOGX	4	-01 BK7710				●	○		🛒
ABS	14–30	14												
ABS	14–30	15												
ABS	14–30	16			SOGX	4	-01 BK6425	●	●	○				🛒
PSC	14–30	17+18												
C	12–63	20+21			SONT	2 / 4	-M30 CTCP420 -M30 DCX1420	●	○	●				28
C	12–63	22+23												
C	12–54	24+25			SONT	2 / 4	-M30 CTPP430 -M30 CCN1430	●	●	○	○	○		28
C	12–41	26												
					SONT	2 / 4	-M30 CTCP420 -M30 DCX1420	●	○	●				28
C	14–27	27												
					SONT	2 / 4	-M30 CTPP430 -M30 CCN1430	●	●	○	○	○		28
K	14–44	29			WOEX	3	-01 BK8425	●	●	●				35
K	14–44	30			WOEX	3	-03 BK8425	●	●	●				35
K	14–35	31			WOEX	3	-13 BK8425	●	●	●				35
ABS	14–44	32			WOEX	3	-01 BK6115	●		●			○	35
ABS	14–44	33			WOEX	3	-01 BK7935	●	●	○	○	○		🛒
ABS	14–44	34			WOEX	3	-01 BK62			●			○	🛒
					WOEX	3	-11 BK77				●	●		🛒
C	14–53		🛒											
C	14–50		🛒											
C	18–50		🛒											

🛒 MaxiDrill Classic and specialised indexable inserts can be found in our online shop at cuttingtools.ceratizit.com

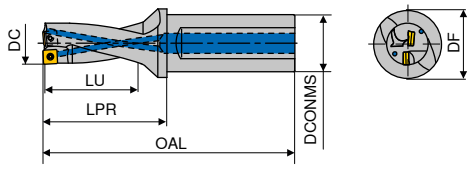
KUB Pentron

Scope of supply:

Indexable Insert Drill incl. clamping screws

≤ 2xD

C





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 872 ... EUR	
KUB-P.2D.140.R.04-C20	U4201400	14,0	20	30	91	28	41	0,38	SOGX 040204	338,00	14001
KUB-P.2D.145.R.04-C20	U4201450	14,5	20	30	94	30	44	0,38	SOGX 040204	319,30	14501
KUB-P.2D.150.R.04-C20	U4201500	15,0	20	30	94	30	44	0,38	SOGX 040204	319,30	15001
KUB-P.2D.155.R.04-C20	U4201550	15,5	20	30	98	32	48	0,38	SOGX 040204	319,30	15501
KUB-P.2D.160.R.04-C20	U4201600	16,0	20	30	98	32	48	0,38	SOGX 040204	319,30	16001
KUB-P.2D.165.R.05-C20	U4201650	16,5	20	30	101	34	51	0,62	SOGX 050204	319,30	16501
KUB-P.2D.170.R.05-C20	U4201700	17,0	20	30	101	34	51	0,62	SOGX 050204	325,50	17001
KUB-P.2D.175.R.05-C25	U4211750	17,5	25	30	109	36	53	0,62	SOGX 050204	325,50	17502
KUB-P.2D.180.R.05-C25	U4211800	18,0	25	30	109	36	53	0,62	SOGX 050204	325,50	18002
KUB-P.2D.185.R.06-C25	U4211850	18,5	25	30	112	38	56	1,01	SOGX 060206	325,50	18502
KUB-P.2D.190.R.06-C25	U4211900	19,0	25	30	112	38	56	1,01	SOGX 060206	332,80	19002
KUB-P.2D.195.R.06-C25	U4211950	19,5	25	30	114	40	58	1,01	SOGX 060206	332,80	19502
KUB-P.2D.200.R.06-C25	U4212000	20,0	25	30	114	40	58	1,01	SOGX 060206	332,80	20002
KUB-P.2D.205.R.07-C25	U4212050	20,5	25	30	117	42	61	1,01	SOGX 07T208	354,60	20502
KUB-P.2D.210.R.07-C25	U4212100	21,0	25	30	117	42	61	1,01	SOGX 07T208	354,60	21002
KUB-P.2D.215.R.07-C25	U4212150	21,5	25	30	119	44	63	1,01	SOGX 07T208	354,60	21502
KUB-P.2D.220.R.07-C25	U4212200	22,0	25	30	119	44	63	1,01	SOGX 07T208	354,60	22002
KUB-P.2D.225.R.07-C25	U4212250	22,5	25	30	122	46	66	1,01	SOGX 07T208	354,60	22502
KUB-P.2D.230.R.07-C25	U4212300	23,0	25	30	122	46	66	1,01	SOGX 07T208	354,60	23002
KUB-P.2D.235.R.08-C32	U4222350	23,5	32	39	128	48	68	1,28	SOGX 080308	384,80	23503
KUB-P.2D.240.R.08-C32	U4222400	24,0	32	39	128	48	68	1,28	SOGX 080308	384,80	24003
KUB-P.2D.245.R.08-C32	U4222450	24,5	32	39	131	50	71	1,28	SOGX 080308	384,80	24503
KUB-P.2D.250.R.08-C32	U4222500	25,0	32	39	131	50	71	1,28	SOGX 080308	384,80	25003
KUB-P.2D.255.R.08-C32	U4222550	25,5	32	39	133	52	73	1,28	SOGX 080308	384,80	25503
KUB-P.2D.260.R.08-C32	U4222600	26,0	32	39	133	52	73	1,28	SOGX 080308	384,80	26003
KUB-P.2D.265.R.09-C32	U4222650	26,5	32	39	136	54	76	2,25	SOGX 09T308	406,60	26503
KUB-P.2D.270.R.09-C32	U4222700	27,0	32	39	136	54	76	2,25	SOGX 09T308	406,60	27003
KUB-P.2D.275.R.09-C32	U4222750	27,5	32	39	138	56	78	2,25	SOGX 09T308	406,60	27503
KUB-P.2D.280.R.09-C32	U4222800	28,0	32	39	138	56	78	2,25	SOGX 09T308	406,60	28003
KUB-P.2D.285.R.09-C32	U4222850	28,5	32	39	141	58	81	2,25	SOGX 09T308	406,60	28503
KUB-P.2D.290.R.09-C32	U4222900	29,0	32	39	141	58	81	2,25	SOGX 09T308	406,60	29003
KUB-P.2D.295.R.09-C32	U4222950	29,5	32	39	143	60	83	2,25	SOGX 09T308	406,60	29503
KUB-P.2D.300.R.09-C32	U4223000	30,0	32	39	143	60	83	2,25	SOGX 09T308	406,60	30003
KUB-P.2D.310.R.10-C40	U4233100	31,0	40	50	154	62	86	2,8	SOGX 100408	442,00	31004
KUB-P.2D.320.R.10-C40	U4233200	32,0	40	50	156	64	88	2,8	SOGX 100408	442,00	32004
KUB-P.2D.330.R.10-C40	U4233300	33,0	40	50	159	66	91	2,8	SOGX 100408	442,00	33004
KUB-P.2D.340.R.11-C40	U4233400	34,0	40	50	161	68	93	2,8	SOGX 110408	462,80	34004
KUB-P.2D.350.R.11-C40	U4233500	35,0	40	50	164	70	96	2,8	SOGX 110408	462,80	35004
KUB-P.2D.360.R.11-C40	U4233600	36,0	40	50	166	72	98	2,8	SOGX 110408	462,80	36004
KUB-P.2D.370.R.11-C40	U4233700	37,0	40	50	169	74	101	2,8	SOGX 110408	462,80	37004
KUB-P.2D.380.R.12-C40	U4233800	38,0	40	50	171	76	103	6,25	SOGX 120408	476,30	38004
KUB-P.2D.390.R.12-C40	U4233900	39,0	40	50	174	78	106	6,25	SOGX 120408	476,30	39004
KUB-P.2D.400.R.12-C40	U4234000	40,0	40	50	176	80	108	6,25	SOGX 120408	476,30	40004
KUB-P.2D.410.R.12-C40	U4234100	41,0	40	50	179	82	111	6,25	SOGX 120408	476,30	41004
KUB-P.2D.420.R.12-C40	U4234200	42,0	40	50	181	84	113	6,25	SOGX 120408	476,30	42004

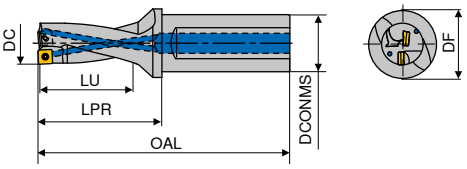
Continued on next page

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 2xD

C





3

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 872 ... EUR	
KUB-P.2D.430.R.13-C40	U4234300	43,0	40	50	184	86	116	6,25	SOGX 130508	476,30	**43004**
KUB-P.2D.440.R.13-C40	U4234400	44,0	40	50	186	88	118	6,25	SOGX 130508	476,30	**44004**
KUB-P.2D.450.R.13-C40	U4234500	45,0	40	50	189	90	121	6,25	SOGX 130508	476,30	**45004**
KUB-P.2D.460.R.13-C40	U4234600	46,0	40	50	191	92	123	6,25	SOGX 130508	476,30	**46004**


Y7
Screwdriver


Y7
Key D


W7
Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	**057**				M1,8x3,8 - 05IP	2,36	**10100**
16,5 - 18				T06 - IP	10,39	**123**	M2,0x4,3 - 06IP	2,36	**10000**
18,5 - 23				T06 - IP	10,39	**123**	M2,2x5,5 - 06IP	2,36	**10700**
23,5 - 26				T08 - IP	10,20	**125**	M2,5x6,3 - 08IP	2,36	**10800**
26,5 - 30				T08 - IP	10,20	**125**	M3,0x7,6 - 08IP	2,36	**10200**
31 - 37				T15 - IP	11,89	**128**	M3,5x7,5 - 15IP	2,36	**10300**
38 - 46				T20 - IP	12,54	**129**	M4,5x10,0 - 20IP	2,36	**10400**

Suitable adapters can be found in → **Chapter 16 Adapters.**

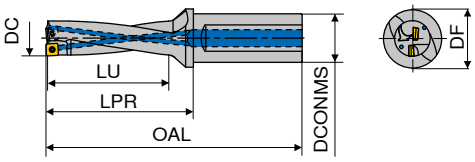
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD



C





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 873 ... EUR	
KUB-P.3D.140.R.04-C20	U4301400	14,0	20	30	105	42	55	0,38	SOGX 040204	331,80	14001
KUB-P.3D.145.R.04-C20	U4301450	14,5	20	30	109	45	59	0,38	SOGX 040204	331,80	14501
KUB-P.3D.150.R.04-C20	U4301500	15,0	20	30	109	45	59	0,38	SOGX 040204	331,80	15001
KUB-P.3D.155.R.04-C20	U4301550	15,5	20	30	114	48	64	0,38	SOGX 040204	331,80	15501
KUB-P.3D.160.R.04-C20	U4301600	16,0	20	30	114	48	64	0,38	SOGX 040204	331,80	16001
KUB-P.3D.165.R.05-C20	U4301650	16,5	20	30	118	51	68	0,62	SOGX 050204	331,80	16501
KUB-P.3D.170.R.05-C20	U4301700	17,0	20	30	118	51	68	0,62	SOGX 050204	340,10	17001
KUB-P.3D.175.R.05-C25	U4311750	17,5	25	30	127	54	71	0,62	SOGX 050204	340,10	17501
KUB-P.3D.180.R.05-C25	U4311800	18,0	25	30	127	54	71	0,62	SOGX 050204	340,10	18001
KUB-P.3D.185.R.06-C25	U4311850	18,5	25	30	131	57	75	1,01	SOGX 060206	340,10	18501
KUB-P.3D.190.R.06-C25	U4311900	19,0	25	30	131	57	75	1,01	SOGX 060206	350,50	19001
KUB-P.3D.195.R.06-C25	U4311950	19,5	25	30	134	60	78	1,01	SOGX 060206	350,50	19501
KUB-P.3D.200.R.06-C25	U4312000	20,0	25	30	134	60	78	1,01	SOGX 060206	350,50	20001
KUB-P.3D.205.R.07-C25	U4312050	20,5	25	30	138	63	82	1,01	SOGX 07T208	373,40	20501
KUB-P.3D.210.R.07-C25	U4312100	21,0	25	30	138	63	82	1,01	SOGX 07T208	373,40	21001
KUB-P.3D.215.R.07-C25	U4312150	21,5	25	30	141	66	85	1,01	SOGX 07T208	373,40	21501
KUB-P.3D.220.R.07-C25	U4312200	22,0	25	30	141	66	85	1,01	SOGX 07T208	373,40	22002
KUB-P.3D.225.R.07-C25	U4312250	22,5	25	30	145	69	89	1,01	SOGX 07T208	373,40	22502
KUB-P.3D.230.R.07-C25	U4312300	23,0	25	30	145	69	89	1,01	SOGX 07T208	373,40	23002
KUB-P.3D.235.R.08-C32	U4322350	23,5	32	39	152	72	92	1,28	SOGX 080308	404,60	23503
KUB-P.3D.240.R.08-C32	U4322400	24,0	32	39	152	72	92	1,28	SOGX 080308	404,60	24003
KUB-P.3D.245.R.08-C32	U4322450	24,5	32	39	156	75	96	1,28	SOGX 080308	404,60	24503
KUB-P.3D.250.R.08-C32	U4322500	25,0	32	39	156	75	96	1,28	SOGX 080308	404,60	25003
KUB-P.3D.255.R.08-C32	U4322550	25,5	32	39	159	78	99	1,28	SOGX 080308	404,60	25503
KUB-P.3D.260.R.08-C32	U4322600	26,0	32	39	159	78	99	1,28	SOGX 080308	404,60	26003
KUB-P.3D.265.R.09-C32	U4322650	26,5	32	39	163	81	103	2,25	SOGX 09T308	425,40	26503
KUB-P.3D.270.R.09-C32	U4322700	27,0	32	39	163	81	103	2,25	SOGX 09T308	425,40	27003
KUB-P.3D.275.R.09-C32	U4322750	27,5	32	39	166	84	106	2,25	SOGX 09T308	425,40	27503
KUB-P.3D.280.R.09-C32	U4322800	28,0	32	39	166	84	106	2,25	SOGX 09T308	425,40	28003
KUB-P.3D.285.R.09-C32	U4322850	28,5	32	39	170	87	110	2,25	SOGX 09T308	425,40	28503
KUB-P.3D.290.R.09-C32	U4322900	29,0	32	39	170	87	110	2,25	SOGX 09T308	425,40	29003
KUB-P.3D.295.R.09-C32	U4322950	29,5	32	39	173	90	113	2,25	SOGX 09T308	425,40	29503
KUB-P.3D.300.R.09-C32	U4323000	30,0	32	39	173	90	113	2,25	SOGX 09T308	425,40	30003
KUB-P.3D.310.R.10-C40	U4333100	31,0	40	50	185	93	117	2,8	SOGX 100408	463,80	31004
KUB-P.3D.320.R.10-C40	U4333200	32,0	40	50	188	96	120	2,8	SOGX 100408	463,80	32004
KUB-P.3D.330.R.10-C40	U4333300	33,0	40	50	192	99	124	2,8	SOGX 100408	463,80	33004
KUB-P.3D.340.R.11-C40	U4333400	34,0	40	50	195	102	127	2,8	SOGX 110408	485,70	34004
KUB-P.3D.350.R.11-C40	U4333500	35,0	40	50	199	105	131	2,8	SOGX 110408	485,70	35004
KUB-P.3D.360.R.11-C40	U4333600	36,0	40	50	202	108	134	2,8	SOGX 110408	485,70	36004
KUB-P.3D.370.R.11-C40	U4333700	37,0	40	50	206	111	138	2,8	SOGX 110408	485,70	37004
KUB-P.3D.380.R.12-C40	U4333800	38,0	40	50	209	114	141	6,25	SOGX 120408	500,20	38004
KUB-P.3D.390.R.12-C40	U4333900	39,0	40	50	213	117	145	6,25	SOGX 120408	500,20	39004
KUB-P.3D.400.R.12-C40	U4334000	40,0	40	50	216	120	148	6,25	SOGX 120408	500,20	40004
KUB-P.3D.410.R.12-C40	U4334100	41,0	40	50	220	123	152	6,25	SOGX 120408	500,20	41004
KUB-P.3D.420.R.12-C40	U4334200	42,0	40	50	223	126	155	6,25	SOGX 120408	500,20	42004

Continued on next page

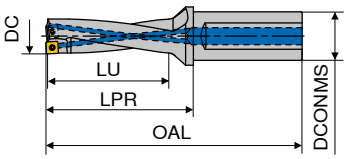
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD



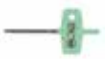
C





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 873 ... EUR	
KUB-P.3D.430.R.13-C40	U4334300	43,0	40	50	227	129	159	6,25	SOGX 130508	500,20	**43004**
KUB-P.3D.440.R.13-C40	U4334400	44,0	40	50	230	132	162	6,25	SOGX 130508	500,20	**44004**
KUB-P.3D.450.R.13-C40	U4334500	45,0	40	50	234	135	166	6,25	SOGX 130508	500,20	**45004**
KUB-P.3D.460.R.13-C40	U4334600	46,0	40	50	237	138	169	6,25	SOGX 130508	500,20	**46004**

Y7



Screwdriver

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	**057**				M1,8x3,8 - 05IP	2,36	**10100**
16,5 - 18				T06 - IP	10,39	**123**	M2,0x4,3 - 06IP	2,36	**10000**
18,5 - 23				T06 - IP	10,39	**123**	M2,2x5,5 - 06IP	2,36	**10700**
23,5 - 26				T08 - IP	10,20	**125**	M2,5x6,3 - 08IP	2,36	**10800**
26,5 - 30				T08 - IP	10,20	**125**	M3,0x7,6 - 08IP	2,36	**10200**
31 - 37				T15 - IP	11,89	**128**	M3,5x7,5 - 15IP	2,36	**10300**
38 - 46				T20 - IP	12,54	**129**	M4,5x10,0 - 20IP	2,36	**10400**

Suitable adapters can be found in → **Chapter 16 Adapters.**

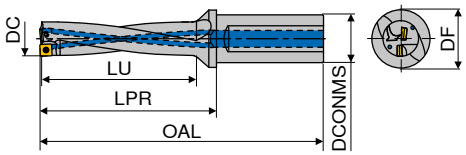
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD



C





NEW 2B/6#

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 874 ... EUR	
KUB-P.4D.140.R.04-C20	U4401400	14,0	20	30	119	56	69	0,38	SOGX 040204	423,30	14001
KUB-P.4D.145.R.04-C20	U4401450	14,5	20	30	124	60	74	0,38	SOGX 040204	423,30	14501
KUB-P.4D.150.R.04-C20	U4401500	15,0	20	30	124	60	74	0,38	SOGX 040204	423,30	15001
KUB-P.4D.155.R.04-C20	U4401550	15,5	20	30	130	64	80	0,38	SOGX 040204	423,30	15501
KUB-P.4D.160.R.04-C20	U4401600	16,0	20	30	130	64	80	0,38	SOGX 040204	423,30	16001
KUB-P.4D.165.R.05-C20	U4401650	16,5	20	30	135	68	85	0,62	SOGX 050204	423,30	16501
KUB-P.4D.170.R.05-C20	U4401700	17,0	20	30	135	68	85	0,62	SOGX 050204	434,70	17001
KUB-P.4D.175.R.05-C25	U4411750	17,5	25	30	145	72	89	0,62	SOGX 050204	434,70	17502
KUB-P.4D.180.R.05-C25	U4411800	18,0	25	30	145	72	89	0,62	SOGX 050204	434,70	18002
KUB-P.4D.185.R.06-C25	U4411850	18,5	25	30	150	76	94	1,01	SOGX 060206	434,70	18502
KUB-P.4D.190.R.06-C25	U4411900	19,0	25	30	150	76	94	1,01	SOGX 060206	447,20	19002
KUB-P.4D.195.R.06-C25	U4411950	19,5	25	30	154	80	98	1,01	SOGX 060206	447,20	19502
KUB-P.4D.200.R.06-C25	U4412000	20,0	25	30	154	80	98	1,01	SOGX 060206	447,20	20002
KUB-P.4D.205.R.07-C25	U4412050	20,5	25	30	159	84	103	1,01	SOGX 07T208	463,80	20502
KUB-P.4D.210.R.07-C25	U4412100	21,0	25	30	159	84	103	1,01	SOGX 07T208	463,80	21002
KUB-P.4D.215.R.07-C25	U4412150	21,5	25	30	163	88	107	1,01	SOGX 07T208	463,80	21502
KUB-P.4D.220.R.07-C25	U4412200	22,0	25	30	163	88	107	1,01	SOGX 07T208	463,80	22002
KUB-P.4D.225.R.07-C25	U4412250	22,5	25	30	168	92	112	1,01	SOGX 07T208	463,80	22502
KUB-P.4D.230.R.07-C25	U4412300	23,0	25	30	168	92	112	1,01	SOGX 07T208	463,80	23002
KUB-P.4D.235.R.08-C32	U4422350	23,5	32	39	176	96	116	1,28	SOGX 080308	481,50	23503
KUB-P.4D.240.R.08-C32	U4422400	24,0	32	39	176	96	116	1,28	SOGX 080308	481,50	24003
KUB-P.4D.245.R.08-C32	U4422450	24,5	32	39	181	100	121	1,28	SOGX 080308	481,50	24503
KUB-P.4D.250.R.08-C32	U4422500	25,0	32	39	181	100	121	1,28	SOGX 080308	481,50	25003
KUB-P.4D.255.R.08-C32	U4422550	25,5	32	39	185	104	125	1,28	SOGX 080308	481,50	25503
KUB-P.4D.260.R.08-C32	U4422600	26,0	32	39	185	104	125	1,28	SOGX 080308	481,50	26003
KUB-P.4D.265.R.09-C32	U4422650	26,5	32	39	190	108	130	2,25	SOGX 09T308	543,90	26503
KUB-P.4D.270.R.09-C32	U4422700	27,0	32	39	190	108	130	2,25	SOGX 09T308	543,90	27003
KUB-P.4D.275.R.09-C32	U4422750	27,5	32	39	194	112	134	2,25	SOGX 09T308	543,90	27503
KUB-P.4D.280.R.09-C32	U4422800	28,0	32	39	194	112	134	2,25	SOGX 09T308	543,90	28003
KUB-P.4D.285.R.09-C32	U4422850	28,5	32	39	199	116	139	2,25	SOGX 09T308	543,90	28503
KUB-P.4D.290.R.09-C32	U4422900	29,0	32	39	199	116	139	2,25	SOGX 09T308	543,90	29003
KUB-P.4D.295.R.09-C32	U4422950	29,5	32	39	203	120	143	2,25	SOGX 09T308	543,90	29503
KUB-P.4D.300.R.09-C32	U4423000	30,0	32	39	203	120	143	2,25	SOGX 09T308	543,90	30003
KUB-P.4D.310.R.10-C40	U4433100	31,0	40	50	216	124	148	2,8	SOGX 100408	576,20	31004
KUB-P.4D.320.R.10-C40	U4433200	32,0	40	50	220	128	152	2,8	SOGX 100408	576,20	32004
KUB-P.4D.330.R.10-C40	U4433300	33,0	40	50	225	132	157	2,8	SOGX 100408	576,20	33004
KUB-P.4D.340.R.11-C40	U4433400	34,0	40	50	229	136	161	2,8	SOGX 110408	592,80	34004
KUB-P.4D.350.R.11-C40	U4433500	35,0	40	50	234	140	166	2,8	SOGX 110408	592,80	35004
KUB-P.4D.360.R.11-C40	U4433600	36,0	40	50	238	144	170	2,8	SOGX 110408	592,80	36004
KUB-P.4D.370.R.11-C40	U4433700	37,0	40	50	243	148	175	2,8	SOGX 110408	592,80	37004
KUB-P.4D.380.R.12-C40	U4433800	38,0	40	50	247	152	179	6,25	SOGX 120408	611,50	38004
KUB-P.4D.390.R.12-C40	U4433900	39,0	40	50	252	156	184	6,25	SOGX 120408	611,50	39004
KUB-P.4D.400.R.12-C40	U4434000	40,0	40	50	256	160	188	6,25	SOGX 120408	611,50	40004
KUB-P.4D.410.R.12-C40	U4434100	41,0	40	50	261	164	193	6,25	SOGX 120408	611,50	41004
KUB-P.4D.420.R.12-C40	U4434200	42,0	40	50	265	168	197	6,25	SOGX 120408	611,50	42004

Continued on next page

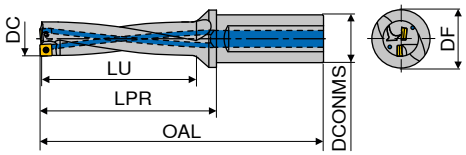
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD



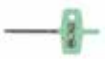
C





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 874 ... EUR	
KUB-P.4D.430.R.13-C40	U4434300	43,0	40	50	270	172	202	6,25	SOGX 130508	657,30	**43004**
KUB-P.4D.440.R.13-C40	U4434400	44,0	40	50	274	176	206	6,25	SOGX 130508	657,30	**44004**
KUB-P.4D.450.R.13-C40	U4434500	45,0	40	50	279	180	211	6,25	SOGX 130508	657,30	**45004**
KUB-P.4D.460.R.13-C40	U4434600	46,0	40	50	283	184	215	6,25	SOGX 130508	657,30	**46004**

Y7



Screwdriver

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	**057**				M1,8x3,8 - 05IP	2,36	**10100**
16,5 - 18				T06 - IP	10,39	**123**	M2,0x4,3 - 06IP	2,36	**10000**
18,5 - 23				T06 - IP	10,39	**123**	M2,2x5,5 - 06IP	2,36	**10700**
23,5 - 26				T08 - IP	10,20	**125**	M2,5x6,3 - 08IP	2,36	**10800**
26,5 - 30				T08 - IP	10,20	**125**	M3,0x7,6 - 08IP	2,36	**10200**
31 - 37				T15 - IP	11,89	**128**	M3,5x7,5 - 15IP	2,36	**10300**
38 - 46				T20 - IP	12,54	**129**	M4,5x10,0 - 20IP	2,36	**10400**

Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Pentron

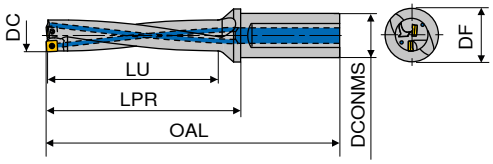
Scope of supply:

Indexable Insert Drill incl. clamping screws

≤ 5xD



C





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 875 ... EUR	
KUB-P.5D.140.R.04-C20	U4501400	14,0	20	30	133	70	83	0,38	SOGX 040204	457,60	14001
KUB-P.5D.145.R.04-C20	U4501450	14,5	20	30	139	75	89	0,38	SOGX 040204	457,60	14501
KUB-P.5D.150.R.04-C20	U4501500	15,0	20	30	139	75	89	0,38	SOGX 040204	457,60	15001
KUB-P.5D.155.R.04-C20	U4501550	15,5	20	30	146	80	96	0,38	SOGX 040204	457,60	15501
KUB-P.5D.160.R.04-C20	U4501600	16,0	20	30	146	80	96	0,38	SOGX 040204	457,60	16001
KUB-P.5D.165.R.05-C20	U4501650	16,5	20	30	152	85	102	0,62	SOGX 050204	457,60	16501
KUB-P.5D.170.R.05-C20	U4501700	17,0	20	30	152	85	102	0,62	SOGX 050204	471,10	17001
KUB-P.5D.175.R.05-C25	U4511750	17,5	25	30	163	90	107	0,62	SOGX 050204	471,10	17502
KUB-P.5D.180.R.05-C25	U4511800	18,0	25	30	163	90	107	0,62	SOGX 050204	471,10	18002
KUB-P.5D.185.R.06-C25	U4511850	18,5	25	30	169	95	113	1,01	SOGX 060206	471,10	18502
KUB-P.5D.190.R.06-C25	U4511900	19,0	25	30	169	95	113	1,01	SOGX 060206	481,50	19002
KUB-P.5D.195.R.06-C25	U4511950	19,5	25	30	174	100	118	1,01	SOGX 060206	481,50	19502
KUB-P.5D.200.R.06-C25	U4512000	20,0	25	30	174	100	118	1,01	SOGX 060206	481,50	20002
KUB-P.5D.205.R.07-C25	U4512050	20,5	25	30	180	105	124	1,01	SOGX 07T208	499,20	20502
KUB-P.5D.210.R.07-C25	U4512100	21,0	25	30	180	105	124	1,01	SOGX 07T208	499,20	21002
KUB-P.5D.215.R.07-C25	U4512150	21,5	25	30	185	110	129	1,01	SOGX 07T208	499,20	21502
KUB-P.5D.220.R.07-C25	U4512200	22,0	25	30	185	110	129	1,01	SOGX 07T208	499,20	22002
KUB-P.5D.225.R.07-C25	U4512250	22,5	25	30	191	115	135	1,01	SOGX 07T208	499,20	22502
KUB-P.5D.230.R.07-C25	U4512300	23,0	25	30	191	115	135	1,01	SOGX 07T208	499,20	23002
KUB-P.5D.235.R.08-C32	U4522350	23,5	32	39	200	120	140	1,28	SOGX 080308	515,80	23503
KUB-P.5D.240.R.08-C32	U4522400	24,0	32	39	200	120	140	1,28	SOGX 080308	515,80	24003
KUB-P.5D.245.R.08-C32	U4522450	24,5	32	39	206	125	146	1,28	SOGX 080308	515,80	24503
KUB-P.5D.250.R.08-C32	U4522500	25,0	32	39	206	125	146	1,28	SOGX 080308	515,80	25003
KUB-P.5D.255.R.08-C32	U4522550	25,5	32	39	211	130	151	1,28	SOGX 080308	515,80	25503
KUB-P.5D.260.R.08-C32	U4522600	26,0	32	39	211	130	151	1,28	SOGX 080308	515,80	26003
KUB-P.5D.265.R.09-C32	U4522650	26,5	32	39	217	135	157	2,25	SOGX 09T308	581,40	26503
KUB-P.5D.270.R.09-C32	U4522700	27,0	32	39	217	135	157	2,25	SOGX 09T308	581,40	27003
KUB-P.5D.275.R.09-C32	U4522750	27,5	32	39	222	140	162	2,25	SOGX 09T308	581,40	27503
KUB-P.5D.280.R.09-C32	U4522800	28,0	32	39	222	140	162	2,25	SOGX 09T308	581,40	28003
KUB-P.5D.285.R.09-C32	U4522850	28,5	32	39	228	145	168	2,25	SOGX 09T308	581,40	28503
KUB-P.5D.290.R.09-C32	U4522900	29,0	32	39	228	145	168	2,25	SOGX 09T308	581,40	29003
KUB-P.5D.295.R.09-C32	U4522950	29,5	32	39	233	150	173	2,25	SOGX 09T308	581,40	29503
KUB-P.5D.300.R.09-C32	U4523000	30,0	32	39	233	150	173	2,25	SOGX 09T308	581,40	30003
KUB-P.5D.310.R.10-C40	U4533100	31,0	40	50	247	155	179	2,8	SOGX 100408	621,90	31004
KUB-P.5D.320.R.10-C40	U4533200	32,0	40	50	252	160	184	2,8	SOGX 100408	621,90	32004
KUB-P.5D.330.R.10-C40	U4533300	33,0	40	50	258	165	190	2,8	SOGX 100408	621,90	33004
KUB-P.5D.340.R.11-C40	U4533400	34,0	40	50	263	170	195	2,8	SOGX 110408	639,60	34004
KUB-P.5D.350.R.11-C40	U4533500	35,0	40	50	269	175	201	2,8	SOGX 110408	639,60	35004
KUB-P.5D.360.R.11-C40	U4533600	36,0	40	50	274	180	206	2,8	SOGX 110408	639,60	36004
KUB-P.5D.370.R.11-C40	U4533700	37,0	40	50	280	185	212	2,8	SOGX 110408	639,60	37004
KUB-P.5D.380.R.12-C40	U4533800	38,0	40	50	285	190	217	6,25	SOGX 120408	657,30	38004
KUB-P.5D.390.R.12-C40	U4533900	39,0	40	50	291	195	223	6,25	SOGX 120408	657,30	39004
KUB-P.5D.400.R.12-C40	U4534000	40,0	40	50	296	200	228	6,25	SOGX 120408	657,30	40004
KUB-P.5D.410.R.12-C40	U4534100	41,0	40	50	302	205	234	6,25	SOGX 120408	657,30	41004
KUB-P.5D.420.R.12-C40	U4534200	42,0	40	50	307	210	239	6,25	SOGX 120408	657,30	42004

Continued on next page

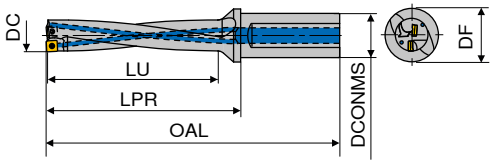
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 5xD



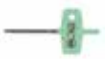
C





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 875 ... EUR	
KUB-P.5D.430.R.13-C40	U4534300	43,0	40	50	313	215	245	6,25	SOGX 130508	716,60	**43004**
KUB-P.5D.440.R.13-C40	U4534400	44,0	40	50	318	220	250	6,25	SOGX 130508	716,60	**44004**
KUB-P.5D.450.R.13-C40	U4534500	45,0	40	50	324	225	256	6,25	SOGX 130508	716,60	**45004**
KUB-P.5D.460.R.13-C40	U4534600	46,0	40	50	329	230	261	6,25	SOGX 130508	716,60	**46004**

Y7



Screwdriver

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	**057**				M1,8x3,8 - 05IP	2,36	**10100**
16,5 - 18				T06 - IP	10,39	**123**	M2,0x4,3 - 06IP	2,36	**10000**
18,5 - 23				T06 - IP	10,39	**123**	M2,2x5,5 - 06IP	2,36	**10700**
23,5 - 26				T08 - IP	10,20	**125**	M2,5x6,3 - 08IP	2,36	**10800**
26,5 - 30				T08 - IP	10,20	**125**	M3,0x7,6 - 08IP	2,36	**10200**
31 - 37				T15 - IP	11,89	**128**	M3,5x7,5 - 15IP	2,36	**10300**
38 - 46				T20 - IP	12,54	**129**	M4,5x10,0 - 20IP	2,36	**10400**

Suitable adapters can be found in → **Chapter 16 Adapters.**

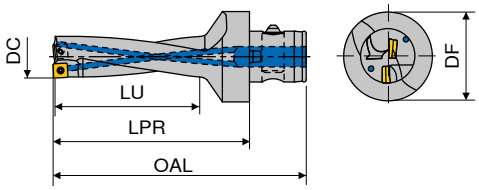
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD



ABS





NEW 2B/6#

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 873 ... EUR	
KUB-P.3D.140.R.04-ABS50	U4351400	14,0	50	100	42	69	0,38	SOGX 040204	404,60	14095
KUB-P.3D.145.R.04-ABS50	U4351450	14,5	50	104	45	73	0,38	SOGX 040204	404,60	14595
KUB-P.3D.150.R.04-ABS50	U4351500	15,0	50	104	45	73	0,38	SOGX 040204	404,60	15095
KUB-P.3D.155.R.04-ABS50	U4351550	15,5	50	109	48	78	0,38	SOGX 040204	404,60	15595
KUB-P.3D.160.R.04-ABS50	U4351600	16,0	50	109	48	78	0,38	SOGX 040204	404,60	16095
KUB-P.3D.165.R.05-ABS50	U4351650	16,5	50	113	51	82	0,62	SOGX 050204	404,60	16595
KUB-P.3D.170.R.05-ABS50	U4351700	17,0	50	113	51	82	0,62	SOGX 050204	413,90	17095
KUB-P.3D.175.R.05-ABS50	U4351750	17,5	50	116	54	85	0,62	SOGX 050204	413,90	17595
KUB-P.3D.180.R.05-ABS50	U4351800	18,0	50	116	54	85	0,62	SOGX 050204	413,90	18095
KUB-P.3D.185.R.06-ABS50	U4351850	18,5	50	120	57	89	1,01	SOGX 060206	413,90	18595
KUB-P.3D.190.R.06-ABS50	U4351900	19,0	50	120	57	89	1,01	SOGX 060206	424,30	19095
KUB-P.3D.195.R.06-ABS50	U4351950	19,5	50	123	60	92	1,01	SOGX 060206	424,30	19595
KUB-P.3D.200.R.06-ABS50	U4352000	20,0	50	123	60	92	1,01	SOGX 060206	424,30	20095
KUB-P.3D.205.R.07-ABS50	U4352050	20,5	50	126	63	95	1,01	SOGX 07T208	436,80	20595
KUB-P.3D.210.R.07-ABS50	U4352100	21,0	50	126	63	95	1,01	SOGX 07T208	436,80	21095
KUB-P.3D.215.R.07-ABS50	U4352150	21,5	50	129	66	98	1,01	SOGX 07T208	436,80	21595
KUB-P.3D.220.R.07-ABS50	U4352200	22,0	50	129	66	98	1,01	SOGX 07T208	436,80	22095
KUB-P.3D.225.R.07-ABS50	U4352250	22,5	50	132	69	101	1,01	SOGX 07T208	436,80	22595
KUB-P.3D.230.R.07-ABS50	U4352300	23,0	50	132	69	101	1,01	SOGX 07T208	436,80	23095
KUB-P.3D.235.R.08-ABS50	U4352350	23,5	50	135	72	104	1,28	SOGX 080308	450,30	23595
KUB-P.3D.240.R.08-ABS50	U4352400	24,0	50	135	72	104	1,28	SOGX 080308	450,30	24095
KUB-P.3D.245.R.08-ABS50	U4352450	24,5	50	139	75	108	1,28	SOGX 080308	450,30	24595
KUB-P.3D.250.R.08-ABS50	U4352500	25,0	50	139	75	108	1,28	SOGX 080308	450,30	25095
KUB-P.3D.255.R.08-ABS50	U4352550	25,5	50	142	78	111	1,28	SOGX 080308	450,30	25595
KUB-P.3D.260.R.08-ABS50	U4352600	26,0	50	142	78	111	1,28	SOGX 080308	450,30	26095
KUB-P.3D.265.R.09-ABS50	U4352650	26,5	50	146	81	115	2,25	SOGX 09T308	504,40	26595
KUB-P.3D.270.R.09-ABS50	U4352700	27,0	50	146	81	115	2,25	SOGX 09T308	504,40	27095
KUB-P.3D.275.R.09-ABS50	U4352750	27,5	50	149	84	118	2,25	SOGX 09T308	504,40	27595
KUB-P.3D.280.R.09-ABS50	U4352800	28,0	50	149	84	118	2,25	SOGX 09T308	504,40	28095
KUB-P.3D.285.R.09-ABS50	U4352850	28,5	50	153	87	122	2,25	SOGX 09T308	504,40	28595
KUB-P.3D.290.R.09-ABS50	U4352900	29,0	50	153	87	122	2,25	SOGX 09T308	504,40	29095
KUB-P.3D.295.R.09-ABS50	U4352950	29,5	50	156	90	125	2,25	SOGX 09T308	504,40	29595
KUB-P.3D.300.R.09-ABS50	U4353000	30,0	50	156	90	125	2,25	SOGX 09T308	504,40	30095

Y7



Screwdriver

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	057				M1,8x3,8 - 05IP	2,36	10100
16,5 - 18				T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
18,5 - 23				T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
23,5 - 26				T08 - IP	10,20	125	M2,5x6,3 - 08IP	2,36	10800
26,5 - 30				T08 - IP	10,20	125	M3,0x7,6 - 08IP	2,36	10200

Suitable adapters can be found in → **Chapter 16 Adapters.**

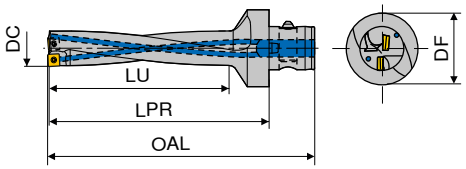
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD



ABS





Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 874 ... EUR	
KUB-P.4D.140.R.04-ABS50	U4451400	14,0	50	114	56	83	0,38	SOGX 040204	481,50	14095
KUB-P.4D.145.R.04-ABS50	U4451450	14,5	50	119	60	88	0,38	SOGX 040204	481,50	14595
KUB-P.4D.150.R.04-ABS50	U4451500	15,0	50	119	60	88	0,38	SOGX 040204	481,50	15095
KUB-P.4D.155.R.04-ABS50	U4451550	15,5	50	125	64	94	0,38	SOGX 040204	481,50	15595
KUB-P.4D.160.R.04-ABS50	U4451600	16,0	50	125	64	94	0,38	SOGX 040204	481,50	16095
KUB-P.4D.165.R.05-ABS50	U4451650	16,5	50	130	68	99	0,62	SOGX 050204	481,50	16595
KUB-P.4D.170.R.05-ABS50	U4451700	17,0	50	130	68	99	0,62	SOGX 050204	495,00	17095
KUB-P.4D.175.R.05-ABS50	U4451750	17,5	50	134	72	103	0,62	SOGX 050204	495,00	17595
KUB-P.4D.180.R.05-ABS50	U4451800	18,0	50	134	72	103	0,62	SOGX 050204	495,00	18095
KUB-P.4D.185.R.06-ABS50	U4451850	18,5	50	139	76	108	1,01	SOGX 060206	495,00	18595
KUB-P.4D.190.R.06-ABS50	U4451900	19,0	50	139	76	108	1,01	SOGX 060206	504,40	19095
KUB-P.4D.195.R.06-ABS50	U4451950	19,5	50	143	80	112	1,01	SOGX 060206	504,40	19595
KUB-P.4D.200.R.06-ABS50	U4452000	20,0	50	143	80	112	1,01	SOGX 060206	504,40	20095
KUB-P.4D.205.R.07-ABS50	U4452050	20,5	50	147	84	116	1,01	SOGX 07T208	524,20	20595
KUB-P.4D.210.R.07-ABS50	U4452100	21,0	50	147	84	116	1,01	SOGX 07T208	524,20	21095
KUB-P.4D.215.R.07-ABS50	U4452150	21,5	50	151	88	120	1,01	SOGX 07T208	524,20	21595
KUB-P.4D.220.R.07-ABS50	U4452200	22,0	50	151	88	120	1,01	SOGX 07T208	524,20	22095
KUB-P.4D.225.R.07-ABS50	U4452250	22,5	50	155	92	124	1,01	SOGX 07T208	524,20	22595
KUB-P.4D.230.R.07-ABS50	U4452300	23,0	50	155	92	124	1,01	SOGX 07T208	524,20	23095
KUB-P.4D.235.R.08-ABS50	U4452350	23,5	50	159	96	128	1,28	SOGX 080308	539,80	23595
KUB-P.4D.240.R.08-ABS50	U4452400	24,0	50	159	96	128	1,28	SOGX 080308	539,80	24095
KUB-P.4D.245.R.08-ABS50	U4452450	24,5	50	164	100	133	1,28	SOGX 080308	539,80	24595
KUB-P.4D.250.R.08-ABS50	U4452500	25,0	50	164	100	133	1,28	SOGX 080308	539,80	25095
KUB-P.4D.255.R.08-ABS50	U4452550	25,5	50	168	104	137	1,28	SOGX 080308	539,80	25595
KUB-P.4D.260.R.08-ABS50	U4452600	26,0	50	168	104	137	1,28	SOGX 080308	539,80	26095
KUB-P.4D.265.R.09-ABS50	U4452650	26,5	50	173	108	142	2,25	SOGX 09T308	605,30	26595
KUB-P.4D.270.R.09-ABS50	U4452700	27,0	50	173	108	142	2,25	SOGX 09T308	605,30	27095
KUB-P.4D.275.R.09-ABS50	U4452750	27,5	50	177	112	146	2,25	SOGX 09T308	605,30	27595
KUB-P.4D.280.R.09-ABS50	U4452800	28,0	50	177	112	146	2,25	SOGX 09T308	605,30	28095
KUB-P.4D.285.R.09-ABS50	U4452850	28,5	50	182	116	151	2,25	SOGX 09T308	605,30	28595
KUB-P.4D.290.R.09-ABS50	U4452900	29,0	50	182	116	151	2,25	SOGX 09T308	605,30	29095
KUB-P.4D.295.R.09-ABS50	U4452950	29,5	50	186	120	155	2,25	SOGX 09T308	605,30	29595
KUB-P.4D.300.R.09-ABS50	U4453000	30,0	50	186	120	155	2,25	SOGX 09T308	605,30	30095

Y7



Screwdriver

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ...	EUR		Article no. 80 950 ...	EUR		Article no. 10 950 ...	EUR	
14 - 16	T05 - IP		6,06	057				M1,8x3,8 - 05IP	2,36	10100
16,5 - 18					T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
18,5 - 23					T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
23,5 - 26					T08 - IP	10,20	125	M2,5x6,3 - 08IP	2,36	10800
26,5 - 30					T08 - IP	10,20	125	M3,0x7,6 - 08IP	2,36	10200

Suitable adapters can be found in → **Chapter 16 Adapters.**

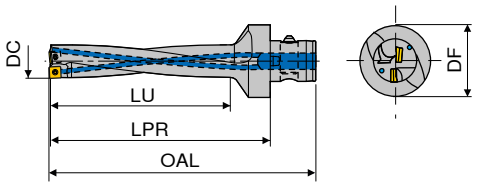
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 5xD



ABS





Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 875 ... EUR	
KUB-P.5D.140.R.04-ABS50	U4551400	14,0	50	128	70	97	0,38	SOGX 040204	515,80	14095
KUB-P.5D.145.R.04-ABS50	U4551450	14,5	50	134	75	103	0,38	SOGX 040204	515,80	14595
KUB-P.5D.150.R.04-ABS50	U4551500	15,0	50	134	75	103	0,38	SOGX 040204	515,80	15095
KUB-P.5D.155.R.04-ABS50	U4551550	15,5	50	141	80	110	0,38	SOGX 040204	515,80	15595
KUB-P.5D.160.R.04-ABS50	U4551600	16,0	50	141	80	110	0,38	SOGX 040204	515,80	16095
KUB-P.5D.165.R.05-ABS50	U4551650	16,5	50	147	85	116	0,62	SOGX 050204	515,80	16595
KUB-P.5D.170.R.05-ABS50	U4551700	17,0	50	147	85	116	0,62	SOGX 050204	529,40	17095
KUB-P.5D.175.R.05-ABS50	U4551750	17,5	50	152	90	121	0,62	SOGX 050204	529,40	17595
KUB-P.5D.180.R.05-ABS50	U4551800	18,0	50	152	90	121	0,62	SOGX 050204	529,40	18095
KUB-P.5D.185.R.06-ABS50	U4551850	18,5	50	158	95	127	1,01	SOGX 060206	529,40	18595
KUB-P.5D.190.R.06-ABS50	U4551900	19,0	50	158	95	127	1,01	SOGX 060206	539,80	19095
KUB-P.5D.195.R.06-ABS50	U4551950	19,5	50	163	100	132	1,01	SOGX 060206	539,80	19595
KUB-P.5D.200.R.06-ABS50	U4552000	20,0	50	163	100	132	1,01	SOGX 060206	539,80	20095
KUB-P.5D.205.R.07-ABS50	U4552050	20,5	50	168	105	137	1,01	SOGX 07T208	558,50	20595
KUB-P.5D.210.R.07-ABS50	U4552100	21,0	50	168	105	137	1,01	SOGX 07T208	558,50	21095
KUB-P.5D.215.R.07-ABS50	U4552150	21,5	50	173	110	142	1,01	SOGX 07T208	558,50	21595
KUB-P.5D.220.R.07-ABS50	U4552200	22,0	50	173	110	142	1,01	SOGX 07T208	558,50	22095
KUB-P.5D.225.R.07-ABS50	U4552250	22,5	50	178	115	147	1,01	SOGX 07T208	558,50	22595
KUB-P.5D.230.R.07-ABS50	U4552300	23,0	50	178	115	147	1,01	SOGX 07T208	558,50	23095
KUB-P.5D.235.R.08-ABS50	U4552350	23,5	50	183	120	152	1,28	SOGX 080308	576,20	23595
KUB-P.5D.240.R.08-ABS50	U4552400	24,0	50	183	120	152	1,28	SOGX 080308	576,20	24095
KUB-P.5D.245.R.08-ABS50	U4552450	24,5	50	189	125	158	1,28	SOGX 080308	576,20	24595
KUB-P.5D.250.R.08-ABS50	U4552500	25,0	50	189	125	158	1,28	SOGX 080308	576,20	25095
KUB-P.5D.255.R.08-ABS50	U4552550	25,5	50	194	130	163	1,28	SOGX 080308	576,20	25595
KUB-P.5D.260.R.08-ABS50	U4552600	26,0	50	194	130	163	1,28	SOGX 080308	576,20	26095
KUB-P.5D.265.R.09-ABS50	U4552650	26,5	50	200	135	169	2,25	SOGX 09T308	639,60	26595
KUB-P.5D.270.R.09-ABS50	U4552700	27,0	50	200	135	169	2,25	SOGX 09T308	639,60	27095
KUB-P.5D.275.R.09-ABS50	U4552750	27,5	50	205	140	174	2,25	SOGX 09T308	639,60	27595
KUB-P.5D.280.R.09-ABS50	U4552800	28,0	50	205	140	174	2,25	SOGX 09T308	639,60	28095
KUB-P.5D.285.R.09-ABS50	U4552850	28,5	50	211	145	180	2,25	SOGX 09T308	639,60	28595
KUB-P.5D.290.R.09-ABS50	U4552900	29,0	50	211	145	180	2,25	SOGX 09T308	639,60	29095
KUB-P.5D.295.R.09-ABS50	U4552950	29,5	50	216	150	185	2,25	SOGX 09T308	639,60	29595
KUB-P.5D.300.R.09-ABS50	U4553000	30,0	50	216	150	185	2,25	SOGX 09T308	639,60	30095

Y7



Screwdriver

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	057				M1,8x3,8 - 05IP	2,36	10100
16,5 - 18				T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
18,5 - 23				T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
23,5 - 26				T08 - IP	10,20	125	M2,5x6,3 - 08IP	2,36	10800
26,5 - 30				T08 - IP	10,20	125	M3,0x7,6 - 08IP	2,36	10200

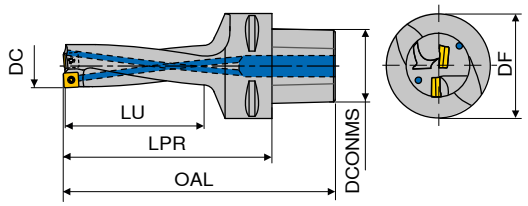
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD

PSC





Designation	KOMET no.	DC	DCONMS	DF	OAL	LU	LPR	torque moment	Insert	NEW 2B/6# Article no. 10 873 ... EUR	
		mm	mm	mm	mm	mm	mm	Nm			
KUB-P.3D.140.R.04-PSC50	U4061400	14,0	24,25	50	103	42	73	0,38	SOGX 040204	439,90	14055
KUB-P.3D.145.R.04-PSC50	U4061450	14,5	24,25	50	107	45	77	0,38	SOGX 040204	439,90	14555
KUB-P.3D.150.R.04-PSC50	U4061500	15,0	24,25	50	107	45	77	0,38	SOGX 040204	439,90	15055
KUB-P.3D.155.R.04-PSC50	U4061550	15,5	24,25	50	112	48	82	0,38	SOGX 040204	439,90	15555
KUB-P.3D.160.R.04-PSC50	U4061600	16,0	24,25	50	112	48	82	0,38	SOGX 040204	439,90	16055
KUB-P.3D.160.R.04-PSC63	U4071600	16,0	30,30	63	124	48	86	0,38	SOGX 040204	439,90	16056
KUB-P.3D.165.R.05-PSC50	U4061650	16,5	24,25	50	116	51	86	0,62	SOGX 050204	450,30	16555
KUB-P.3D.170.R.05-PSC50	U4061700	17,0	24,25	50	116	51	86	0,62	SOGX 050204	450,30	17055
KUB-P.3D.175.R.05-PSC50	U4061750	17,5	24,25	50	119	54	89	0,62	SOGX 050204	450,30	17555
KUB-P.3D.180.R.05-PSC50	U4061800	18,0	24,25	50	119	54	89	0,62	SOGX 050204	450,30	18055
KUB-P.3D.165.R.05-PSC63	U4071650	16,5	30,30	63	128	51	90	0,62	SOGX 050204	450,30	16556
KUB-P.3D.170.R.05-PSC63	U4071700	17,0	30,30	63	128	51	90	0,62	SOGX 050204	450,30	17056
KUB-P.3D.175.R.05-PSC63	U4071750	17,5	30,30	63	131	54	93	0,62	SOGX 050204	450,30	17556
KUB-P.3D.180.R.05-PSC63	U4071800	18,0	30,30	63	131	54	93	0,62	SOGX 050204	450,30	18056
KUB-P.3D.185.R.06-PSC50	U4061850	18,5	24,25	50	123	57	93	1,01	SOGX 060206	450,30	18555
KUB-P.3D.190.R.06-PSC50	U4061900	19,0	24,25	50	123	57	93	1,01	SOGX 060206	461,80	19055
KUB-P.3D.195.R.06-PSC50	U4061950	19,5	24,25	50	126	60	96	1,01	SOGX 060206	461,80	19555
KUB-P.3D.200.R.06-PSC50	U4062000	20,0	24,25	50	126	60	96	1,01	SOGX 060206	461,80	20055
KUB-P.3D.185.R.06-PSC63	U4071850	18,5	30,30	63	135	57	97	1,01	SOGX 060206	450,30	18556
KUB-P.3D.190.R.06-PSC63	U4071900	19,0	30,30	63	135	57	97	1,01	SOGX 060206	461,80	19056
KUB-P.3D.195.R.06-PSC63	U4071950	19,5	30,30	63	138	60	100	1,01	SOGX 060206	461,80	19556
KUB-P.3D.200.R.06-PSC63	U4072000	20,0	30,30	63	138	60	100	1,01	SOGX 060206	461,80	20056
KUB-P.3D.205.R.07-PSC50	U4062050	20,5	24,25	50	130	63	100	1,01	SOGX 07T208	475,30	20555
KUB-P.3D.210.R.07-PSC50	U4062100	21,0	24,25	50	130	63	100	1,01	SOGX 07T208	475,30	21055
KUB-P.3D.215.R.07-PSC50	U4062150	21,5	24,25	50	133	66	103	1,01	SOGX 07T208	475,30	21555
KUB-P.3D.220.R.07-PSC50	U4062200	22,0	24,25	50	133	66	103	1,01	SOGX 07T208	475,30	22055
KUB-P.3D.225.R.07-PSC50	U4062250	22,5	24,25	50	137	69	107	1,01	SOGX 07T208	475,30	22555
KUB-P.3D.230.R.07-PSC50	U4062300	23,0	24,25	50	137	69	107	1,01	SOGX 07T208	475,30	23055
KUB-P.3D.205.R.07-PSC63	U4072050	20,5	30,30	63	142	63	104	1,01	SOGX 07T208	475,30	20556
KUB-P.3D.210.R.07-PSC63	U4072100	21,0	30,30	63	142	63	104	1,01	SOGX 07T208	475,30	21056
KUB-P.3D.215.R.07-PSC63	U4072150	21,5	30,30	63	145	66	107	1,01	SOGX 07T208	475,30	21556
KUB-P.3D.220.R.07-PSC63	U4072200	22,0	30,30	63	145	66	107	1,01	SOGX 07T208	475,30	22056
KUB-P.3D.225.R.07-PSC63	U4072250	22,5	30,30	63	149	69	111	1,01	SOGX 07T208	475,30	22556
KUB-P.3D.230.R.07-PSC63	U4072300	23,0	30,30	63	149	69	111	1,01	SOGX 07T208	475,30	23056
KUB-P.3D.235.R.08-PSC50	U4062350	23,5	24,25	50	140	72	110	1,28	SOGX 080308	489,80	23555
KUB-P.3D.240.R.08-PSC50	U4062400	24,0	24,25	50	140	72	110	1,28	SOGX 080308	489,80	24055
KUB-P.3D.245.R.08-PSC50	U4062450	24,5	24,25	50	144	75	114	1,28	SOGX 080308	489,80	24555
KUB-P.3D.250.R.08-PSC50	U4062500	25,0	24,25	50	144	75	114	1,28	SOGX 080308	489,80	25055
KUB-P.3D.255.R.08-PSC50	U4062550	25,5	24,25	50	147	78	117	1,28	SOGX 080308	489,80	25555
KUB-P.3D.260.R.08-PSC50	U4062600	26,0	24,25	50	147	78	117	1,28	SOGX 080308	489,80	26055
KUB-P.3D.235.R.08-PSC63	U4072350	23,5	30,30	63	152	72	114	1,28	SOGX 080308	489,80	23556
KUB-P.3D.240.R.08-PSC63	U4072400	24,0	30,30	63	152	72	114	1,28	SOGX 080308	489,80	24056
KUB-P.3D.245.R.08-PSC63	U4072450	24,5	30,30	63	156	75	118	1,28	SOGX 080308	489,80	24556
KUB-P.3D.250.R.08-PSC63	U4072500	25,0	30,30	63	156	75	118	1,28	SOGX 080308	489,80	25056
KUB-P.3D.255.R.08-PSC63	U4072550	25,5	30,30	63	159	78	121	1,28	SOGX 080308	489,80	25556
KUB-P.3D.260.R.08-PSC63	U4072600	26,0	30,30	63	159	78	121	1,28	SOGX 080308	489,80	26056
KUB-P.3D.265.R.09-PSC50	U4062650	26,5	24,25	50	151	81	121	2,25	SOGX 09T308	548,10	26555
KUB-P.3D.270.R.09-PSC50	U4062700	27,0	24,25	50	151	81	121	2,25	SOGX 09T308	548,10	27055
KUB-P.3D.275.R.09-PSC50	U4062750	27,5	24,25	50	154	84	124	2,25	SOGX 09T308	548,10	27555

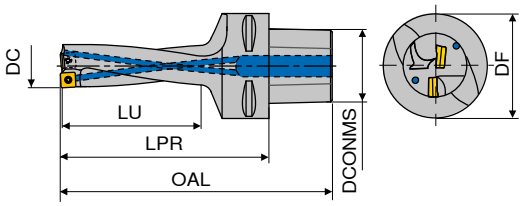
Continued on next page

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD

PSC





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 873 ... EUR	
KUB-P.3D.280.R.09-PSC50	U4062800	28,0	24,25	50	154	84	124	2,25	SOGX 09T308	548,10	28055
KUB-P.3D.285.R.09-PSC50	U4062850	28,5	24,25	50	158	87	128	2,25	SOGX 09T308	548,10	28555
KUB-P.3D.290.R.09-PSC50	U4062900	29,0	24,25	50	158	87	128	2,25	SOGX 09T308	548,10	29055
KUB-P.3D.295.R.09-PSC50	U4062950	29,5	24,25	50	161	90	131	2,25	SOGX 09T308	548,10	29555
KUB-P.3D.300.R.09-PSC50	U4063000	30,0	24,25	50	161	90	131	2,25	SOGX 09T308	548,10	30055
KUB-P.3D.265.R.09-PSC63	U4072650	26,5	30,30	63	163	81	125	2,25	SOGX 09T308	548,10	26556
KUB-P.3D.270.R.09-PSC63	U4072700	27,0	30,30	63	163	81	125	2,25	SOGX 09T308	548,10	27056
KUB-P.3D.275.R.09-PSC63	U4072750	27,5	30,30	63	166	84	128	2,25	SOGX 09T308	548,10	27556
KUB-P.3D.280.R.09-PSC63	U4072800	28,0	30,30	63	166	84	128	2,25	SOGX 09T308	548,10	28056
KUB-P.3D.285.R.09-PSC63	U4072850	28,5	30,30	63	170	87	132	2,25	SOGX 09T308	548,10	28556
KUB-P.3D.290.R.09-PSC63	U4072900	29,0	30,30	63	170	87	132	2,25	SOGX 09T308	548,10	29056
KUB-P.3D.295.R.09-PSC63	U4072950	29,5	30,30	63	173	90	135	2,25	SOGX 09T308	548,10	29556
KUB-P.3D.300.R.09-PSC63	U4073000	30,0	30,30	63	173	90	135	2,25	SOGX 09T308	548,10	30056

Y7



Screwdriver

Y7



Key D

W7

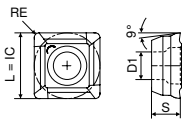


Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 16	T05 - IP	6,06	057				M1,8x3,8 - 05IP	2,36	10100
16,5 - 18				T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
18,5 - 23				T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
23,5 - 26				T08 - IP	10,20	125	M2,5x6,3 - 08IP	2,36	10800
26,5 - 30				T08 - IP	10,20	125	M3,0x7,6 - 08IP	2,36	10200

SOGX

Designation	L	IC	D1	S
	mm	mm	mm	mm
SOGX 0402..	4,8	4,8	2,05	2,20
SOGX 0502..	5,5	5,5	2,30	2,40
SOGX 0602..	6,2	6,2	2,60	2,75
SOGX 07T2..	7,1	7,1	2,60	2,97
SOGX 0803..	8,0	8,0	2,85	3,40
SOGX 09T3..	8,9	8,9	3,40	3,90
SOGX 1004..	9,8	9,8	4,10	4,20
SOGX 1104..	10,9	10,9	4,10	4,50
SOGX 1204..	12,0	12,0	5,20	4,80
SOGX 1305..	13,2	13,2	5,20	5,20



3

SOGX

			-01 BK8425		-01 BK6115	
						
			SOGX		SOGX	
			NEW 1A/3#		NEW 1A/3#	
ISO	KOMET no.	RE	Article no. 10 820 ...		Article no. 10 820 ...	
		mm	EUR		EUR	
040204	W8010010.046115	0,4			16,12	40401
040204	W8010010.048425	0,4	16,12	30401		
050204	W8012010.046115	0,4			16,22	40501
050204	W8012010.048425	0,4	16,22	30501		
060206	W8018010.066115	0,6			16,33	40601
060206	W8018010.068425	0,6	16,33	30601		
07T208	W8020010.086115	0,8			16,43	40701
07T208	W8020010.088425	0,8	16,43	30701		
080308	W8024010.086115	0,8			16,54	40801
080308	W8024010.088425	0,8	16,54	30801		
09T308	W8028010.086115	0,8			17,16	40901
09T308	W8028010.088425	0,8	17,16	30901		
100408	W8032010.086115	0,8			17,68	41001
100408	W8032010.088425	0,8	17,68	31001		
110408	W8038010.086115	0,8			18,20	41101
110408	W8038010.088425	0,8	18,20	31101		
120408	W8042010.086115	0,8			19,14	41201
120408	W8042010.088425	0,8	19,14	31201		
130508	W8046010.086115	0,8			22,26	41301
130508	W8046010.088425	0,8	22,26	31301		
Steel				●		●
Stainless steel				●		
Cast iron				●		●
Non ferrous metals						
Heat resistant alloys						
hardened materials						○

→ v_c/f_z Page 40–42

BK6115 -01 is exclusively recommended for use on the peripheral cutting edge!

Specialised indexable inserts for machining aluminium or stainless steels (BK7935, BK7710, BK6425) can be found in our online shop at cuttingtools.ceratizit.com

MaxiDrill 900

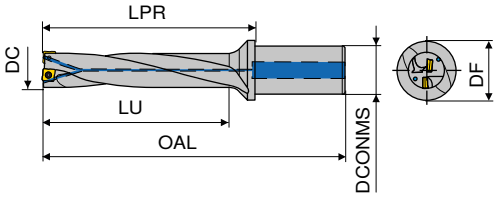
Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 2xD



C





2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 852 ... EUR	
MD900.2D.120.R.03-C20	12,0	20	28	90	24	40	0,4	SONT 031804	243,80	120
MD900.2D.125.R.03-C20	12,5	20	28	91	25	41	0,4	SONT 031804	243,80	125
MD900.2D.130.R.03-C20	13,0	20	28	92	26	42	0,4	SONT 031804	243,80	130
MD900.2D.135.R.03-C20	13,5	20	28	93	27	43	0,4	SONT 031804	243,80	135
MD900.2D.140.R.04-C20	14,0	20	30	96	28	46	0,7	SONT 042105	259,50	140
MD900.2D.145.R.04-C20	14,5	20	30	97	29	47	0,7	SONT 042105	259,50	145
MD900.2D.150.R.04-C20	15,0	20	30	98	30	48	0,7	SONT 042105	259,50	150
MD900.2D.155.R.04-C20	15,5	20	30	99	31	49	0,7	SONT 042105	259,50	155
MD900.2D.160.R.05-C20	16,0	20	30	100	32	50	0,7	SONT 052306	259,50	160
MD900.2D.165.R.05-C20	16,5	20	30	101	33	51	0,7	SONT 052306	259,50	165
MD900.2D.170.R.05-C20	17,0	20	30	102	34	52	0,7	SONT 052306	276,20	170
MD900.2D.175.R.05-C20	17,5	20	30	103	35	53	0,7	SONT 052306	276,20	175
MD900.2D.180.R.06-C25	18,0	25	32	111	36	55	1	SONT 062506	276,20	180
MD900.2D.185.R.06-C25	18,5	25	32	112	37	56	1	SONT 062506	276,20	185
MD900.2D.190.R.06-C25	19,0	25	32	113	38	57	1	SONT 062506	296,80	190
MD900.2D.195.R.06-C25	19,5	25	32	114	39	58	1	SONT 062506	296,80	195
MD900.2D.200.R.06-C25	20,0	25	32	115	40	59	1	SONT 062506	296,80	200
MD900.2D.205.R.06-C25	20,5	25	32	116	41	60	1	SONT 062506	296,80	205
MD900.2D.210.R.07-C25	21,0	25	32	118	42	62	1	SONT 072907	296,80	210
MD900.2D.220.R.07-C25	22,0	25	32	120	44	64	1	SONT 072907	296,80	220
MD900.2D.230.R.07-C25	23,0	25	32	122	46	66	1	SONT 072907	306,10	230
MD900.2D.240.R.08-C32	24,0	32	40	132	48	72	1,2	SONT 083308	306,10	240
MD900.2D.250.R.08-C32	25,0	32	40	134	50	74	1,2	SONT 083308	306,10	250
MD900.2D.260.R.08-C32	26,0	32	40	136	52	76	1,2	SONT 083308	338,90	260
MD900.2D.270.R.08-C32	27,0	32	40	138	54	78	1,2	SONT 083308	338,90	270
MD900.2D.280.R.09-C32	28,0	32	40	140	56	80	2,2	SONT 093808	338,90	280
MD900.2D.290.R.09-C32	29,0	32	40	142	58	82	2,2	SONT 093808	338,90	290
MD900.2D.300.R.09-C32	30,0	32	40	144	60	84	2,2	SONT 093808	338,90	300
MD900.2D.310.R.09-C32	31,0	32	40	146	62	86	2,2	SONT 093808	367,60	310
MD900.2D.320.R.09-C32	32,0	32	40	148	64	88	2,2	SONT 093808	367,60	320
MD900.2D.330.R.10-C40	33,0	40	50	163	66	93	3,2	SONT 104408	367,60	330
MD900.2D.340.R.10-C40	34,0	40	50	165	68	95	3,2	SONT 104408	367,60	340
MD900.2D.350.R.10-C40	35,0	40	50	167	70	97	3,2	SONT 104408	375,90	350
MD900.2D.360.R.10-C40	36,0	40	50	169	72	99	3,2	SONT 104408	375,90	360
MD900.2D.370.R.12-C40	37,0	40	56	174	74	104	3,2	SONT 124810	388,10	370
MD900.2D.380.R.12-C40	38,0	40	56	176	76	106	3,2	SONT 124810	388,10	380
MD900.2D.390.R.12-C40	39,0	40	56	178	78	108	3,2	SONT 124810	388,10	390
MD900.2D.400.R.12-C40	40,0	40	56	180	80	110	3,2	SONT 124810	388,10	400
MD900.2D.410.R.12-C40	41,0	40	56	182	82	112	3,2	SONT 124810	388,10	410

Continued on next page

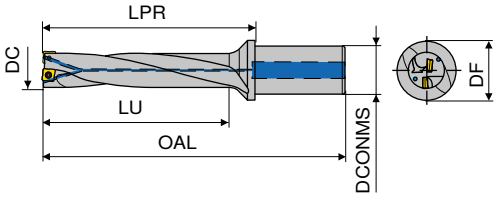
MaxiDrill 900

Scope of supply:
Indexable Insert Drill including clamping screws and key

≤ 2xD



C





Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	2B/41 Article no. 10 852 ... EUR	
MD900.2D.420.R.13-C40	42,0	40	60	187	84	117	5	SONT 135012	407,70	420
MD900.2D.430.R.13-C40	43,0	40	60	189	86	119	5	SONT 135012	407,70	430
MD900.2D.440.R.13-C40	44,0	40	60	191	88	121	5	SONT 135012	407,70	440
MD900.2D.450.R.13-C40	45,0	40	60	193	90	123	5	SONT 135012	407,70	450
MD900.2D.460.R.13-C40	46,0	40	60	195	92	125	5	SONT 135012	407,70	460
MD900.2D.470.R.15-C40	47,0	40	60	198	94	128	5	SONT 155312	428,30	470
MD900.2D.480.R.15-C40	48,0	40	60	200	96	130	5	SONT 155312	428,30	480
MD900.2D.490.R.15-C40	49,0	40	60	202	98	132	5	SONT 155312	462,10	490
MD900.2D.500.R.15-C40	50,0	40	60	204	100	134	5	SONT 155312	462,10	500
MD900.2D.520.R.15-C40	51,0	40	60	206	102	136	5	SONT 155312	474,50	510
MD900.2D.510.R.15-C40	52,0	40	60	208	104	138	5	SONT 155312	474,50	520
MD900.2D.530.R.15-C40	53,0	40	60	210	106	140	5	SONT 155312	474,50	530
MD900.2D.540.R.15-C40	54,0	40	60	212	108	142	5	SONT 155312	474,50	540
MD900.2D.550.R.17-C40	55,0	40	60	215	110	145	5	SONT 175612	474,50	550
MD900.2D.560.R.17-C40	56,0	40	60	217	112	147	5	SONT 175612	491,90	560
MD900.2D.570.R.17-C40	57,0	40	60	219	114	149	5	SONT 175612	491,90	570
MD900.2D.580.R.17-C40	58,0	40	60	221	116	151	5	SONT 175612	491,90	580
MD900.2D.590.R.17-C40	59,0	40	60	223	118	153	5	SONT 175612	491,90	590
MD900.2D.600.R.17-C40	60,0	40	62	225	120	155	5	SONT 175612	491,90	600
MD900.2D.610.R.17-C40	61,0	40	62	227	122	157	5	SONT 175612	491,90	610
MD900.2D.620.R.17-C40	62,0	40	64	229	124	159	5	SONT 175612	491,90	620
MD900.2D.630.R.17-C40	63,0	40	64	231	126	161	5	SONT 175612	491,90	630

Y7



Key D

2A/28



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
12 - 13,5	T06 - IP	10,39	123	M1,8x3,6 - IP	3,68	862
14 - 17,5	T06 - IP	10,39	123	M2x4,3 - IP	3,28	863
18 - 23	T07 - IP	10,22	124	M2,2x5 - IP	3,18	856
24 - 27	T08 - IP	10,20	125	M2,5x6 - IP	4,09	857
28 - 32	T09 - IP	11,24	126	M3x7 - IP	3,14	819
33 - 41	T15 - IP	11,89	128	M3,5x8,6 - IP	3,14	859
42 - 63	T20 - IP	12,54	129	M4,5x10,5 - IP	3,14	864

Suitable adapters can be found in → **Chapter 16 Adapters.**

MaxiDrill 900

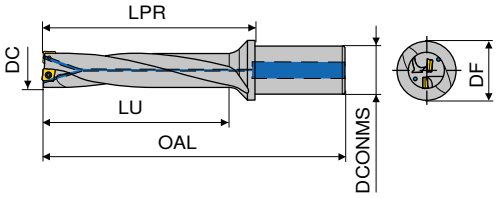
Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 3xD



C





2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 853 ... EUR	
MD900.3D.120.R.03-C20	12,0	20	28	102	36,0	52	0,4	SONT 031804	259,70	120
MD900.3D.125.R.03-C20	12,5	20	28	104	37,5	54	0,4	SONT 031804	259,70	125
MD900.3D.130.R.03-C20	13,0	20	28	105	39,0	55	0,4	SONT 031804	259,70	130
MD900.3D.135.R.03-C20	13,5	20	28	107	40,5	57	0,4	SONT 031804	259,70	135
MD900.3D.140.R.04-C20	14,0	20	30	109	42,0	59	0,7	SONT 042105	273,50	140
MD900.3D.145.R.04-C20	14,5	20	30	111	44,0	61	0,7	SONT 042105	273,50	145
MD900.3D.150.R.04-C20	15,0	20	30	112	45,0	62	0,7	SONT 042105	273,50	150
MD900.3D.155.R.04-C20	15,5	20	30	114	47,0	64	0,7	SONT 042105	280,00	155
MD900.3D.160.R.05-C20	16,0	20	30	115	48,0	65	0,7	SONT 052306	280,00	160
MD900.3D.165.R.05-C20	16,5	20	30	117	50,0	67	0,7	SONT 052306	280,00	165
MD900.3D.170.R.05-C20	17,0	20	30	118	51,0	68	0,7	SONT 052306	290,80	170
MD900.3D.175.R.05-C20	17,5	20	30	120	53,0	70	0,7	SONT 052306	290,80	175
MD900.3D.180.R.06-C25	18,0	25	32	128	54,0	72	1	SONT 062506	290,80	180
MD900.3D.185.R.06-C25	18,5	25	32	130	56,0	74	1	SONT 062506	290,80	185
MD900.3D.190.R.06-C25	19,0	25	32	131	57,0	75	1	SONT 062506	312,40	190
MD900.3D.195.R.06-C25	19,5	25	32	133	59,0	77	1	SONT 062506	312,40	195
MD900.3D.200.R.06-C25	20,0	25	32	134	60,0	78	1	SONT 062506	312,40	200
MD900.3D.205.R.06-C25	20,5	25	32	136	62,0	80	1	SONT 062506	312,40	205
MD900.3D.210.R.07-C25	21,0	25	32	138	63,0	82	1	SONT 072907	312,40	210
MD900.3D.215.R.07-C25	21,5	25	32	140	65,0	84	1	SONT 072907	312,40	215
MD900.3D.220.R.07-C25	22,0	25	32	141	66,0	85	1	SONT 072907	312,40	220
MD900.3D.225.R.07-C25	22,5	25	32	143	68,0	87	1	SONT 072907	322,10	225
MD900.3D.230.R.07-C25	23,0	25	32	144	69,0	88	1	SONT 072907	322,10	230
MD900.3D.235.R.07-C25	23,5	25	32	146	71,0	90	1	SONT 072907	322,10	235
MD900.3D.240.R.08-C32	24,0	32	40	155	72,0	95	1,2	SONT 083308	322,10	240
MD900.3D.245.R.08-C32	24,5	32	40	157	74,0	97	1,2	SONT 083308	322,10	245
MD900.3D.250.R.08-C32	25,0	32	40	158	75,0	98	1,2	SONT 083308	322,10	250
MD900.3D.255.R.08-C32	25,5	32	40	160	77,0	100	1,2	SONT 083308	322,10	255
MD900.3D.260.R.08-C32	26,0	32	40	161	78,0	101	1,2	SONT 083308	356,70	260
MD900.3D.265.R.08-C32	26,5	32	40	163	80,0	103	1,2	SONT 083308	356,70	265
MD900.3D.270.R.08-C32	27,0	32	40	164	81,0	104	1,2	SONT 083308	356,70	270
MD900.3D.275.R.08-C32	27,5	32	40	166	83,0	106	1,2	SONT 083308	356,70	275
MD900.3D.280.R.09-C32	28,0	32	40	167	84,0	107	2,2	SONT 093808	356,70	280
MD900.3D.285.R.09-C32	28,5	32	40	169	86,0	109	2,2	SONT 093808	356,70	285
MD900.3D.290.R.09-C32	29,0	32	40	170	87,0	110	2,2	SONT 093808	356,70	290
MD900.3D.295.R.09-C32	29,5	32	40	172	89,0	112	2,2	SONT 093808	356,70	295
MD900.3D.300.R.09-C32	30,0	32	40	173	90,0	113	2,2	SONT 093808	356,70	300
MD900.3D.305.R.09-C32	30,5	32	40	175	92,0	115	2,2	SONT 093808	356,70	305
MD900.3D.310.R.09-C32	31,0	32	40	176	93,0	116	2,2	SONT 093808	387,00	310
MD900.3D.315.R.09-C32	31,5	32	40	178	95,0	118	2,2	SONT 093808	387,00	315
MD900.3D.320.R.09-C32	32,0	32	40	179	96,0	119	2,2	SONT 093808	387,00	320
MD900.3D.325.R.10-C40	32,5	40	50	192	98,0	124	3,2	SONT 104408	387,00	325
MD900.3D.330.R.10-C40	33,0	40	50	193	99,0	125	3,2	SONT 104408	387,00	330
MD900.3D.335.R.10-C40	33,5	40	50	195	101,0	127	3,2	SONT 104408	387,00	335
MD900.3D.340.R.10-C40	34,0	40	50	196	102,0	128	3,2	SONT 104408	387,00	340
MD900.3D.345.R.10-C40	34,5	40	50	198	104,0	130	3,2	SONT 104408	387,00	345
MD900.3D.350.R.10-C40	35,0	40	50	199	105,0	131	3,2	SONT 104408	395,60	350

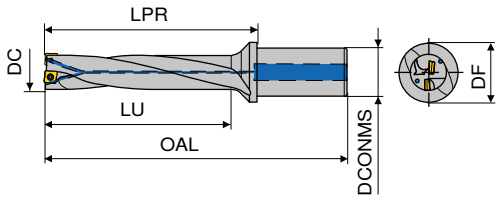
Continued on next page

MaxiDrill 900

Scope of supply:
Indexable Insert Drill including clamping screws and key

≤ 3xD

C





3

2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 853 ... EUR	
MD900.3D.355.R.10-C40	35,5	40	50	201	107,0	133	3,2	SONT 104408	395,60	355
MD900.3D.360.R.10-C40	36,0	40	50	202	108,0	134	3,2	SONT 104408	395,60	360
MD900.3D.365.R.10-C40	36,5	40	50	204	110,0	136	3,2	SONT 104408	395,60	365
MD900.3D.370.R.12-C40	37,0	40	56	211	111,0	141	3,2	SONT 124810	408,60	370
MD900.3D.380.R.12-C40	38,0	40	56	214	114,0	144	3,2	SONT 124810	408,60	380
MD900.3D.390.R.12-C40	39,0	40	56	217	117,0	147	3,2	SONT 124810	408,60	390
MD900.3D.400.R.12-C40	40,0	40	56	220	120,0	150	3,2	SONT 124810	408,60	400
MD900.3D.410.R.12-C40	41,0	40	56	223	123,0	153	3,2	SONT 124810	408,60	410
MD900.3D.420.R.13-C40	42,0	40	60	229	126,0	159	5	SONT 135012	429,10	420
MD900.3D.430.R.13-C40	43,0	40	60	232	129,0	162	5	SONT 135012	429,10	430
MD900.3D.440.R.13-C40	44,0	40	60	235	132,0	165	5	SONT 135012	429,10	440
MD900.3D.450.R.13-C40	45,0	40	60	238	135,0	168	5	SONT 135012	429,10	450
MD900.3D.460.R.13-C40	46,0	40	60	241	138,0	171	5	SONT 135012	429,10	460
MD900.3D.470.R.15-C40	47,0	40	60	245	141,0	175	5	SONT 155312	450,70	470
MD900.3D.480.R.15-C40	48,0	40	60	248	144,0	178	5	SONT 155312	450,70	480
MD900.3D.490.R.15-C40	49,0	40	60	251	147,0	181	5	SONT 155312	486,40	490
MD900.3D.500.R.15-C40	50,0	40	60	254	150,0	184	5	SONT 155312	486,40	500
MD900.3D.510.R.15-C40	51,0	40	60	257	153,0	187	5	SONT 155312	499,40	510
MD900.3D.520.R.15-C40	52,0	40	60	260	156,0	190	5	SONT 155312	499,40	520
MD900.3D.530.R.15-C40	53,0	40	60	263	159,0	193	5	SONT 155312	499,40	530
MD900.3D.540.R.15-C40	54,0	40	60	266	162,0	196	5	SONT 155312	499,40	540
MD900.3D.550.R.17-C40	55,0	40	60	270	165,0	200	5	SONT 175612	499,40	550
MD900.3D.560.R.17-C40	56,0	40	60	273	168,0	203	5	SONT 175612	517,80	560
MD900.3D.570.R.17-C40	57,0	40	60	276	171,0	206	5	SONT 175612	517,80	570
MD900.3D.580.R.17-C40	58,0	40	60	279	174,0	209	5	SONT 175612	517,80	580
MD900.3D.590.R.17-C40	59,0	40	60	282	177,0	212	5	SONT 175612	517,80	590
MD900.3D.600.R.17-C40	60,0	40	62	285	180,0	215	5	SONT 175612	517,80	600
MD900.3D.610.R.17-C40	61,0	40	62	288	183,0	218	5	SONT 175612	517,80	610
MD900.3D.620.R.17-C40	62,0	40	64	291	186,0	221	5	SONT 175612	517,80	620
MD900.3D.630.R.17-C40	63,0	40	64	294	189,0	224	5	SONT 175612	517,80	630

Y7



Key D

2A/28



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR		Article no. 70 950 ... EUR	
12 - 13,5	T06 - IP	10,39	123	M1,8x3,6 - IP	3,68	862
14 - 17,5	T06 - IP	10,39	123	M2x4,3 - IP	3,28	863
18 - 23,5	T07 - IP	10,22	124	M2,2x5 - IP	3,18	856
24 - 27,5	T08 - IP	10,20	125	M2,5x6 - IP	4,09	857
28 - 32	T09 - IP	11,24	126	M3x7 - IP	3,14	819
32,5 - 41	T15 - IP	11,89	128	M3,5x8,6 - IP	3,14	859
42 - 63	T20 - IP	12,54	129	M4,5x10,5 - IP	3,14	864

Suitable adapters can be found in → **Chapter 16 Adapters.**

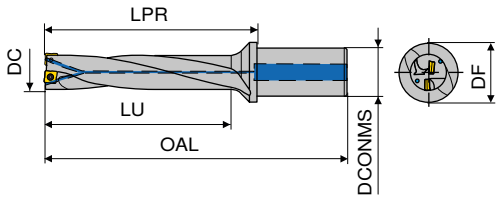
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 4xD

C





2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 854 ... EUR	
MD900.4D.120.R.03-C20	12,0	20	28	114	48	64	0,4	SONT 031804	358,20	120
MD900.4D.125.R.03-C20	12,5	20	28	116	50	66	0,4	SONT 031804	358,20	125
MD900.4D.130.R.03-C20	13,0	20	28	118	52	68	0,4	SONT 031804	358,20	130
MD900.4D.135.R.03-C20	13,5	20	28	120	54	70	0,4	SONT 031804	358,20	135
MD900.4D.140.R.04-C20	14,0	20	30	123	56	73	0,7	SONT 042105	368,60	140
MD900.4D.145.R.04-C20	14,5	20	30	125	58	75	0,7	SONT 042105	368,60	145
MD900.4D.150.R.04-C20	15,0	20	30	127	60	77	0,7	SONT 042105	368,60	150
MD900.4D.155.R.04-C20	15,5	20	30	129	62	79	0,7	SONT 042105	368,60	155
MD900.4D.160.R.05-C20	16,0	20	30	131	64	81	0,7	SONT 052306	377,20	160
MD900.4D.165.R.05-C20	16,5	20	30	133	66	83	0,7	SONT 052306	377,20	165
MD900.4D.170.R.05-C20	17,0	20	30	135	68	85	0,7	SONT 052306	391,40	170
MD900.4D.175.R.05-C20	17,5	20	30	137	70	87	0,7	SONT 052306	391,40	175
MD900.4D.180.R.06-C25	18,0	25	32	146	72	90	1	SONT 062506	391,40	180
MD900.4D.185.R.06-C25	18,5	25	32	148	74	92	1	SONT 062506	391,40	185
MD900.4D.190.R.06-C25	19,0	25	32	150	76	94	1	SONT 062506	420,50	190
MD900.4D.195.R.06-C25	19,5	25	32	152	78	96	1	SONT 062506	420,50	195
MD900.4D.200.R.06-C25	20,0	25	32	154	80	98	1	SONT 062506	420,50	200
MD900.4D.205.R.06-C25	20,5	25	32	156	82	100	1	SONT 062506	420,50	205
MD900.4D.210.R.07-C25	21,0	25	32	159	84	103	1	SONT 072907	420,50	210
MD900.4D.220.R.07-C25	22,0	25	32	163	88	107	1	SONT 072907	420,50	220
MD900.4D.230.R.07-C25	23,0	25	32	167	92	111	1	SONT 072907	434,50	230
MD900.4D.240.R.08-C32	24,0	32	40	179	96	119	1,2	SONT 083308	434,50	240
MD900.4D.250.R.08-C32	25,0	32	40	183	100	123	1,2	SONT 083308	434,50	250
MD900.4D.260.R.08-C32	26,0	32	40	187	104	127	1,2	SONT 083308	480,00	260
MD900.4D.270.R.08-C32	27,0	32	40	191	108	131	1,2	SONT 083308	480,00	270
MD900.4D.280.R.09-C32	28,0	32	40	195	112	135	2,2	SONT 093808	480,00	280
MD900.4D.290.R.09-C32	29,0	32	40	199	116	139	2,2	SONT 093808	480,00	290
MD900.4D.300.R.09-C32	30,0	32	40	203	120	143	2,2	SONT 093808	480,00	300
MD900.4D.310.R.09-C32	31,0	32	40	207	124	147	2,2	SONT 093808	521,00	310
MD900.4D.320.R.09-C32	32,0	32	40	211	128	151	2,2	SONT 093808	521,00	320
MD900.4D.330.R.10-C40	33,0	40	50	228	132	158	3,2	SONT 104408	521,00	330
MD900.4D.340.R.10-C40	34,0	40	50	232	136	162	3,2	SONT 104408	521,00	340
MD900.4D.350.R.10-C40	35,0	40	50	236	140	166	3,2	SONT 104408	531,90	350
MD900.4D.360.R.10-C40	36,0	40	50	240	144	170	3,2	SONT 104408	531,90	360
MD900.4D.370.R.12-C40	37,0	40	56	248	148	178	3,2	SONT 124810	550,20	370
MD900.4D.380.R.12-C40	38,0	40	56	252	152	182	3,2	SONT 124810	550,20	380
MD900.4D.390.R.12-C40	39,0	40	56	256	156	186	3,2	SONT 124810	550,20	390
MD900.4D.400.R.12-C40	40,0	40	56	260	160	190	3,2	SONT 124810	550,20	400
MD900.4D.410.R.12-C40	41,0	40	56	264	164	194	3,2	SONT 124810	550,20	410

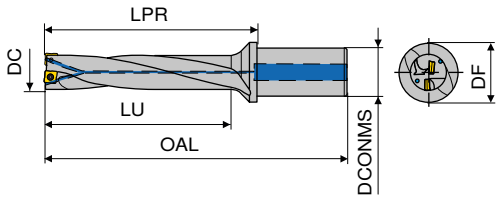
Continued on next page

MaxiDrill 900

Scope of supply:
Indexable Insert Drill including clamping screws and key

≤ 4xD

C





Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	2B/41 Article no. 10 854 ... EUR	
MD900.4D.420.R.13-C40	42,0	40	60	271	168	201	5	SONT 135012	577,20	**420**
MD900.4D.430.R.13-C40	43,0	40	60	275	172	205	5	SONT 135012	577,20	**430**
MD900.4D.440.R.13-C40	44,0	40	60	279	176	209	5	SONT 135012	577,20	**440**
MD900.4D.450.R.13-C40	45,0	40	60	283	180	213	5	SONT 135012	577,20	**450**
MD900.4D.460.R.13-C40	46,0	40	60	287	184	217	5	SONT 135012	577,20	**460**
MD900.4D.470.R.15-C40	47,0	40	60	292	188	222	5	SONT 155312	608,60	**470**
MD900.4D.480.R.15-C40	48,0	40	60	296	192	226	5	SONT 155312	608,60	**480**
MD900.4D.490.R.15-C40	49,0	40	60	300	196	230	5	SONT 155312	608,60	**490**
MD900.4D.500.R.15-C40	50,0	40	60	304	200	234	5	SONT 155312	608,60	**500**
MD900.4D.510.R.15-C40	51,0	40	60	308	204	238	5	SONT 155312	608,60	**510**
MD900.4D.520.R.15-C40	52,0	40	60	312	208	242	5	SONT 155312	608,60	**520**
MD900.4D.530.R.15-C40	53,0	40	60	316	212	246	5	SONT 155312	608,60	**530**
MD900.4D.540.R.15-C40	54,0	40	60	320	216	250	5	SONT 155312	608,60	**540**

Y7



Key D

2A/28



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
12 - 13	T06 - IP	10,39	**123**	M1,8x3,6 - IP	3,68	**862**
14 - 17	T06 - IP	10,39	**123**	M2x4,3 - IP	3,28	**863**
18 - 23	T07 - IP	10,22	**124**	M2,2x5 - IP	3,18	**856**
24 - 27	T08 - IP	10,20	**125**	M2,5x6 - IP	4,09	**857**
28 - 32	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**
33 - 41	T15 - IP	11,89	**128**	M3,5x8,6 - IP	3,14	**859**
42 - 54	T20 - IP	12,54	**129**	M4,5x10,5 - IP	3,14	**864**

Suitable adapters can be found in → **Chapter 16 Adapters.**

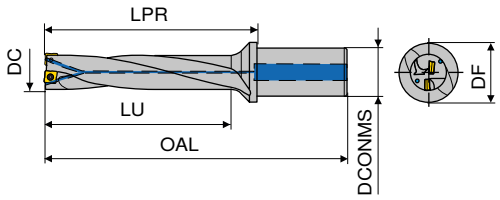
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 5xD

C





2B/41

Designation	DC	DCONMS	DF	OAL	LU	LPR	torque moment	Insert	Article no. 10 855 ... EUR	
	mm	mm	mm	mm	mm	mm	Nm			
MD900.5D.120.R.03-C20	12,0	20	28	126	60,0	76,0	0,4	SONT 031804	428,20	120
MD900.5D.125.R.03-C20	12,5	20	28	128	62,5	78,0	0,4	SONT 031804	428,20	125
MD900.5D.130.R.03-C20	13,0	20	28	131	65,0	81,0	0,4	SONT 031804	428,20	130
MD900.5D.135.R.03-C20	13,5	20	28	132	67,5	82,0	0,4	SONT 031804	428,20	135
MD900.5D.140.R.04-C20	14,0	20	30	137	70,0	87,0	0,7	SONT 042105	437,80	140
MD900.5D.145.R.04-C20	14,5	20	30	139	72,5	89,0	0,7	SONT 042105	437,80	145
MD900.5D.150.R.04-C20	15,0	20	30	142	75,0	92,0	0,7	SONT 042105	437,80	150
MD900.5D.155.R.04-C20	15,5	20	30	144	77,5	94,5	0,7	SONT 042105	437,80	155
MD900.5D.160.R.05-C20	16,0	20	30	147	80,0	97,0	0,7	SONT 052306	448,60	160
MD900.5D.165.R.05-C20	16,5	20	30	149	82,5	99,0	0,7	SONT 052306	448,60	165
MD900.5D.170.R.05-C20	17,0	20	30	152	85,0	102,0	0,7	SONT 052306	464,80	170
MD900.5D.175.R.05-C20	17,5	20	30	154	87,5	104,0	0,7	SONT 052306	464,80	175
MD900.5D.180.R.06-C25	18,0	25	32	164	90,0	108,0	1	SONT 062506	464,80	180
MD900.5D.185.R.06-C25	18,5	25	32	166	92,5	110,0	1	SONT 062506	464,80	185
MD900.5D.190.R.06-C25	19,0	25	32	169	95,0	113,0	1	SONT 062506	499,40	190
MD900.5D.195.R.06-C25	19,5	25	32	171	97,5	115,0	1	SONT 062506	499,40	195
MD900.5D.200.R.06-C25	20,0	25	32	174	100,0	118,0	1	SONT 062506	499,40	200
MD900.5D.205.R.06-C25	20,5	25	32	175	102,5	119,0	1	SONT 062506	499,40	205
MD900.5D.210.R.07-C25	21,0	25	32	180	105,0	124,0	1	SONT 072907	499,40	210
MD900.5D.220.R.07-C25	22,0	25	32	184	110,0	128,0	1	SONT 072907	499,40	220
MD900.5D.230.R.07-C25	23,0	25	32	189	115,0	133,0	1	SONT 072907	517,20	230
MD900.5D.240.R.08-C32	24,0	32	40	203	120,0	143,0	1,2	SONT 083308	517,20	240
MD900.5D.250.R.08-C32	25,0	32	40	208	125,0	148,0	1,2	SONT 083308	517,20	250
MD900.5D.260.R.08-C32	26,0	32	40	212	130,0	152,0	1,2	SONT 083308	570,80	260
MD900.5D.270.R.08-C32	27,0	32	40	217	135,0	157,0	1,2	SONT 083308	570,80	270
MD900.5D.280.R.09-C32	28,0	32	40	221	140,0	161,0	2,2	SONT 093808	570,80	280
MD900.5D.290.R.09-C32	29,0	32	40	226	145,0	166,0	2,2	SONT 093808	570,80	290
MD900.5D.300.R.09-C32	30,0	32	40	230	150,0	170,0	2,2	SONT 093808	570,80	300
MD900.5D.310.R.09-C32	31,0	32	40	235	155,0	175,0	2,2	SONT 093808	618,30	310
MD900.5D.320.R.09-C32	32,0	32	40	239	160,0	179,0	2,2	SONT 093808	618,30	320
MD900.5D.330.R.10-C40	33,0	40	50	259	165,0	191,0	3,2	SONT 104408	618,30	330
MD900.5D.340.R.10-C40	34,0	40	50	264	170,0	196,0	3,2	SONT 104408	618,30	340
MD900.5D.350.R.10-C40	35,0	40	50	269	175,0	201,0	3,2	SONT 104408	632,30	350
MD900.5D.360.R.10-C40	36,0	40	50	274	180,0	206,0	3,2	SONT 104408	632,30	360
MD900.5D.370.R.12-C40	37,0	40	56	285	185,0	215,0	3,2	SONT 124810	654,00	370
MD900.5D.380.R.12-C40	38,0	40	56	290	190,0	220,0	3,2	SONT 124810	654,00	380
MD900.5D.390.R.12-C40	39,0	40	56	295	195,0	225,0	3,2	SONT 124810	654,00	390
MD900.5D.400.R.12-C40	40,0	40	56	300	200,0	230,0	3,2	SONT 124810	654,00	400
MD900.5D.410.R.12-C40	41,0	40	56	305	205,0	235,0	3,2	SONT 124810	654,00	410

Y7



Key D

2A/28



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
12 - 13	T06 - IP	10,39	123	M1,8x3,6 - IP	3,68	862
14 - 17	T06 - IP	10,39	123	M2x4,3 - IP	3,28	863
18 - 23	T07 - IP	10,22	124	M2,2x5 - IP	3,18	856
24 - 27	T08 - IP	10,20	125	M2,5x6 - IP	4,09	857
28 - 32	T09 - IP	11,24	126	M3x7 - IP	3,14	819
33 - 41	T15 - IP	11,89	128	M3,5x8,6 - IP	3,14	859

Suitable adapters can be found in → **Chapter 16 Adapters.**

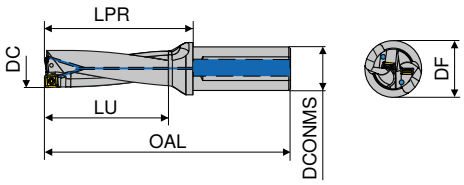
KUB 100

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD



C





3

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 881 ... EUR	
KUB-100.3D.140.R.04-C20	14,0	20	30	105	42	55	0,7	SONT 042105	360,90	99140
KUB-100.3D.150.R.04-C20	15,0	20	30	109	45	59	0,7	SONT 042105	360,90	99150
KUB-100.3D.160.R.05-C20	16,0	20	30	114	48	64	0,7	SONT 052306	360,90	99160
KUB-100.3D.165.R.05-C20	16,5	20	30	118	51	68	0,7	SONT 052306	360,90	99165
KUB-100.3D.170.R.05-C20	17,0	20	30	118	51	68	0,7	SONT 052306	370,20	99170
KUB-100.3D.175.R.05-C25	17,5	25	30	127	54	71	0,7	SONT 052306	370,20	99175
KUB-100.3D.180.R.06-C25	18,0	25	30	127	54	71	1	SONT 062506	370,20	99180
KUB-100.3D.185.R.06-C25	18,5	25	30	131	57	75	1	SONT 062506	370,20	99185
KUB-100.3D.190.R.06-C25	19,0	25	30	131	57	75	1	SONT 062506	380,60	99190
KUB-100.3D.195.R.06-C25	19,5	25	30	134	60	78	1	SONT 062506	380,60	99195
KUB-100.3D.200.R.06-C25	20,0	25	30	134	60	78	1	SONT 062506	380,60	99200
KUB-100.3D.210.R.07-C25	21,0	25	30	138	63	82	1	SONT 072907	405,60	99210
KUB-100.3D.220.R.07-C25	22,0	25	30	141	66	85	1	SONT 072907	405,60	99220
KUB-100.3D.230.R.07-C25	23,0	25	30	145	69	89	1	SONT 072907	405,60	99230
KUB-100.3D.240.R.08-C32	24,0	32	39	152	72	92	1,2	SONT 083308	439,90	99240
KUB-100.3D.250.R.08-C32	25,0	32	39	156	75	96	1,2	SONT 083308	439,90	99250
KUB-100.3D.260.R.08-C32	26,0	32	39	159	78	99	1,2	SONT 083308	439,90	99260
KUB-100.3D.270.R.08-C32	27,0	32	39	163	81	103	1,2	SONT 083308	462,80	99270

Y7



Key D

2A/28



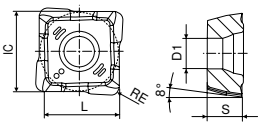
Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
14 - 17,5	T06 - IP	10,39	123	M2x4,3 - IP	3,28	863
18 - 23	T07 - IP	10,22	124	M2,2x5 - IP	3,18	856
24 - 27	T08 - IP	10,20	125	M2,5x6 - IP	4,09	857

Suitable adapters can be found in → **Chapter 16 Adapters.**

SONT

Designation	IC	D1	L	S
	mm	mm	mm	mm
SONT 0318..	5,4	2,10	3,8	1,80
SONT 0421..	4,6	2,25	4,2	2,10
SONT 0523..	5,3	2,25	4,8	2,30
SONT 0625..	5,9	2,50	5,5	2,50
SONT 0729..	6,5	2,50	6,1	2,90
SONT 0833..	7,7	2,90	7,3	3,30
SONT 0938..	8,9	3,50	8,5	3,80
SONT 1044..	10,1	4,10	9,6	4,40
SONT 1248..	11,6	4,10	11,0	4,80
SONT 1350..	13,0	5,30	12,2	5,00
SONT 1553..	15,2	5,30	14,4	5,30
SONT 1756..	17,5	5,30	16,7	5,60



SONT

	-M30 CTPP430	-M30 CTPP430	-M30 CTCP420	-M30 CTCP420
	-M30 CCN1430	-M30 CCN1430	-M30 DCX1420	-M30 DCX1420
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	SONT 1A/08	SONT 1A/08	SONT 1A/08	SONT 1A/08
ISO	RE	Article no. 10 830 ...	Article no. 10 830 ...	Article no. 10 830 ...	Article no. 10 830 ...
	mm	EUR	EUR	EUR	EUR
031804	0,4	12,11 103 [1]		12,11 703 [1]	
042105	0,5		13,88 104		13,88 704
052306	0,6		14,07 105		14,07 705
062506	0,6		14,30 106		14,30 706
072907	0,7		14,62 107		14,62 707
083308	0,8		14,94 108		14,94 708
093808	0,8		15,30 109		15,30 709
104408	0,8		16,03 110		16,03 710
124810	1,0		16,98 112		16,98 712
135012	1,2		17,98 113		17,98 713
155312	1,2		20,39 115		20,39 715
175612	1,2		21,61 117		21,61 717

Steel	●	●	●	●
Stainless steel	●	●	○	○
Cast iron	○	○	●	●
Non ferrous metals	○	○		
Heat resistant alloys	○	○		
hardened materials				

1) two usable cutting edges

→ v_c/f_z Page 43–46

CTCP420 -M30 (DCX1420) is exclusively recommended for use on the peripheral cutting edge!

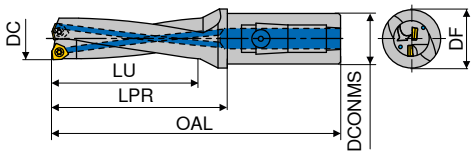
KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 2xD



K





3

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 892 ... EUR	
KUB-T.2D.140.R.03-K20	V4331404	14	20	30	102	28	52	0,62	WOEX 030204	302,60	14011
KUB-T.2D.150.R.03-K20	V4331504	15	20	30	104	30	54	0,62	WOEX 030204	302,60	15011
KUB-T.2D.160.R.03-K20	V4331602	16	20	30	106	32	56	0,62	WOEX 030204	302,60	16011
KUB-T.2D.170.R.03-K20	V4331702	17	20	30	108	34	58	0,62	WOEX 030204	302,60	17011
KUB-T.2D.180.R.03-K20	V4331802	18	20	30	110	36	60	0,62	WOEX 030204	302,60	18011
KUB-T.2D.190.R.03-K20	V4331902	19	20	30	112	38	62	0,62	WOEX 030204	302,60	19011
KUB-T.2D.200.R.04-K25	V4432002	20	25	30	120	40	64	1,01	WOEX 040304	305,80	20012
KUB-T.2D.210.R.04-K25	V4432102	21	25	30	122	42	66	1,01	WOEX 040304	305,80	21012
KUB-T.2D.220.R.04-K25	V4432202	22	25	30	124	44	68	1,01	WOEX 040304	305,80	22012
KUB-T.2D.230.R.04-K25	V4432302	23	25	30	126	46	70	1,01	WOEX 040304	305,80	23012
KUB-T.2D.240.R.04-K25	V4432402	24	25	30	128	48	72	1,01	WOEX 040304	305,80	24012
KUB-T.2D.250.R.05-K32	V4532502	25	32	39	134	50	74	1,28	WOEX 05T304	331,80	25013
KUB-T.2D.260.R.05-K32	V4532602	26	32	39	136	52	76	1,28	WOEX 05T304	331,80	26013
KUB-T.2D.270.R.05-K32	V4532702	27	32	39	138	54	78	1,28	WOEX 05T304	331,80	27013
KUB-T.2D.280.R.05-K32	V4532802	28	32	39	140	56	80	1,28	WOEX 05T304	331,80	28013
KUB-T.2D.290.R.05-K32	V4532902	29	32	39	142	58	82	1,28	WOEX 05T304	331,80	29013
KUB-T.2D.300.R.05-K32	V4533002	30	32	39	149	60	89	1,28	WOEX 05T304	331,80	30013
KUB-T.2D.310.R.05-K32	V4533102	31	32	39	151	62	91	1,28	WOEX 05T304	331,80	31013
KUB-T.2D.320.R.05-K32	V4533202	32	32	39	153	64	93	1,28	WOEX 05T304	331,80	32013
KUB-T.2D.330.R.05-K32	V4533302	33	32	39	155	66	95	1,28	WOEX 05T304	331,80	33013
KUB-T.2D.340.R.05-K32	V4533402	34	32	39	157	68	97	1,28	WOEX 05T304	331,80	34013
KUB-T.2D.350.R.05-K32	V4533502	35	32	39	159	70	99	1,28	WOEX 05T304	331,80	35013
KUB-T.2D.360.R.05-K32	V4533602	36	32	39	161	72	101	1,28	WOEX 05T304	331,80	36013
KUB-T.2D.370.R.06-K32	V4533702	37	32	39	173	74	113	2,8	WOEX 06T304	346,30	37013
KUB-T.2D.380.R.06-K32	V4533802	38	32	39	175	76	115	2,8	WOEX 06T304	346,30	38013
KUB-T.2D.390.R.06-K32	V4533902	39	32	39	177	78	117	2,8	WOEX 06T304	346,30	39013
KUB-T.2D.400.R.06-K32	V4534002	40	32	39	179	80	119	2,8	WOEX 06T304	346,30	40013
KUB-T.2D.410.R.06-K32	V4534102	41	32	39	181	82	121	2,8	WOEX 06T304	346,30	41013
KUB-T.2D.420.R.06-K32	V4534202	42	32	39	183	84	123	2,8	WOEX 06T304	346,30	42013
KUB-T.2D.430.R.06-K32	V4534302	43	32	39	185	86	125	2,8	WOEX 06T304	346,30	43013
KUB-T.2D.440.R.06-K32	V4534402	44	32	39	187	88	127	2,8	WOEX 06T304	346,30	44013

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 19	T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
20 - 24	T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
25 - 36	T08 - IP	10,20	125	M2,5x7,2 - 10IP	2,36	10500
37 - 44	T10 - IP	11,56	127	M3,5x7,3 - 10IP	2,36	10600

Suitable adapters can be found in → **Chapter 16 Adapters.**

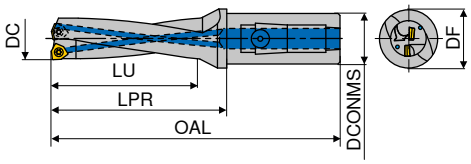
KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD



K





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 893 ... EUR	
KUB-T.3D.140.R.03-K20	V4371404	14	20	30	116	42	66	0,62	WOEX 030204	317,20	14011
KUB-T.3D.150.R.03-K20	V4371504	15	20	30	119	45	69	0,62	WOEX 030204	317,20	15011
KUB-T.3D.160.R.03-K20	V4371602	16	20	30	122	48	72	0,62	WOEX 030204	317,20	16011
KUB-T.3D.170.R.03-K20	V4371702	17	20	30	125	51	75	0,62	WOEX 030204	317,20	17011
KUB-T.3D.180.R.03-K20	V4371802	18	20	30	128	54	78	0,62	WOEX 030204	317,20	18011
KUB-T.3D.190.R.03-K20	V4371902	19	20	30	131	57	81	0,62	WOEX 030204	317,20	19011
KUB-T.3D.200.R.04-K25	V4472002	20	25	30	140	60	84	1,01	WOEX 040304	340,10	20012
KUB-T.3D.210.R.04-K25	V4472102	21	25	30	143	63	87	1,01	WOEX 040304	340,10	21012
KUB-T.3D.220.R.04-K25	V4472202	22	25	30	146	66	90	1,01	WOEX 040304	340,10	22012
KUB-T.3D.230.R.04-K25	V4472302	23	25	30	149	69	93	1,01	WOEX 040304	340,10	23012
KUB-T.3D.240.R.04-K25	V4472402	24	25	30	152	72	96	1,01	WOEX 040304	340,10	24012
KUB-T.3D.250.R.05-K32	V4572502	25	32	39	159	75	99	1,28	WOEX 05T304	370,20	25013
KUB-T.3D.260.R.05-K32	V4572602	26	32	39	162	78	102	1,28	WOEX 05T304	370,20	26013
KUB-T.3D.270.R.05-K32	V4572702	27	32	39	165	81	105	1,28	WOEX 05T304	370,20	27013
KUB-T.3D.280.R.05-K32	V4572802	28	32	39	168	84	108	1,28	WOEX 05T304	370,20	28013
KUB-T.3D.290.R.05-K32	V4572902	29	32	39	171	87	111	1,28	WOEX 05T304	370,20	29013
KUB-T.3D.300.R.05-K32	V4573002	30	32	39	179	90	119	1,28	WOEX 05T304	370,20	30013
KUB-T.3D.310.R.05-K32	V4573102	31	32	39	182	93	122	1,28	WOEX 05T304	370,20	31013
KUB-T.3D.320.R.05-K32	V4573202	32	32	39	185	96	125	1,28	WOEX 05T304	370,20	32013
KUB-T.3D.330.R.05-K32	V4573302	33	32	39	188	99	128	1,28	WOEX 05T304	370,20	33013
KUB-T.3D.340.R.05-K32	V4573402	34	32	39	191	102	131	1,28	WOEX 05T304	370,20	34013
KUB-T.3D.350.R.05-K32	V4573502	35	32	39	194	105	134	1,28	WOEX 05T304	370,20	35013
KUB-T.3D.360.R.05-K32	V4573602	36	32	39	197	108	137	1,28	WOEX 05T304	370,20	36013
KUB-T.3D.370.R.06-K32	V4573702	37	32	39	210	111	150	2,8	WOEX 06T304	401,40	37013
KUB-T.3D.380.R.06-K32	V4573802	38	32	39	213	114	153	2,8	WOEX 06T304	401,40	38013
KUB-T.3D.390.R.06-K32	V4573902	39	32	39	216	117	156	2,8	WOEX 06T304	401,40	39013
KUB-T.3D.400.R.06-K32	V4574002	40	32	39	219	120	159	2,8	WOEX 06T304	401,40	40013
KUB-T.3D.410.R.06-K32	V4574102	41	32	39	222	123	162	2,8	WOEX 06T304	401,40	41013
KUB-T.3D.420.R.06-K32	V4574202	42	32	39	225	126	165	2,8	WOEX 06T304	401,40	42013
KUB-T.3D.430.R.06-K32	V4574302	43	32	39	228	129	168	2,8	WOEX 06T304	401,40	43013
KUB-T.3D.440.R.06-K32	V4574402	44	32	39	231	132	171	2,8	WOEX 06T304	401,40	44013

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 19	T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
20 - 24	T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
25 - 36	T08 - IP	10,20	125	M2,5x7,2 - 10IP	2,36	10500
37 - 44	T10 - IP	11,56	127	M3,5x7,3 - 10IP	2,36	10600

Suitable adapters can be found in → **Chapter 16 Adapters.**

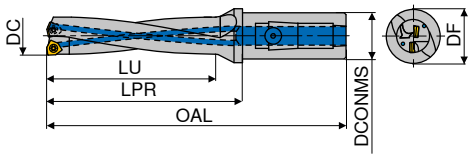
KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD



K





Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 894 ... EUR	
KUB-T.4D.140.R.03-K20	V4391404	14	20	30	130	56	80	0,62	WOEX 030204	348,40	**14011**
KUB-T.4D.150.R.03-K20	V4391504	15	20	30	134	60	84	0,62	WOEX 030204	348,40	**15011**
KUB-T.4D.160.R.03-K20	V4391602	16	20	30	138	64	88	0,62	WOEX 030204	348,40	**16011**
KUB-T.4D.170.R.03-K20	V4391702	17	20	30	142	68	92	0,62	WOEX 030204	348,40	**17011**
KUB-T.4D.180.R.03-K20	V4391802	18	20	30	146	72	96	0,62	WOEX 030204	348,40	**18011**
KUB-T.4D.190.R.03-K20	V4391902	19	20	30	150	76	100	0,62	WOEX 030204	348,40	**19011**
KUB-T.4D.200.R.04-K25	V4492002	20	25	30	160	80	104	1,01	WOEX 040304	374,40	**20012**
KUB-T.4D.210.R.04-K25	V4492102	21	25	30	164	84	108	1,01	WOEX 040304	374,40	**21012**
KUB-T.4D.220.R.04-K25	V4492202	22	25	30	168	88	112	1,01	WOEX 040304	374,40	**22012**
KUB-T.4D.230.R.04-K25	V4492302	23	25	30	172	92	116	1,01	WOEX 040304	374,40	**23012**
KUB-T.4D.240.R.04-K25	V4492402	24	25	30	176	96	120	1,01	WOEX 040304	374,40	**24012**
KUB-T.4D.250.R.05-K32	V4592502	25	32	39	184	100	124	1,28	WOEX 05T304	383,80	**25013**
KUB-T.4D.260.R.05-K32	V4592602	26	32	39	188	104	128	1,28	WOEX 05T304	383,80	**26013**
KUB-T.4D.270.R.05-K32	V4592702	27	32	39	192	108	132	1,28	WOEX 05T304	383,80	**27013**
KUB-T.4D.280.R.05-K32	V4592802	28	32	39	196	112	136	1,28	WOEX 05T304	383,80	**28013**
KUB-T.4D.290.R.05-K32	V4592902	29	32	39	200	116	140	1,28	WOEX 05T304	404,60	**29013**
KUB-T.4D.300.R.05-K32	V4593002	30	32	39	209	120	149	1,28	WOEX 05T304	404,60	**30013**
KUB-T.4D.310.R.05-K32	V4593102	31	32	39	213	124	153	1,28	WOEX 05T304	404,60	**31013**
KUB-T.4D.320.R.05-K32	V4593202	32	32	39	217	128	157	1,28	WOEX 05T304	404,60	**32013**
KUB-T.4D.330.R.05-K32	V4593302	33	32	39	221	132	161	1,28	WOEX 05T304	404,60	**33013**
KUB-T.4D.340.R.05-K32	V4593402	34	32	39	225	136	165	1,28	WOEX 05T304	404,60	**34013**
KUB-T.4D.350.R.05-K32	V4593502	35	32	39	229	140	169	1,28	WOEX 05T304	404,60	**35013**

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 19	T06 - IP	10,39	**123**	M2,0x4,3 - 06IP	2,36	**10000**
20 - 24	T06 - IP	10,39	**123**	M2,2x5,5 - 06IP	2,36	**10700**
25 - 35	T08 - IP	10,20	**125**	M2,5x7,2 - 10IP	2,36	**10500**

Suitable adapters can be found in → **Chapter 16 Adapters.**

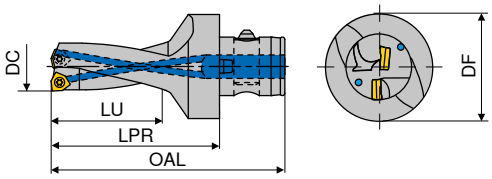
KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 2xD



ABS





NEW 2B/6#

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 892 ... EUR	
KUB-T.2D.140.R.03-ABS50	V3031403	14	50	94	28	63	0,62	WOEX 030204	356,70	14095
KUB-T.2D.150.R.03-ABS50	V3031503	15	50	96	30	65	0,62	WOEX 030204	356,70	15095
KUB-T.2D.160.R.03-ABS50	V3031601	16	50	98	32	67	0,62	WOEX 030204	356,70	16095
KUB-T.2D.170.R.03-ABS50	V3031701	17	50	100	34	69	0,62	WOEX 030204	356,70	17095
KUB-T.2D.180.R.03-ABS50	V3031801	18	50	102	36	71	0,62	WOEX 030204	356,70	18095
KUB-T.2D.190.R.03-ABS50	V3031901	19	50	104	38	73	0,62	WOEX 030204	356,70	19095
KUB-T.2D.200.R.04-ABS50	V3032001	20	50	106	40	75	1,01	WOEX 040304	358,80	20095
KUB-T.2D.210.R.04-ABS50	V3032101	21	50	108	42	77	1,01	WOEX 040304	358,80	21095
KUB-T.2D.220.R.04-ABS50	V3032201	22	50	110	44	79	1,01	WOEX 040304	358,80	22095
KUB-T.2D.230.R.04-ABS50	V3032301	23	50	112	46	81	1,01	WOEX 040304	358,80	23095
KUB-T.2D.240.R.04-ABS50	V3032401	24	50	114	48	83	1,01	WOEX 040304	358,80	24095
KUB-T.2D.250.R.05-ABS50	V3032501	25	50	116	50	85	1,28	WOEX 05T304	364,00	25095
KUB-T.2D.260.R.05-ABS50	V3032601	26	50	118	52	87	1,28	WOEX 05T304	364,00	26095
KUB-T.2D.270.R.05-ABS50	V3032701	27	50	120	54	89	1,28	WOEX 05T304	364,00	27095
KUB-T.2D.280.R.05-ABS50	V3032801	28	50	122	56	91	1,28	WOEX 05T304	364,00	28095
KUB-T.2D.290.R.05-ABS50	V3032901	29	50	124	58	93	1,28	WOEX 05T304	364,00	29095
KUB-T.2D.300.R.05-ABS50	V3033001	30	50	131	60	100	1,28	WOEX 05T304	364,00	30095
KUB-T.2D.310.R.05-ABS50	V3033101	31	50	133	62	102	1,28	WOEX 05T304	364,00	31095
KUB-T.2D.320.R.05-ABS50	V3033201	32	50	135	64	104	1,28	WOEX 05T304	364,00	32095
KUB-T.2D.330.R.05-ABS50	V3033301	33	50	137	66	106	1,28	WOEX 05T304	364,00	33095
KUB-T.2D.340.R.05-ABS50	V3033401	34	50	139	68	108	1,28	WOEX 05T304	364,00	34095
KUB-T.2D.350.R.05-ABS50	V3033501	35	50	141	70	110	1,28	WOEX 05T304	364,00	35095
KUB-T.2D.360.R.05-ABS50	V3033601	36	50	143	72	112	1,28	WOEX 05T304	364,00	36095
KUB-T.2D.370.R.06-ABS50	V3033701	37	50	155	74	124	2,8	WOEX 06T304	382,70	37095
KUB-T.2D.380.R.06-ABS50	V3033801	38	50	157	76	126	2,8	WOEX 06T304	382,70	38095
KUB-T.2D.390.R.06-ABS50	V3033901	39	50	159	78	128	2,8	WOEX 06T304	382,70	39095
KUB-T.2D.400.R.06-ABS50	V3034001	40	50	161	80	130	2,8	WOEX 06T304	382,70	40095
KUB-T.2D.410.R.06-ABS50	V3034101	41	50	163	82	132	2,8	WOEX 06T304	382,70	41095
KUB-T.2D.420.R.06-ABS50	V3034201	42	50	165	84	134	2,8	WOEX 06T304	382,70	42095
KUB-T.2D.430.R.06-ABS50	V3034301	43	50	167	86	136	2,8	WOEX 06T304	382,70	43095
KUB-T.2D.440.R.06-ABS50	V3034401	44	50	169	88	138	2,8	WOEX 06T304	382,70	44095

Y7



Key D

W7



Clamping screw

Spare parts DC		Article no. 80 950 ... EUR			Article no. 10 950 ... EUR	
14 - 19	T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
20 - 24	T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
25 - 36	T08 - IP	10,20	125	M2,5x7,2 - 10IP	2,36	10500
37 - 44	T10 - IP	11,56	127	M3,5x7,3 - 10IP	2,36	10600

Suitable adapters can be found in → **Chapter 16 Adapters.**

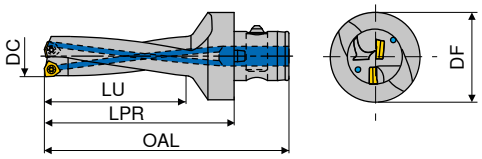
KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD



ABS





Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 893 ... EUR	
KUB-T.3D.140.R.03-ABS50	V3071403	14	50	108	42	77	0,62	WOEX 030204	392,10	14095
KUB-T.3D.150.R.03-ABS50	V3071503	15	50	111	45	80	0,62	WOEX 030204	392,10	15095
KUB-T.3D.160.R.03-ABS50	V3071601	16	50	114	48	83	0,62	WOEX 030204	392,10	16095
KUB-T.3D.170.R.03-ABS50	V3071701	17	50	117	51	86	0,62	WOEX 030204	392,10	17095
KUB-T.3D.180.R.03-ABS50	V3071801	18	50	120	54	89	0,62	WOEX 030204	392,10	18095
KUB-T.3D.190.R.03-ABS50	V3071901	19	50	123	57	92	0,62	WOEX 030204	392,10	19095
KUB-T.3D.200.R.04-ABS50	V3072001	20	50	126	60	95	1,01	WOEX 040304	399,40	20095
KUB-T.3D.210.R.04-ABS50	V3072101	21	50	129	63	98	1,01	WOEX 040304	399,40	21095
KUB-T.3D.220.R.04-ABS50	V3072201	22	50	132	66	101	1,01	WOEX 040304	399,40	22095
KUB-T.3D.230.R.04-ABS50	V3072301	23	50	135	69	104	1,01	WOEX 040304	399,40	23095
KUB-T.3D.240.R.04-ABS50	V3072401	24	50	138	72	107	1,01	WOEX 040304	399,40	24095
KUB-T.3D.250.R.05-ABS50	V3072501	25	50	141	75	110	1,28	WOEX 05T304	408,70	25095
KUB-T.3D.260.R.05-ABS50	V3072601	26	50	144	78	113	1,28	WOEX 05T304	408,70	26095
KUB-T.3D.270.R.05-ABS50	V3072701	27	50	147	81	116	1,28	WOEX 05T304	408,70	27095
KUB-T.3D.280.R.05-ABS50	V3072801	28	50	150	84	119	1,28	WOEX 05T304	408,70	28095
KUB-T.3D.290.R.05-ABS50	V3072901	29	50	153	87	122	1,28	WOEX 05T304	408,70	29095
KUB-T.3D.300.R.05-ABS50	V3073001	30	50	161	90	130	1,28	WOEX 05T304	408,70	30095
KUB-T.3D.310.R.05-ABS50	V3073101	31	50	164	93	133	1,28	WOEX 05T304	408,70	31095
KUB-T.3D.320.R.05-ABS50	V3073201	32	50	167	96	136	1,28	WOEX 05T304	408,70	32095
KUB-T.3D.330.R.05-ABS50	V3073301	33	50	170	99	139	1,28	WOEX 05T304	408,70	33095
KUB-T.3D.340.R.05-ABS50	V3073401	34	50	173	102	142	1,28	WOEX 05T304	408,70	34095
KUB-T.3D.350.R.05-ABS50	V3073501	35	50	176	105	145	1,28	WOEX 05T304	408,70	35095
KUB-T.3D.360.R.05-ABS50	V3073601	36	50	179	108	148	1,28	WOEX 05T304	408,70	36095
KUB-T.3D.370.R.06-ABS50	V3073701	37	50	192	111	161	2,8	WOEX 06T304	444,10	37095
KUB-T.3D.380.R.06-ABS50	V3073801	38	50	195	114	164	2,8	WOEX 06T304	444,10	38095
KUB-T.3D.390.R.06-ABS50	V3073901	39	50	198	117	167	2,8	WOEX 06T304	444,10	39095
KUB-T.3D.400.R.06-ABS50	V3074001	40	50	201	120	170	2,8	WOEX 06T304	444,10	40095
KUB-T.3D.410.R.06-ABS50	V3074101	41	50	204	123	173	2,8	WOEX 06T304	444,10	41095
KUB-T.3D.420.R.06-ABS50	V3074201	42	50	207	126	176	2,8	WOEX 06T304	444,10	42095
KUB-T.3D.430.R.06-ABS50	V3074301	43	50	210	129	179	2,8	WOEX 06T304	444,10	43095
KUB-T.3D.440.R.06-ABS50	V3074401	44	50	213	132	182	2,8	WOEX 06T304	444,10	44095

Spare parts

DC	Y7 Key D	Article no. 80 950 ... EUR		W7 Clamping screw	Article no. 10 950 ... EUR	
14 - 19	T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36	10000
20 - 24	T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36	10700
25 - 36	T08 - IP	10,20	125	M2,5x7,2 - 10IP	2,36	10500
37 - 44	T10 - IP	11,56	127	M3,5x7,3 - 10IP	2,36	10600

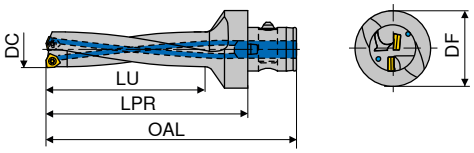
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD

ABS





Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 894 ... EUR	
KUB-T.4D.140.R.03-ABS50	V3091403	14	50	122	56	91	0,62	WOEX 030204	431,60	14095
KUB-T.4D.150.R.03-ABS50	V3091503	15	50	126	60	95	0,62	WOEX 030204	431,60	15095
KUB-T.4D.160.R.03-ABS50	V3091601	16	50	130	64	99	0,62	WOEX 030204	431,60	16095
KUB-T.4D.170.R.03-ABS50	V3091701	17	50	134	68	103	0,62	WOEX 030204	431,60	17095
KUB-T.4D.180.R.03-ABS50	V3091801	18	50	138	72	107	0,62	WOEX 030204	431,60	18095
KUB-T.4D.190.R.03-ABS50	V3091901	19	50	142	76	111	0,62	WOEX 030204	431,60	19095
KUB-T.4D.200.R.04-ABS50	V3092001	20	50	146	80	115	1,01	WOEX 040304	439,90	20095
KUB-T.4D.210.R.04-ABS50	V3092101	21	50	150	84	119	1,01	WOEX 040304	439,90	21095
KUB-T.4D.220.R.04-ABS50	V3092201	22	50	154	88	123	1,01	WOEX 040304	439,90	22095
KUB-T.4D.230.R.04-ABS50	V3092301	23	50	158	92	127	1,01	WOEX 040304	439,90	23095
KUB-T.4D.240.R.04-ABS50	V3092401	24	50	162	96	131	1,01	WOEX 040304	439,90	24095
KUB-T.4D.250.R.05-ABS50	V3092501	25	50	166	100	135	1,28	WOEX 05T304	449,30	25095
KUB-T.4D.260.R.05-ABS50	V3092601	26	50	170	104	139	1,28	WOEX 05T304	449,30	26095
KUB-T.4D.270.R.05-ABS50	V3092701	27	50	174	108	143	1,28	WOEX 05T304	449,30	27095
KUB-T.4D.280.R.05-ABS50	V3092801	28	50	178	112	147	1,28	WOEX 05T304	449,30	28095
KUB-T.4D.290.R.05-ABS50	V3092901	29	50	182	116	151	1,28	WOEX 05T304	449,30	29095
KUB-T.4D.300.R.05-ABS50	V3093001	30	50	191	120	160	1,28	WOEX 05T304	449,30	30095
KUB-T.4D.310.R.05-ABS50	V3093101	31	50	195	124	164	1,28	WOEX 05T304	449,30	31095
KUB-T.4D.320.R.05-ABS50	V3093201	32	50	199	128	168	1,28	WOEX 05T304	449,30	32095
KUB-T.4D.330.R.05-ABS50	V3093301	33	50	203	132	172	1,28	WOEX 05T304	449,30	33095
KUB-T.4D.340.R.05-ABS50	V3093401	34	50	207	136	176	1,28	WOEX 05T304	449,30	34095
KUB-T.4D.350.R.05-ABS50	V3093501	35	50	211	140	180	1,28	WOEX 05T304	449,30	35095
KUB-T.4D.360.R.05-ABS50	V3093601	36	50	215	144	184	1,28	WOEX 05T304	449,30	36095
KUB-T.4D.370.R.06-ABS50	V3093701	37	50	229	148	198	2,8	WOEX 06T304	487,80	37095
KUB-T.4D.380.R.06-ABS50	V3093801	38	50	233	152	202	2,8	WOEX 06T304	487,80	38095
KUB-T.4D.390.R.06-ABS50	V3093901	39	50	237	156	206	2,8	WOEX 06T304	487,80	39095
KUB-T.4D.400.R.06-ABS50	V3094001	40	50	241	160	210	2,8	WOEX 06T304	487,80	40095
KUB-T.4D.410.R.06-ABS50	V3094101	41	50	245	164	214	2,8	WOEX 06T304	487,80	41095
KUB-T.4D.420.R.06-ABS50	V3094201	42	50	249	168	218	2,8	WOEX 06T304	487,80	42095
KUB-T.4D.430.R.06-ABS50	V3094301	43	50	253	172	222	2,8	WOEX 06T304	487,80	43095
KUB-T.4D.440.R.06-ABS50	V3094401	44	50	257	176	226	2,8	WOEX 06T304	487,80	44095

Y7



Key D

W7



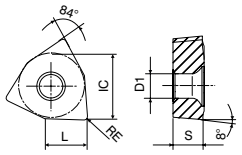
Clamping screw

Spare parts DC		Article no. 80 950 ... EUR		Article no. 10 950 ... EUR	
14 - 19	T06 - IP	10,39	123	M2,0x4,3 - 06IP	2,36 10000
20 - 24	T06 - IP	10,39	123	M2,2x5,5 - 06IP	2,36 10700
25 - 36	T08 - IP	10,20	125	M2,5x7,2 - 10IP	2,36 10500
37 - 44	T10 - IP	11,56	127	M3,5x7,3 - 10IP	2,36 10600

Suitable adapters can be found in → **Chapter 16 Adapters.**

WOEX

Designation	L	IC	S	D1
	mm	mm	mm	mm
WOEX 0302..	3,2	5,00	2,30	2,30
WOEX 0403..	4,1	6,35	3,18	2,55
WOEX 05T3..	5,3	8,00	3,80	2,85
WOEX 06T3..	6,6	10,00	3,80	4,05



WOEX


WOEX
NEW 1A/3#
Article no. 10 821 ...
-01 BK8425


WOEX
NEW 1A/3#
Article no. 10 821 ...
-03 BK8425


WOEX
NEW 1A/3#
Article no. 10 821 ...
-13 BK8425


WOEX
NEW 1A/3#
Article no. 10 821 ...
-01 BK6115

ISO	KOMET no.	RE	-01 BK8425		-03 BK8425		-13 BK8425		-01 BK6115	
		mm	EUR		EUR		EUR		EUR	
030204	W2910030.048425	0,4			11,65	30303				
030204	W2910130.048425	0,4					13,73	30313		
030204	W2910010.048425	0,4	11,34	30301						
030204	W2910010.046115	0,4							16,43	40301
040304	W2918130.048425	0,4					13,83	30413		
040304	W2918030.048425	0,4			12,38	30403				
040304	W2918010.048425	0,4	12,06	30401						
040304	W2918010.046115	0,4							16,54	40401
05T304	W2924130.048425	0,4					14,14	30513		
05T304	W2924030.048425	0,4			17,47	30503				
05T304	W2924010.048425	0,4	12,38	30501						
05T304	W2924010.046115	0,4							15,91	40501
06T304	W2934130.048425	0,4					15,60	30613		
06T304	W2934030.048425	0,4			18,30	30603				
06T304	W2934010.048425	0,4	13,83	30601						
06T304	W2934010.046115	0,4							17,68	40601
Steel			●		●		●		●	
Stainless steel			●		●		●			
Cast iron			●		●		●		●	
Non ferrous metals										
Heat resistant alloys										
hardened materials									○	

→ v_c/f_z Page 47–50

BK8425 -03 and BK6115 -01 are exclusively recommended for use on the peripheral cutting edge!

Specialised indexable inserts for machining aluminium or stainless steels (BK7935, BK62, BK77) can be found in our online shop at cuttingtools.ceratizit.com

Application tips – eccentric sleeves

Users of rotating tools can now enjoy greater flexibility.
Using the eccentric sleeves, you can vary and adjust the diameter of the hole by +/- 0.3 mm with ease.

Two types of eccentric sleeve are available:
One for use with the new indexable insert drill adapter and one for use with the existing Weldon adapter.
The difference lies solely in the design and position of the slots for the adapter's clamping screws.
There are four sizes per type, which are tailored to the shank diameter.

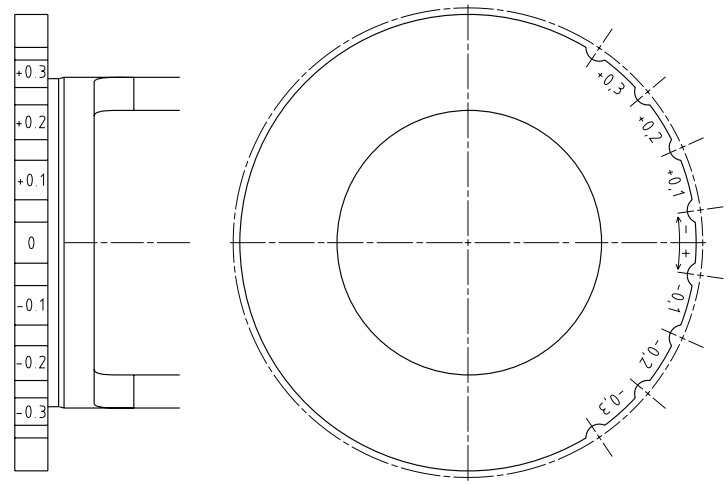


Eccentric sleeve for indexable insert drill adapter



Eccentric sleeve for Weldon adapter

A scale is engraved on every eccentric sleeve (radially and on the face),
so that the user can adjust the bore diameter according to requirements.



Side view *End view*

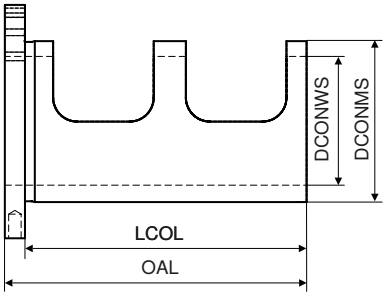
Instructions for use

1. Position the sleeve in the respective adapter and insert the indexable insert drill.
2. Set the sleeve to the zero position. → The „0“ must align with the clamping screws on the adapter.
3. Clamp the adapter's clamping screws.
4. Drill.
5. Measure the bore diameter.
6. Loosen the clamping screws.
7. Correct the bore diameter using the sleeve. → Observe the scale on the sleeve. The value must align with the clamping screws on the adapter.
8. Clamp the clamping screws.
9. Drill.

A scale is engraved on every eccentric sleeve (radially and on the face).

Owing to the radial adjustment of the drill axis, the feed rate should be reduced by approx. 30 % for longer drilling tools (4xD and 5xD).

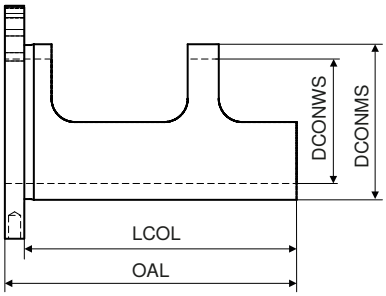
Eccentric sleeve – indexable insert drill adapter





Designation	DCONWS	DCONMS	OAL	LCOL	2A/28 Article no. 10 870 ...	
	mm	mm	mm	mm	EUR	
EHB.D20.D25	20	25	61	56	156,20	**120**
EHB.D25.D32	25	32	65	60	169,90	**125**
EHB.D32.D40	32	40	75	70	185,60	**132**
EHB.D40.D50	40	50	85	80	203,40	**140**

Eccentric sleeve – standard Weldon adapter



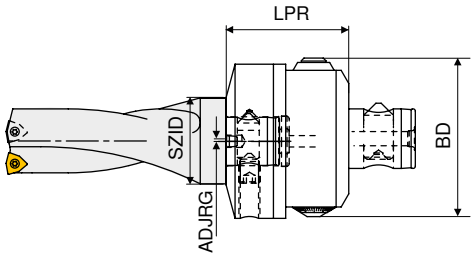


Designation	DCONWS	DCONMS	OAL	LCOL	2A/28 Article no. 10 871 ...	
	mm	mm	mm	mm	EUR	
EHW.D20.D25	20	25	61	56	156,20	**120**
EHW.D25.D32	25	32	65	60	169,90	**125**
EHW.D32.D40	32	40	75	70	185,60	**132**
EHW.D40.D50	40	50	85	80	203,40	**140**

Application tips for eccentric sleeves can be found on → **Page 36.**

Adjuster with ABS connection

- Precise adjustment using micrometric adjusting spindle
- Max. adjustment range 3 mm on diameter
- Graduation of scale 1 line 0.02 mm on diameter
- Stable clamping of the top section after adjustment using four clamping screws arranged on the face







AD

NEW W4

Adapter	KOMET no.	BD mm	LPR mm	ADJRG mm	SZID	Article no. 84 210 ... EUR	
ABS 50	M0100001	70	57	1,5	ABS 50	1.184,00	**05097**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values for KUB Pentron – 2xD, 3xD

Index	BK6115	BK8425	C, ABS and PSC											
			Ø 14–15,5 mm	Ø 16–17,5 mm	Ø 18–19,5 mm	Ø 20–21,5 mm	Ø 22–23,5 mm	Ø 24–25,5 mm	Ø 26–27,5 mm	Ø 28–30 mm	Ø 31–33 mm	Ø 34–37 mm	Ø 38–42 mm	Ø 43–46 mm
	v_c in m/min		f in mm/rev.											
1.1	250–350	200–320	0,04–0,1	0,04–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,1	0,04–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.4	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.5	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.6	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.7	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.8	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.9	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.10	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.11	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.12	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.13	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.14	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.15	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.16	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
2.1		150–210	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.2		150–210	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.3		150–210	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.4		120–200	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.5		110–190	0,06–0,11	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.6		120–200	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.7		110–190	0,06–0,11	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
3.1	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.2	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.3	120–200	140–220	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.4	100–180	120–180	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.5	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.6	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.7	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.8	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11														
4.12														
4.13														
4.14														
4.15														
4.16														
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1	50–90		0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06
6.2	30–50		0,01–0,03	0,01–0,03	0,01–0,03	0,01–0,03	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02
6.3														
6.4														
6.5														

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values for KUB Pentron – 4xD

Index	BK6115	BK8425	C and ABS											
			Ø 14–15,5 mm	Ø 16–17,5 mm	Ø 18–19,5 mm	Ø 20–21,5 mm	Ø 22–23,5 mm	Ø 24–25,5 mm	Ø 26–27,5 mm	Ø 28–30 mm	Ø 31–33 mm	Ø 34–37 mm	Ø 38–42 mm	Ø 43–46 mm
	v_c in m/min		f in mm/rev.											
1.1	250–350	200–320	0,04–0,08	0,04–0,12	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,08	0,04–0,12	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.4	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.5	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.6	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.7	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.8	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.9	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.10	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.11	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.12	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.13	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.14	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.15	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.16	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
2.1		150–210	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.2		150–210	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.3		150–210	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.4		120–200	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.5		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.6		120–200	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.7		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
3.1	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.2	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.3	120–200	140–220	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.4	100–180	120–180	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.5	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.6	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.7	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.8	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11														
4.12														
4.13														
4.14														
4.15														
4.16														
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1														
6.2														
6.3														
6.4														
6.5														

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

3

Cutting data standard values for KUB Pentron – 5xD

Index	BK6115	BK8425	C and ABS											
			Ø 14–15,5 mm	Ø 16–17,5 mm	Ø 18–19,5 mm	Ø 20–21,5 mm	Ø 22–23,5 mm	Ø 24–25,5 mm	Ø 26–27,5 mm	Ø 28–30 mm	Ø 31–33 mm	Ø 34–37 mm	Ø 38–42 mm	Ø 43–46 mm
	v_c in m/min		f in mm/rev.											
1.1	250–350	200–320	0,04–0,09	0,06–0,1	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
1.2	250–350	200–320	0,04–0,09	0,06–0,1	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
1.3	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.4	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.5	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.6	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.7	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.8	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.9	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.10	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.11	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.12	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.13	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.14	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.15	170–230	120–200	0,06–0,12	0,08–0,15	0,09–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,2	0,14–0,2	0,14–0,2	0,14–0,2
1.16	170–230	120–200	0,06–0,12	0,08–0,15	0,09–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,2	0,14–0,2	0,14–0,2	0,14–0,2
2.1		150–210	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.2		150–210	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.3		150–210	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.4		120–200	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,12–0,16	0,12–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.5		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,11	0,07–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14
2.6		120–200	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,12–0,16	0,12–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.7		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,11	0,07–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14
3.1	160–320	140–220	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.2	160–320	140–220	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.3	120–200	140–220	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.4	100–180	120–180	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.5	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.6	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.7	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.8	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11														
4.12														
4.13														
4.14														
4.15														
4.16														
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1														
6.2														
6.3														
6.4														
6.5														

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values for MaxiDrill 900 – 2xD

Index	DRAGONSKIN CTCP420 (DCX1420)	DRAGONSKIN CTPP430 (CCN1430)	C Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20,5 mm	Ø 21–23,5 mm	Ø 24–27,5 mm	Ø 28–32 mm	Ø 32,5–36,5 mm	Ø 37–41 mm	Ø 41,5–46 mm	Ø 46,5–63 mm
	v_c in m/min		f in mm/rev.									
1.1	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.2	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.3	**190–310**	**180–280**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.4	**190–310**	**180–280**	0,04–0,13	0,04–0,14	0,05–0,15	0,05–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,21	0,10–0,23	0,10–0,23
1.5	**190–310**	**180–280**	0,04–0,15	0,04–0,15	0,05–0,16	0,05–0,17	0,06–0,19	0,06–0,21	0,06–0,21	0,08–0,22	0,08–0,22	0,09–0,26
1.6	**170–290**	**160–250**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.7	**180–280**	**150–220**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.8	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,29
1.9	**170–280**	**130–200**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.10	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.11	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.12	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.13	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.14	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.15	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.16	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
2.1	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.2	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.3		**100–180**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.4		**80–140**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.5		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
2.6	140–230	**100–160**	0,04–0,11	0,04–0,12	0,05–0,14	0,05–0,15	0,06–0,15	0,06–0,16	0,06–0,17	0,10–0,22	0,10–0,22	0,10–0,22
2.7		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
3.1	**190–310**	120–200	0,07–0,20	0,07–0,22	0,08–0,24	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.2	**170–290**	100–180	0,07–0,19	0,07–0,20	0,08–0,22	0,10–0,24	0,1–0,26	0,1–0,26	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.3	**190–310**	120–200	0,07–0,20	0,07–0,20	0,08–0,22	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.4	**170–290**	100–180	0,07–0,18	0,07–0,18	0,08–0,20	0,10–0,23	0,1–0,25	0,1–0,25	0,1–0,25	0,10–0,27	0,10–0,27	0,10–0,29
3.5	**140–230**	80–160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.6	**130–210**	70–150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.7	**140–230**	80–160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.8	**130–210**	70–150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
4.1		150–500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.2		150–450	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.3		150–350	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.4		150–300	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.5												
4.6		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.7		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.8		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.9		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.10		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.11		150–300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.12		150–300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.13												
4.14		50–150	0,04–0,09	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12
4.15		50–140	0,06–0,14	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,18	0,10–0,18	0,10–0,18
4.16												
4.17												
4.18												
4.19												
5.1		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.2		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.3		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.4		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.5		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.6		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.7		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.8		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.9		40–100	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.10		40–80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
5.11		40–80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
6.1												
6.2												
6.3												
6.4												
6.5												

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values for MaxiDrill 900 + KUB 100 – 3xD

Index	DRAGONSKIN CTCP420 (DCX1420)	DRAGONSKIN CTPP430 (CCN1430)	C Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20,5 mm	Ø 21–23,5 mm	Ø 24–27,5 mm	Ø 28–32 mm	Ø 32,5–36,5 mm	Ø 37–41 mm	Ø 41,5–46 mm	Ø 46,5–63 mm
	v_c in m/min		f in mm/rev.									
1.1	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.2	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.3	**190–310**	**180–280**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.4	**190–310**	**180–280**	0,04–0,13	0,04–0,14	0,05–0,15	0,05–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,21	0,10–0,23	0,10–0,23
1.5	**190–310**	**180–280**	0,04–0,15	0,04–0,15	0,05–0,16	0,05–0,17	0,06–0,19	0,06–0,21	0,06–0,21	0,08–0,22	0,08–0,22	0,09–0,24
1.6	**170–290**	**160–250**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.7	**180–280**	**150–220**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.8	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,29
1.9	**170–280**	**130–200**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.10	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.11	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.12	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.13	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.14	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.15	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.16	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
2.1	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.2	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.3		**100–180**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.4		**80–140**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.5		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
2.6	140–230	**100–160**	0,04–0,11	0,04–0,12	0,05–0,14	0,05–0,15	0,06–0,15	0,06–0,16	0,06–0,17	0,10–0,22	0,10–0,22	0,10–0,22
2.7		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
3.1	**190–310**	120–200	0,07–0,20	0,07–0,22	0,08–0,24	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.2	**170–290**	100–180	0,07–0,19	0,07–0,20	0,08–0,22	0,10–0,24	0,1–0,26	0,1–0,26	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.3	**190–310**	120–200	0,07–0,20	0,07–0,20	0,08–0,22	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.4	**170–290**	100–180	0,07–0,18	0,07–0,18	0,08–0,20	0,10–0,23	0,1–0,25	0,1–0,25	0,1–0,25	0,10–0,27	0,10–0,27	0,10–0,29
3.5	**140–230**	80–160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.6	**130–210**	70–150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.7	**140–230**	80–160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.8	**130–210**	70–150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
4.1		150–500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.2		150–450	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.3		150–350	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.4		150–300	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.5												
4.6		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.7		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.8		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.9		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.10		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.11		150–300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.12		150–300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.13												
4.14		50–150	0,04–0,09	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12
4.15		50–140	0,06–0,14	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,18	0,10–0,18	0,10–0,18
4.16												
4.17												
4.18												
4.19												
5.1		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.2		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.3		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.4		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.5		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.6		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.7		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.8		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.9		40–100	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.10		40–80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
5.11		40–80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
6.1												
6.2												
6.3												
6.4												
6.5												

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data for MaxiDrill 900 indexable insert drill – 4xD

Index	DRAGONSKIN CTCP420 (DCX1420)	DRAGONSKIN CTPP430 (CCN1430)	C									
			Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20 mm	Ø 21–23 mm	Ø 24–27 mm	Ø 28–32 mm	Ø 33–36 mm	Ø 37–41 mm	Ø 41,5–46 mm	Ø 46,5–54 mm
	v_c in m/min		f in mm/rev.									
1.1	**240–390**	**200–300**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.2	**240–390**	**200–300**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.3	**190–310**	**180–280**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.4	**190–310**	**180–280**	0,04–0,11	0,04–0,12	0,05–0,12	0,05–0,13	0,06–0,15	0,06–0,17	0,06–0,17	0,06–0,17	0,06–0,17	0,07–0,17
1.5	**190–310**	**180–280**	0,04–0,13	0,04–0,14	0,05–0,14	0,05–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,06–0,20	0,06–0,20	0,07–0,22
1.6	**170–290**	**160–250**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.7	**180–280**	**150–220**	0,04–0,17	0,04–0,18	0,05–0,18	0,06–0,20	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,24	0,07–0,24	0,08–0,26
1.8	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.9	**170–280**	**130–200**	0,04–0,17	0,04–0,18	0,05–0,18	0,06–0,20	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,24	0,07–0,24	0,08–0,26
1.10	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.11	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.12	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.13	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.14	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,18	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.15	**120–200**	**100–160**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,18	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.16	**120–200**	**100–160**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,18	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
2.1	140–230	**100–180**	0,04–0,10	0,04–0,10	0,05–0,12	0,06–0,12	0,06–0,15	0,06–0,17	0,06–0,17	0,08–0,20	0,08–0,20	0,08–0,20
2.2	140–230	**100–180**	0,04–0,10	0,04–0,10	0,05–0,12	0,06–0,12	0,06–0,15	0,06–0,17	0,06–0,17	0,08–0,20	0,08–0,20	0,08–0,20
2.3		**100–180**	0,04–0,12	0,04–0,12	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,16	0,06–0,16	0,08–0,22	0,08–0,22	0,08–0,22
2.4		**80–140**	0,04–0,12	0,04–0,12	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,16	0,06–0,16	0,08–0,22	0,08–0,22	0,08–0,22
2.5		**80–140**	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,13	0,05–0,13	0,05–0,13	0,07–0,16	0,07–0,16	0,07–0,16
2.6	140–230	**100–160**	0,04–0,10	0,04–0,10	0,05–0,12	0,05–0,13	0,06–0,13	0,06–0,14	0,06–0,14	0,08–0,20	0,08–0,20	0,08–0,20
2.7		**80–140**	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,13	0,05–0,13	0,05–0,13	0,07–0,16	0,07–0,16	0,07–0,16
3.1	**190–310**	120-200	0,07–0,18	0,07–0,20	0,08–0,22	0,10–0,24	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.2	**170–290**	100-180	0,07–0,17	0,07–0,18	0,08–0,20	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,27	0,10–0,29	0,10–0,29	0,10–0,29
3.3	**190–310**	120-200	0,07–0,18	0,07–0,18	0,08–0,20	0,10–0,24	0,1–0,26	0,1–0,26	0,1–0,26	0,10–0,28	0,10–0,28	0,10–0,28
3.4	**170–290**	100-180	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,22	0,1–0,22	0,1–0,23	0,10–0,25	0,10–0,25	0,10–0,25
3.5	**140–230**	80-160	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.6	**130–210**	70-150	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.7	**140–230**	80-160	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.8	**130–210**	70-150	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
4.1		150-500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,17	0,10–0,17	0,10–0,17
4.2		150-450	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.3		150-350	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.4		150-300	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.5												
4.6		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.7		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.8		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.9		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.10		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.11		150-300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22
4.12		150-300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22
4.13												
4.14		50-150	0,04–0,09	0,04–0,10	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12
4.15		50-140	0,06–0,14	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,18	0,10–0,18	0,10–0,18
4.16												
4.17												
4.18												
4.19												
5.1		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.2		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.3		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.4		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.5		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.6		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.7		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.8		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.9		40-100	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.10		40-80	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,06–0,15	0,07–0,15	0,07–0,15	0,07–0,15	0,07–0,15
5.11		40-80	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,06–0,15	0,07–0,15	0,07–0,15	0,07–0,15	0,07–0,15
6.1												
6.2												
6.3												
6.4												
6.5												

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

3

Cutting data standard values for MaxiDrill 900 – 5xD

	DRAGONSKIN	DRAGONSKIN	C							
Index	CTCP420 (DCX1420)	CTPP430 (CCN1430)	Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20 mm	Ø 21–23 mm	Ø 24–27 mm	Ø 28–32 mm	Ø 33–36 mm	Ø 37–41 mm
	v_c in m/min		f in mm/rev.							
1.1	**240–390**	**200–300**	0,04–0,12	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.2	**240–390**	**200–300**	0,04–0,12	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.3	**190–310**	**180–280**	0,04–0,12	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.4	**190–310**	**180–280**	0,04–0,09	0,04–0,09	0,04–0,08	0,04–0,10	0,06–0,12	0,06–0,14	0,06–0,14	0,08–0,17
1.5	**190–310**	**180–280**	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,06–0,14	0,06–0,16	0,06–0,16	0,08–0,20
1.6	**170–290**	**160–250**	0,04–0,10	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.7	**180–280**	**150–220**	0,04–0,15	0,04–0,15	0,05–0,15	0,05–0,17	0,07–0,18	0,08–0,20	0,08–0,20	0,10–0,25
1.8	**170–280**	**130–200**	0,04–0,13	0,04–0,14	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.9	**170–280**	**130–200**	0,04–0,15	0,04–0,16	0,05–0,15	0,05–0,17	0,07–0,18	0,08–0,20	0,08–0,20	0,10–0,25
1.10	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.11	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.12	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.13	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.14	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.15	**120–200**	**100–160**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.16	**120–200**	**100–160**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
2.1	140–230	**100–180**	0,04–0,09	0,04–0,09	0,04–0,08	0,04–0,10	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,18
2.2	140–230	**100–180**	0,04–0,09	0,04–0,09	0,04–0,08	0,04–0,10	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,18
2.3		**100–180**	0,04–0,11	0,04–0,11	0,04–0,13	0,05–0,15	0,05–0,16	0,06–0,16	0,06–0,16	0,08–0,20
2.4		**80–140**	0,04–0,11	0,04–0,11	0,04–0,13	0,05–0,15	0,05–0,16	0,06–0,16	0,06–0,16	0,08–0,20
2.5		**80–140**	0,04–0,08	0,04–0,08	0,04–0,09	0,05–0,11	0,05–0,12	0,05–0,12	0,05–0,12	0,08–0,15
2.6	140–230	**100–160**	0,04–0,09	0,04–0,09	0,04–0,09	0,05–0,11	0,05–0,12	0,05–0,12	0,05–0,12	0,08–0,16
2.7		**80–140**	0,04–0,08	0,04–0,08	0,04–0,09	0,05–0,11	0,05–0,12	0,05–0,12	0,05–0,12	0,08–0,15
3.1	**190–310**	120–200	0,07–0,18	0,07–0,20	0,08–0,22	0,10–0,23	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25
3.2	**170–290**	100–180	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.3	**190–310**	120–200	0,07–0,18	0,07–0,18	0,08–0,18	0,10–0,23	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25
3.4	**170–290**	100–180	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.5	**140–230**	80–160	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.6	**130–210**	70–150	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.7	**140–230**	80–160	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.8	**130–210**	70–150	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
4.1		150–500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,17
4.2		150–450	0,06–0,12	0,07–0,14	0,08–0,14	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,19
4.3		150–350	0,06–0,12	0,07–0,14	0,08–0,14	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,19
4.4		150–300	0,06–0,12	0,07–0,14	0,08–0,14	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,19
4.5										
4.6		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.7		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.8		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.9		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.10		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.11		150–300	0,06–0,15	0,07–0,16	0,08–0,16	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,20
4.12		150–300	0,06–0,15	0,07–0,16	0,08–0,16	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,20
4.13										
4.14		50–150	0,04–0,09	0,04–0,10	0,04–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
4.15		50–140	0,06–0,14	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,15	0,10–0,15	0,10–0,15
4.16										
4.17										
4.18										
4.19										
5.1		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.2		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.3		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.4		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.5		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.6		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.7		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.8		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.9		40–100	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.10		40–80	0,04–0,08	0,04–0,08	0,04–0,08	0,05–0,11	0,05–0,11	0,06–0,12	0,07–0,12	0,07–0,12
5.11		40–80	0,04–0,08	0,04–0,08	0,04–0,08	0,05–0,11	0,05–0,11	0,06–0,12	0,07–0,12	0,07–0,12
6.1										
6.2										
6.3										
6.4										
6.5										

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values KUB Trigon – 2xD

Index	BK6115	BK8425	K and ABS Ø 14–16 mm	Ø 17–19 mm	Ø 20–24 mm	Ø 25–29 mm	Ø 30–36 mm	Ø 37–40 mm	Ø 41–44 mm
	v_c in m/min		f in mm/rev.						
1.1	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.4	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.5	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.6	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.7	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.8	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.9	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.10	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.11	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.12	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.13	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.14	70–110	50–90	0,03–0,05	0,03–0,06	0,04–0,08	0,06–0,1	0,07–0,1	0,08–0,12	0,08–0,12
1.15	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
1.16	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.1		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.2		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.3		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.4		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.5		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
2.6		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.7		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
3.1	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.2	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.3	120–200	140–220	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.4	100–180	120–180	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.5	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.6	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.7	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.8	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
4.1									
4.2									
4.3									
4.4									
4.5									
4.6									
4.7									
4.8									
4.9									
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1	50–90		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,08–0,12	0,08–0,12
6.2	30–50		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,1
6.3									
6.4									
6.5									

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values KUB Trigon – 3xD

Index	BK6115	BK8425	K and ABS Ø 14–16 mm	Ø 17–19 mm	Ø 20–24 mm	Ø 25–29 mm	Ø 30–36 mm	Ø 37–40 mm	Ø 41–44 mm
	v_c in m/min		f in mm/rev.						
1.1	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.4	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.5	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.6	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.7	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.8	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.9	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.10	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.11	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.12	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.13	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.14	70–110	50–90	0,03–0,05	0,03–0,06	0,04–0,08	0,06–0,1	0,07–0,1	0,08–0,12	0,08–0,12
1.15	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
1.16	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.1		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.2		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.3		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.4		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.5		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
2.6		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.7		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
3.1	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.2	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.3	120–200	140–220	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.4	100–180	120–180	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.5	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.6	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.7	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.8	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
4.1									
4.2									
4.3									
4.4									
4.5									
4.6									
4.7									
4.8									
4.9									
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1	50–90		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,08–0,12	0,08–0,12
6.2	30–50		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,1
6.3									
6.4									
6.5									

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values KUB Trigon – 4xD

Index	BK6115	BK8425	K				
			Ø 14–16 mm	Ø 17–19 mm	Ø 20–24 mm	Ø 25–29 mm	Ø 30–35 mm
	v_c in m/min		f in mm/rev.				
1.1	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1
1.2	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1
1.3	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.4	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.5	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.6	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.7	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.8	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.9	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.10	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.11	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.12	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.13	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.14	70–110	50–90	0,02–0,04	0,03–0,04	0,04–0,06	0,04–0,08	0,04–0,1
1.15	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1
1.16	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1
2.1		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12
2.2		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12
2.3		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12
2.4		120–200	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
2.5		110–190	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
2.6		120–200	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
2.7		110–190	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
3.1	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18
3.2	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18
3.3	120–200	140–220	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18
3.4	100–180	120–180	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18
3.5	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
3.6	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
3.7	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
3.8	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
4.1							
4.2							
4.3							
4.4							
4.5							
4.6							
4.7							
4.8							
4.9							
4.10							
4.11							
4.12							
4.13							
4.14							
4.15							
4.16							
4.17							
4.18							
4.19							
5.1							
5.2							
5.3							
5.4							
5.5							
5.6							
5.7							
5.8							
5.9							
5.10							
5.11							
6.1							
6.2							
6.3							
6.4							
6.5							

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

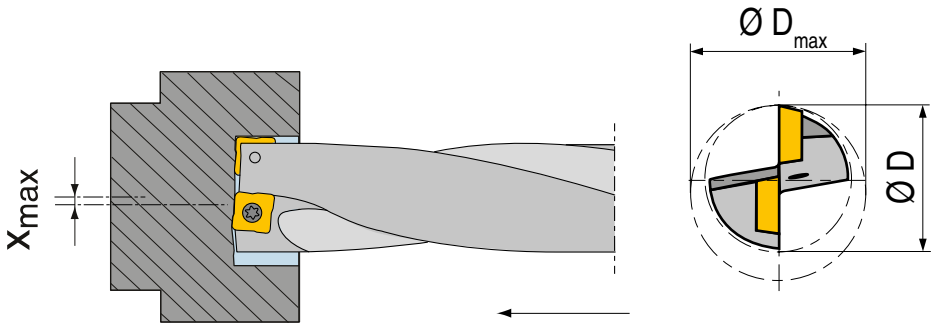
Cutting data standard values KUB Trigon – 4xD

Index	BK6115	BK8425	ABS Ø 14–16 mm	ABS Ø 17–19 mm	ABS Ø 20–24 mm	ABS Ø 25–29 mm	ABS Ø 30–36 mm	ABS Ø 37–40 mm	ABS Ø 41–44 mm
	v_c in m/min		f in mm/rev.						
1.1	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,1
1.2	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,1
1.3	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.4	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.5	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.6	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.7	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.8	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.9	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.10	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.11	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.12	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.13	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.14	70–110	50–90	0,02–0,04	0,03–0,04	0,04–0,06	0,04–0,08	0,04–0,1	0,05–0,12	0,05–0,12
1.15	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,12
1.16	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,12
2.1		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12
2.2		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12
2.3		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12
2.4		120–200	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,12
2.5		110–190	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,1
2.6		120–200	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,12
2.7		110–190	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,1
3.1	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.2	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.3	120–200	140–220	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.4	100–180	120–180	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.5	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
3.6	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
3.7	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
3.8	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
4.1									
4.2									
4.3									
4.4									
4.5									
4.6									
4.7									
4.8									
4.9									
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation,
coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Maximum adjustment range (X) during solid drilling / from the centre for stationary applications – KUB Pentron



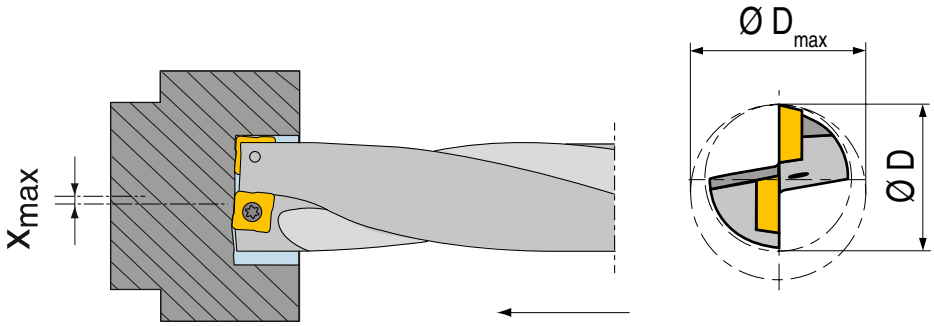
At max. offset X_{max} the hole will be:
$D_{max} = D + 2X_{max}$
e.g. for D = 20.0 mm, X_{max} = 0.20 mm:
$D_{max} = D + 0.4 = 20.4$ mm

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
14	SOGX 04....	0,25	14,5
14,5		0,25	15,0
15,0		0,25	15,5
15,5		0,25	16,0
16,0		0,25	16,5
16,5	SOGX 05....	0,25	17,0
17,0		0,25	17,5
17,5		0,25	18,0
18,0		0,25	18,5
18,5	SOGX 06....	0,25	19,0
19,0		0,25	19,5
19,5		0,25	20,0
20,0		0,25	20,5
20,5	SOGX 07....	0,25	21,0
21,0		0,25	21,5
21,5		0,25	22,0
22,0		0,25	22,5
22,5		0,25	23,0
23,0		0,25	23,5
23,5	SOGX 08....	0,25	24,0
24,0		0,25	24,5
24,5		0,25	25,0
25,0		0,25	25,5
25,5		0,25	26,0
26,0		0,25	26,5
26,5	SOGX 09....	0,25	27,0
27,0		0,25	27,5
27,5		0,25	28,0
28,0		0,25	28,5
28,5		0,25	29,0
29,0		0,25	29,5
29,5		0,25	30,0
30,0		0,25	30,5
31,0	SOGX 10....	0,25	31,5
32,0		0,25	32,5
33,0		0,25	33,5

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
34,0	SOGX 11....	0,25	34,5
35,0		0,25	35,5
36,0		0,25	36,5
37,0		0,25	37,5
38,0	SOGX 12....	0,25	38,5
39,0		0,25	39,5
40,0		0,25	40,5
41,0		0,25	41,5
42,0		0,25	42,5
43,0	SOGX 13....	0,25	43,5
44,0		0,25	44,5
45,0		0,25	45,5
46,0		0,25	46,5

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Maximum off set (X) for drilling into full material / with stationary applications – MaxiDrill 900 + KUB 100



At max. offset X_{max} the hole will be:
$D_{max} = D + 2X_{max}$
e.g. for D = 20.0 mm, X_{max} = 0.20 mm:
$D_{max} = D + 0.4 = 20.4$ mm

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
12,0	SONT 03....	0,50	13,0
12,5		0,40	13,3
13,0		0,35	13,7
13,5		0,30	14,1
14,0	SONT 04....	0,35	14,7
14,5		0,25	15,0
15,0		0,20	15,4
15,5		0,15	15,8
16,0	SONT 05....	0,40	16,8
16,5		0,35	17,2
17,0		0,30	17,6
17,5		0,25	18,0
18,0	SONT 06....	0,50	19,0
18,5		0,40	19,3
19,0		0,35	19,7
19,5		0,25	20,0
20,0		0,20	20,4
20,5		0,15	20,8
21,0	SONT 07....	0,35	21,7
21,5		0,30	22,1
22,0		0,25	22,5
22,5		0,15	22,8
23,0		0,15	23,3
23,5		0,10	23,7
24,0	SONT 08....	0,65	25,3
24,5		0,55	25,6
25,0		0,55	26,1
25,5		0,40	26,3
26,0		0,35	26,7
26,5		0,30	27,1
27,0		0,25	27,5
27,5		0,15	27,8
28,0	SONT 09....	0,90	29,8
28,5		0,80	30,1
29,0		0,75	30,5
29,5		0,70	30,9
30,0		0,60	31,2
30,5		0,55	31,6
31,0		0,45	31,9
31,5		0,40	32,3
32,0		0,30	32,6

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
32,5	SONT 10....	0,80	34,1
33,0		0,80	34,6
33,5		0,65	34,8
34,0		0,60	35,2
34,5		0,50	35,5
35,0		0,45	35,9
35,5		0,35	36,2
36,0		0,35	36,7
36,5		0,20	36,9
37,0	SONT 12....	1,00	39,0
38,0		0,85	39,7
39,0		0,70	40,4
40,0		0,50	41,0
41,0		0,35	41,7
42,0	SONT 13....	0,95	43,9
43,0		0,80	44,6
44,0		0,60	45,2
45,0		0,45	45,9
46,0		0,30	46,6
47,0	SONT 15....	1,80	50,6
48,0		1,65	51,3
49,0		1,50	52,0
50,0		1,35	52,7
51,0		1,15	53,3
52,0		0,95	53,9
53,0		0,80	54,6
54,0		0,60	55,2
55,0	SONT 17....	2,10	59,2
56,0		1,90	59,8
57,0		1,75	60,5
58,0		1,55	61,1
59,0		1,35	61,7
60,0		1,15	62,3
61,0		1,00	63,0
62,0		0,85	63,7
63,0		0,65	64,3

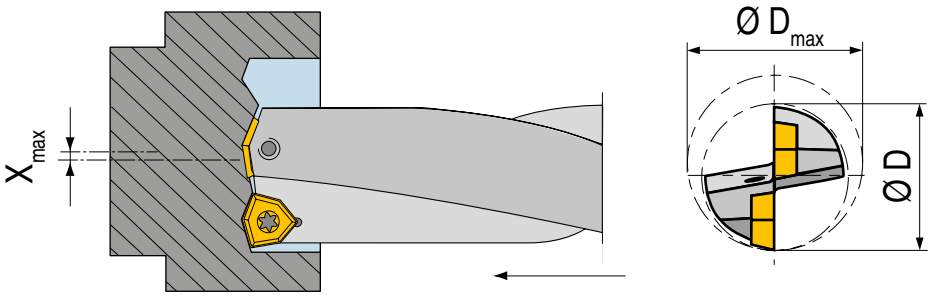
The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Technical data for turning – MaxiDrill 900

Insert Size	$a_{p\,max.}$ in mm	f in mm/rev.
SONT 03	0,40–1,50	0,08–0,22
SONT 04	0,40–1,80	0,09–0,27
SONT 05	0,60–2,40	0,10–0,30
SONT 06	0,60–2,80	0,11–0,34
SONT 07	0,60–3,40	0,13–0,38
SONT 08	0,70–4,20	0,15–0,41

Insert Size	$a_{p\,max.}$ in mm	f in mm/rev.
SONT 09	0,70–4,50	0,16–0,42
SONT 10	0,70–4,80	0,17–0,44
SONT 12	0,90–5,50	0,18–0,45
SONT 13	1,00–6,00	0,20–0,45
SONT 15	1,20–6,40	0,21–0,46
SONT 17	1,20–6,70	0,21–0,47

Maximum adjustment range (X) during solid drilling / from the centre for stationary applications – KUB Trigon



At max. offset X_{max} the hole will be:
$D_{max} = D + 2X_{max}$
e.g. for D = 20.0 mm, X_{max} = 0.20 mm:
$D_{max} = D + 0.4 = 20.4$ mm

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
14,0	WOEX 03....	0,5	15,0
15,0		0,5	16,0
16,0		0,5	17,0
17,0		0,5	18,0
18,0		0,5	19,0
19,0		0,5	20,0
20,0	WOEX 04....	0,5	21,0
21,0		0,5	22,0
22,0		0,5	23,0
23,0		0,5	24,0
24,0		0,5	25,0
25,0	WOEX 05....	0,5	26,0
26,0		1,0	28,0
27,0		1,5	30,0
28,0		1,5	31,0
29,0		1,5	32,0
30,0		1,25	32,5
31,0		1,25	33,5
32,0		1,0	34,0
33,0		0,5	34,0
34,0		0,5	35,0
35,0		0,5	36,0
36,0		0,5	37,0

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
37	WOEX 06....	1,5	40,0
38		1,5	41,0
39		1,5	42,0
40		1,5	43,0
41		1,5	44,0
42		1,5	45,0
43		1,0	45,0
44		0,5	45,0

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Coding example indexable insert drilling

System	Length	Bore diameter	Direction of rotation	Insert size	Machine connection and size
MD-900	4D	240	R	08	C 32
KUB-T	2D	350	R	05	K 32
KUB-P	3D	215	R	07	ABS 50
KUB-P	3D	290	R	04	PSC 63
KUB-100	3D	300	R	07	C 25

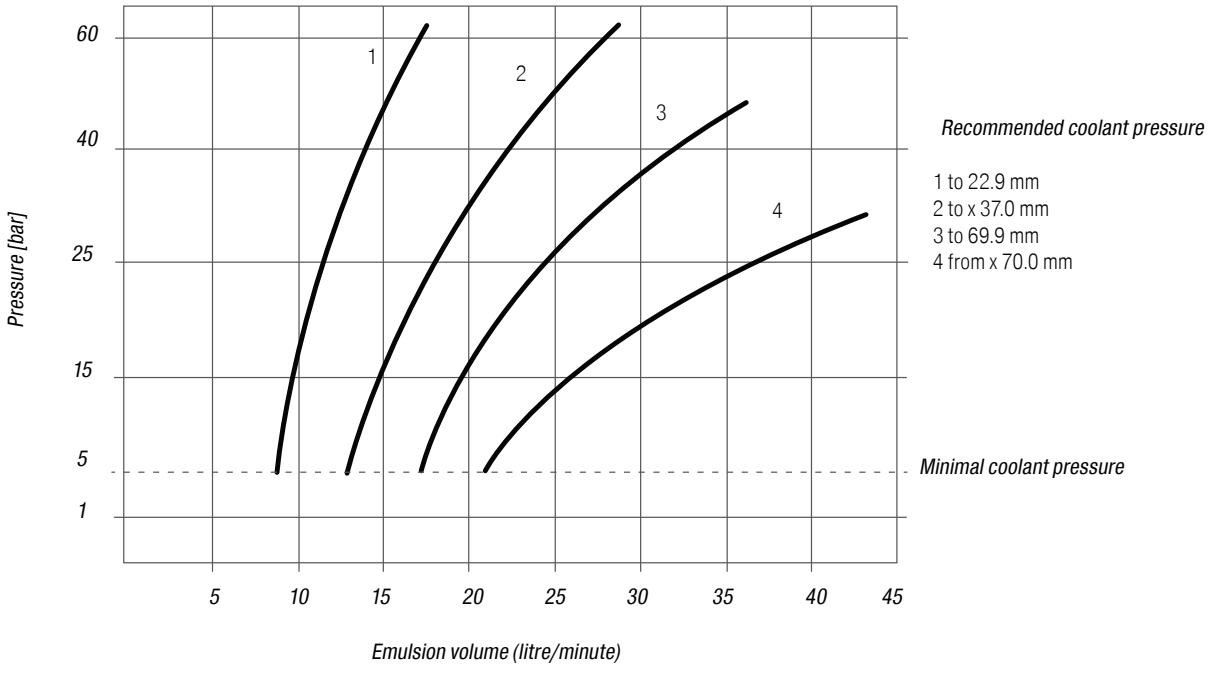
- MD-900 = MaxiDrill 900
- KUB-P = KUB Pentron
- KUB-T = KUB Trigon
- KUB-100 = KUB 100

- 240 = 24.0 mm
- 350 = 35.0 mm
- 215 = 21.5 mm
- 290 = 29,0 mm
- 300 = 30,0 mm

- R = right

- C32 = Cylindrical shank Ø 32.0 mm
- K32 = Cylindrical shank with combi clamping flat Ø 32.0 mm
- ABS50 = ABS adapter size 50
- PSC63 = PSC adapter shank size 63
- C25 = Cylindrical Shank Ø 25.0 mm

Recommended coolant pressure and coolant flow



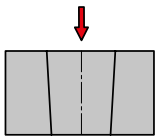
Problems / possible causes / solutions

Rotating and stationary application



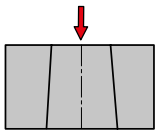
Short service life / types of wear of indexable inserts

- Cutting speed too high → select the correct cutting speed
- Insert grade selection has too little wear resistance → select a wear resistant grade
- Tool overhang too large → if possible, use a shorter tool
- Damaged insert seat → check tool, replace if necessary
- Clamping device stability too low → increase stability



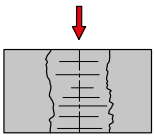
Hole tapers in

- Chip jam on the outer cutting edge → use a different chip breakage geometry, increase the feed if necessary
- Material very soft → increase the cutting speed, reduce the feed
- Use a positive cutting edge geometry



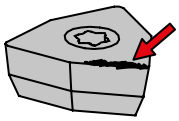
Hole tapers out

- Chip jam on the inner cutting edge → use a different chip breakage geometry, increase the feed if necessary



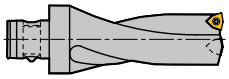
Poor surface quality

- Poor chip evacuation → optimise the cutting parameters: Increase the cutting speed, reduce the feed



Built-up edge

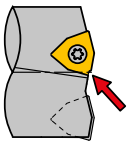
- Cutting speed too low → increase cutting speed
- Indexable insert too negative → use positive geometry
- Unsuitable coating → select the correct coating



Friction marks on the tool shank

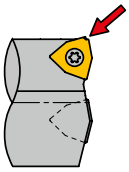
- Bore diameter too small → check the setting
- Chip evacuation problems → optimise the cutting parameters, check the geometry of the indexable insert
- Cutting radius too high → use the correct cutting radius

Stationary application



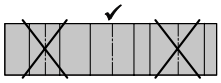
Edge breakage on the inner cutting edge

- Centre height of the tool too high/too low → adjust tool turret/adapter if necessary → Recalibrate the machine
- Indexable insert grades interchanged → use correct indexable insert
- Feed too high → reduce feed
- Indexable insert grade too brittle → use a tougher indexable insert grade
- Incorrect indexable insert geometry → if necessary use a geometry with a chamfered cutting edge



Edge breakage on the outer cutting edge

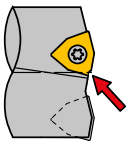
- Feed too high → reduce feed
- Interrupted cut → switch to a tougher grade of indexable insert
- Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large

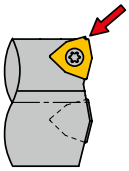
- Machine is not in the X-0 position → move axis to correct position
- Machine axis has been moved → recalibrate the machine

Rotating application



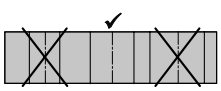
Edge breakage on the inner cutting edge

- Indexable insert grades interchanged → use correct indexable insert
- Feed too high → reduce feed
- Indexable insert grade too brittle → use a tougher indexable insert grade
- Incorrect indexable insert geometry → if necessary use a geometry with a chamfered cutting edge



Edge breakage on the outer cutting edge

- Feed too high → reduce feed
- Interrupted cut → switch to a tougher grade of indexable insert
- Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large when using adjustable tools

- Incorrect cutting radius used → use the correct cutting radius
- Incorrect setting → use the correct tool setting
- Increase cutting fluid supply

Grades Overview

CTPP430
CCN1430

- Carbide, TiAlN-coated
- ISO | **P30** | **M25** | S25 | K30 | N25
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

BK8425

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25**
- Universally applicable grade with increased wear resistance thanks to the innovative PVD coating in a multilayer design

CTCP420
DCX1420

- Carbide, TiCN-Al_2O_3-coated
- ISO | **P20** | **K20** | M20
- The wear-resistant solution for steel and cast iron materials at high cutting speeds

BK6115

- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | **P20** | **K20** | H20
- High-quality, surface-treated coating for machining cast iron materials under normal to stable conditions and high cutting speeds

BK7710

- Carbide, TiB_2-coated
- ISO | **N10** | S10
- The wear-resistant grade with optimum cutting characteristics to prevent built-up edge formation for machining aluminium and titanium alloys

BK7935

- Carbide, AlTiN-coated
- ISO | **P35** | **M30** | S30 | K30| N30
- The tough carbide grade for machining stainless steel and acid-resistant steels as well as special alloys

BK6425

- Carbide, TiCN-Al_2O_3-TiN-coated
- ISO | **P25 | M15**| K20
- The extremely wear-resistant grade for machining all steel and stainless materials

BK77

- Carbide, TiN-coated
- ISO | **S10** | **N10**
- The wear-resistant carbide grade for machining aluminum alloys, superalloys and plastics at medium cutting speeds

BK62

- Carbide, TiN-TiCN-Al_2O_3-coated
- ISO | **K15** | H15
- Special carbide grade for machining cast iron materials at high cutting speeds
  Not suitable for machining aluminium materials

Chip breakers

-01

- Universal geometry suitable for a wide range of materials
- Can be used for the center and peripheral insert

-03

- Geometry for chip breaking problems with excellent chip control at low feed rates
- Can only be used for the peripheral insert
- Main application in low alloyed and stainless steels

-11

- Highly positive, minimally rounded chip breaker
- For soft cutting use
- Main application in aluminum

-13

- Very positive geometry for low alloy, stainless and acid-resistant steels
- Can be used for the center and peripheral insert
- Due to the low cutting forces well suited to unstable conditions

Application

Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	Hardened materials H
BK6115	HC-P20		●					
	HC-K20				●			
	HC-H20							○
BK8425	HC-P25		●					
	HC-M25			●				
	HC-K25				●			
BK7935	HC-P35		●					
	HC-M30			●				
	HC-S30						○	
	HC-K30				○			
	HC-N30					○		
BK7710	HC-N10					●		
	HC-S10						○	
BK6425	HC-P25		●					
	HC-M15			●				
	HC-K20				○			
CTCP420 DRAGONSKIN (DCX1420)	HC-P20		●					
	HC-K20				●			
	HC-M20			○				
CTPP430 DRAGONSKIN (CCN1430)	HC-P30		●					
	HC-M25			●				
	HC-S25						○	
	HC-N25					○		
	HC-K30				○			
BK62	HC-K15				●			
	HC-H15							○
BK77	HC-N10					●		
	HC-S10						●	

ISO application range: 01 05 10 15 20 25 30 35 40 45 50

● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c– tough

New products for machining technicians

NEW REAMAX TS



- maximum flexibility and efficiency up to Ø 65.00 mm
- up to 5xD
- can be adjusted for the smallest tolerances and for wear compensation

---

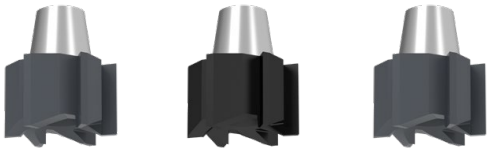
NEW Fullmax high-performance reamers



- solid carbide high-performance reamers
- type UNI, VA, K, ALU and H
- maximum efficiency in all materials
- available as standard H7, as 1/100, and as configurable version

---

NEW REAMAX extension

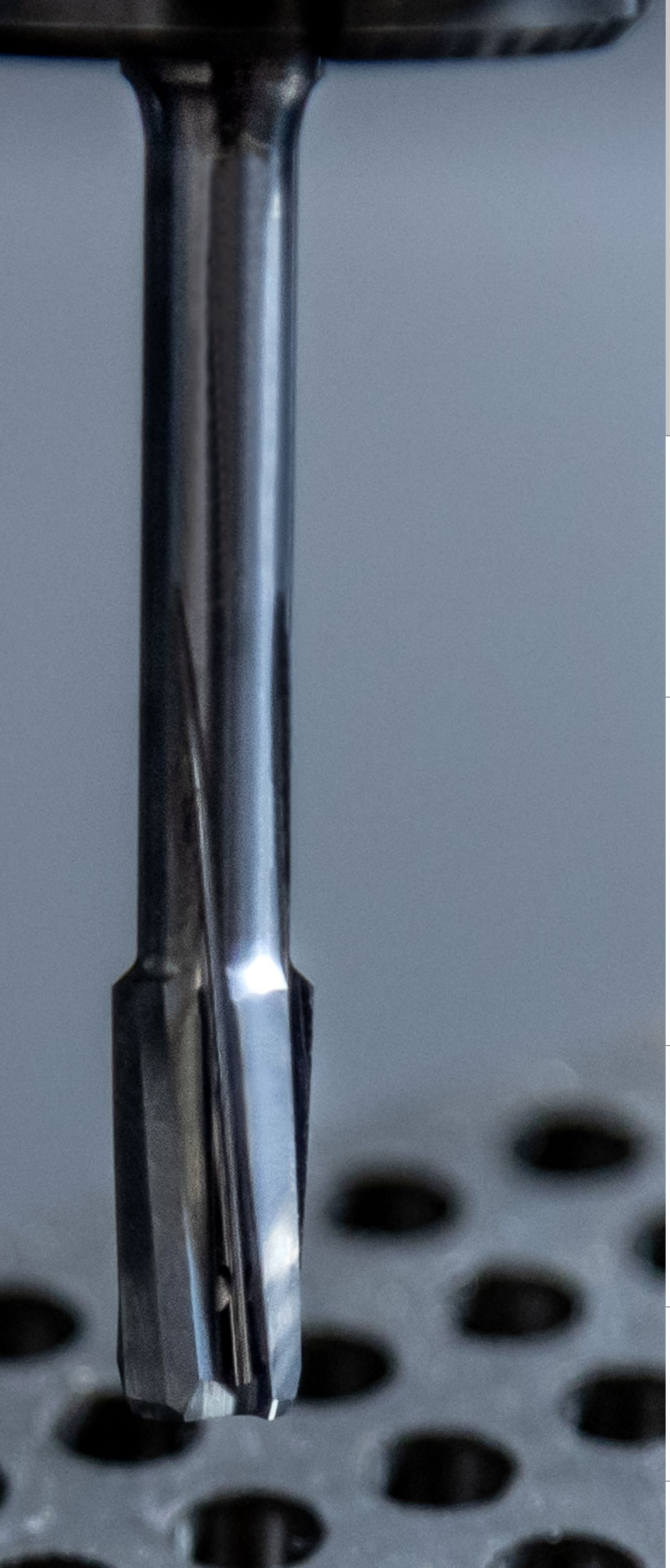


- extension of the proven REAMAX reaming system
- new cutting edge geometries and coatings

NEW Monomax extension



- extension of the proven Monomax reamers
- new grades and cutting edge geometries



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking 4
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Reamers overview	3
Reamers Toolfinder	4+5
Contents overview – Countersinks	6
Product range – Reamers	
Solid carbide – High speed reamers	7–28
Solid carbide – Reamers	29–31
HSS – Reamers	32–39
Product range – Countersinks	40–49
Technical Information	
Cutting Data	50–70
REAMAX TS assembly and operating instructions	71+72
Problems / possible causes / solutions	73
Types of wear	74
Tolerance classes covered with 1/100 reamer	75
Coatings and grades	76

KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

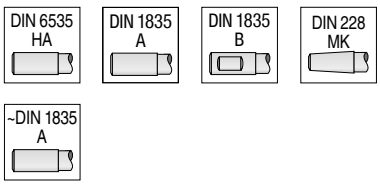
KOMET \ Standard

Quality tools for standard applications.

The quality tools of the **KOMET Standard** product line are high quality, high performance, reliable and enjoy the highest level of trust among our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank





Version



Central internal coolant



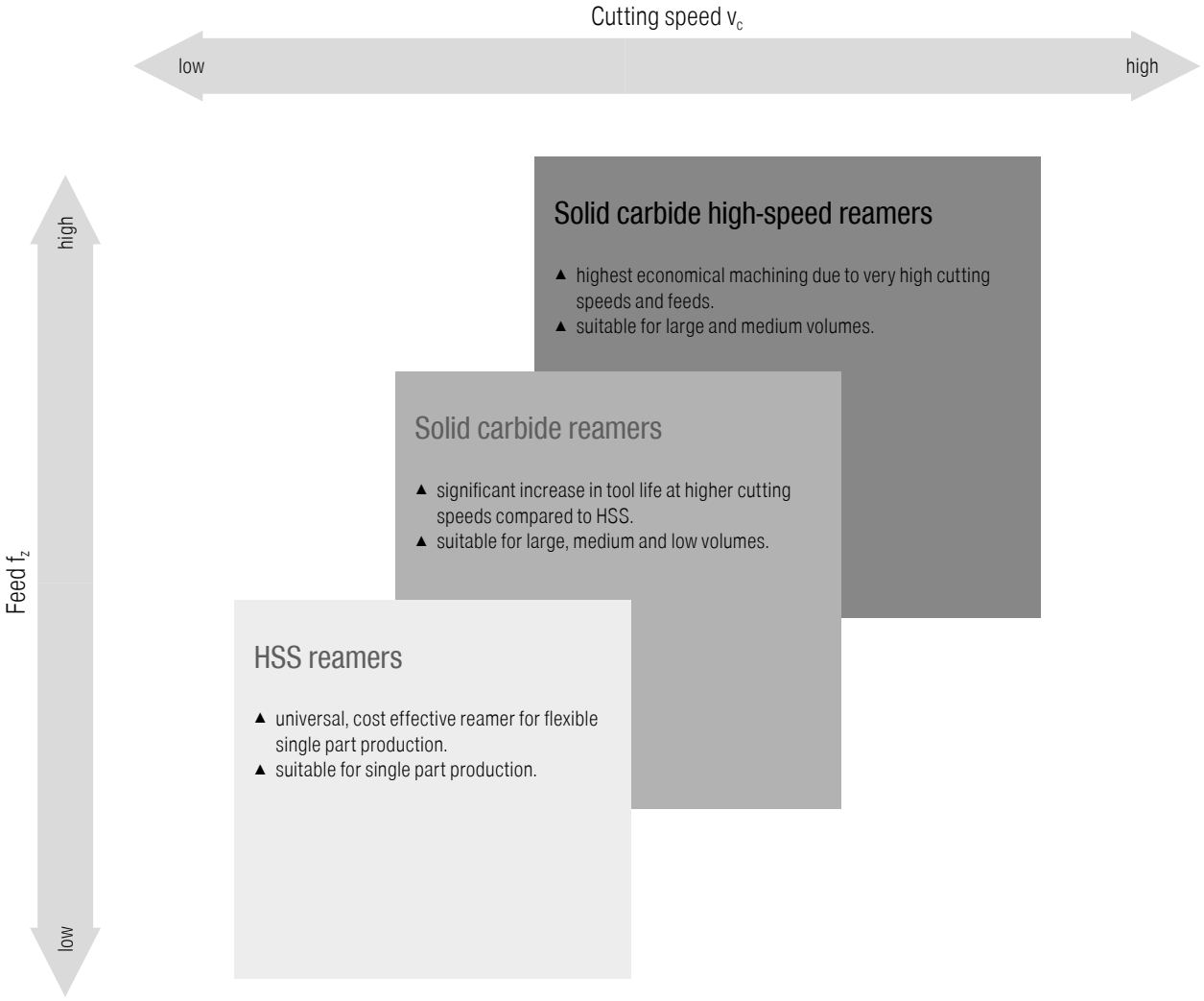
Lateral internal coolant

ZEFP = Number of teeth

● = **Main Application**

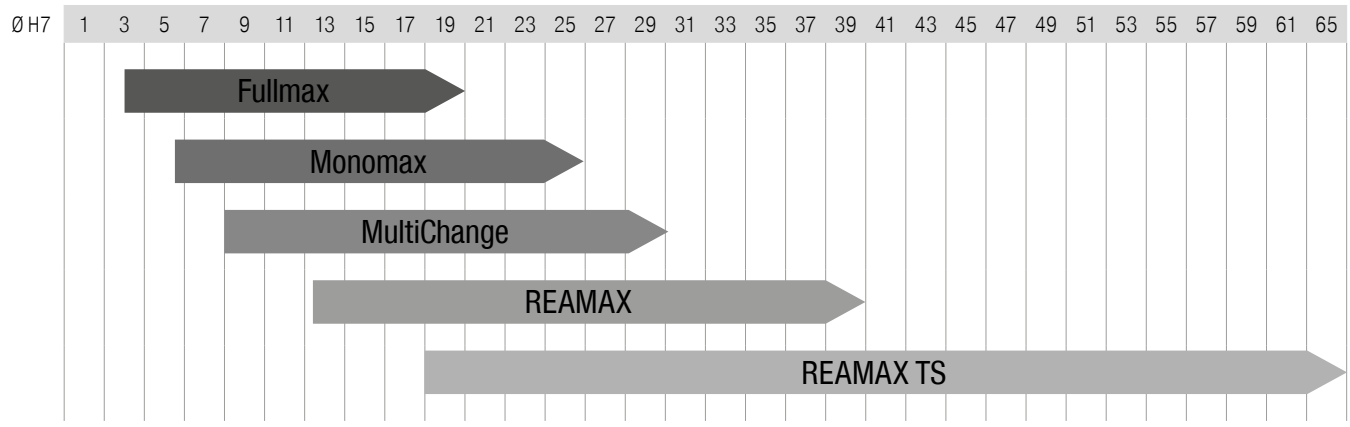
○ = Extended application

Toolfinder – Reamers



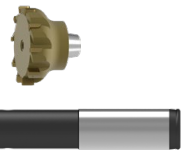
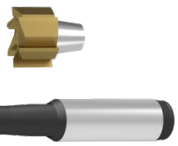
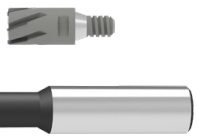
4

Overview of solid carbide high-speed reamers



	mono	modular
fixed	Fullmax	MultiChange REAMAX
adjustable	Monomax	REAMAX TS

Toolfinder – Reamers

Solid carbide – High speed reamers	REAMAX TS			▲ highly flexible and economical replaceable head system ▲ all common materials ▲ can be adjusted in µm range
				▲ holder available in 3xD and 5xD ▲ holder type DAH Zero available in 3xD and 5xD
	REAMAX			▲ exchange head system, optimised for use with air mist coolant (MMS) ▲ face and taper contact giving run out accuracy ≤ 2 µm
				▲ holder available in 3xD and 5xD
	MultiChange			▲ flexible quick change system for reaming, countersinking and chamfering ▲ face and taper contact giving run out accuracy ≤ 5 µm
				▲ stable holder in solid carbide and steel, from short to long
	Monomax			▲ adjustable monoblock reamer in 3xD and 5xD ▲ regrinding and re-tipping on the base body
	Fullmax UNI			▲ high-speed reamer for universal use ▲ extremely irregular pitch ▲ standard shank ~ DIN 6535 HA
	Fullmax VA			▲ high speed reamer for corrosion and acid resistant steels ▲ extremely irregular pitch ▲ DIN 6535 HA shank
	Fullmax K			▲ high-speed reamer for use on cast iron materials ▲ extremely irregular pitch ▲ standard shank ~ DIN 6535 HA
	Fullmax ALU			▲ high-speed reamer for use on aluminium ▲ extremely irregular pitch ▲ standard shank ~ DIN 6535 HA
	Fullmax H			▲ high speed reamer for hardened material to 63 HRC ▲ extremely irregular pitch ▲ DIN 6535 HA shank
Solid carbide – Reamers	NC	NC 100		▲ universal solid carbide reamer without thro' coolant ▲ extremely irregular pitch ▲ DIN 6535 HA shank
	N			▲ universal solid carbide reamer without thro' coolant ▲ extremely irregular pitch
HSS – Reamers	NC	NC 100		▲ HSS-E NC machine reamer ▲ DIN 1835 A shank
	N	N 100		▲ HSS-E machine reamer
	S			▲ HSS-E spiral machine reamer DIN 212
	AR	AR 100		▲ HSS-E automatic machine reamer DIN 8089
	N			▲ HSS-e machine reamer DIN 208 ▲ with morse taper
	H			▲ HSS hand reamer with cylindrical shank DIN 206

4

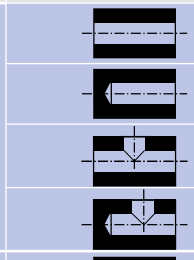
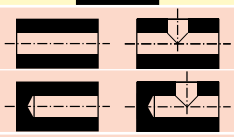
Hole diameter in mm Ø DC	Standard tolerance	Through hole	Blind hole	Int. coolant supply	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials	KOMET \ Performance	KOMET \ Standard
18,00–65,00	H7 1/100	✓	✓	✓	●	●	●	●			7–9	
				✓							10+11	
12,50–40,00	H7 1/100	✓	✓	✓	●	●	●	●			12+13	
				✓							14	
8,00–30,20	H7 1/100	✓	✓	✓	●	●	●	●	○		16+17	
				✓							→ Chapter 17, Accessories	
5,60–25,89	H7 1/100	✓	✓	✓	●	●	●				18–22	
4,00–16,00 2,96–20,05	H7 1/100	✓	✓	✓	●		●				23–28	
4,00–16,00 2,96–20,05	H7 1/100	✓	✓	✓		●					23–28	
2,96–20,05	1/100	✓	✓	✓			●				25–28	
4,00–16,00 2,96–20,05	H7 1/100	✓	✓	✓				●			23–28	
2,96–20,05	1/100	✓	✓	✓						●	25–28	
2,00–30,00 0,59–12,05	H7 1/100	✓			●		●	●	○		29+30	
2,00–12,00	H7	✓			●		●	●	○			31
1,50–20,00 0,95–12,00	H7 1/100	✓			●	○	●	●	○		32+33	
1,00–20,00 0,95–12,00	H7 1/100	✓			●	○	●	●	○			34–36
1,00–20,00	H7	✓			●			●				37
4,00–20,00 3,76–12,00	H7 1/100	✓			●	○	●	●	○			37+38
16,00–50,00	H7	✓			●	○	●	●	○			39
1,00–40,00	H7	✓			●	○	●	●	○			39

Countersinks Overview

	Tool type	Coating	Hole diameter in mm Ø DC	Point angle	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials	KOMET \ Performance	KOMET \ Standard
Indexable Insert Counterbore Tool												
	WPS		15,0–33,0		●	○	●	●	○			40
HSS – Counterbores												
	N		6,0–20,0		●	●	●	●	○			42
Solid Carbide Countersinks												
	N	TPX76S	6,3–31,0	90°	●	○	●	●	○	○	43	
	N		12,5–25,0	60°	●	○	●	●	○			44
	N		10,4–31,0	90°	●	○	●	●	○			44
HSS Countersinks												
	N		6,3–25,0	60°	●	○	●	●	○			47
	N		16,0–80,0	60°	●	○	●	●	○			47
	N	Ti50	4,3–31,0	90°	●	○	●	●	○		45	
	N		4,3–31,0	90°	●	○	●	●	○			46
	N	TiN	5,0–31,0	90°	●	○	●	●	○			46
	N	TiAlN	5,0–31,0	90°	●	○	●	●	○			46
	VA	TiAlN	6,3–31,0	90°		●						46
	AL		6,3–31,0	90°				●				46
	N		16,5–80,0	90°	●	○	●	●	○			48
	N		6,3–25,0	120°	●	○	●	●	○			48
HSS – Hand deburrer												
	N		12,4–25,0	90°								49
Deburring Countersink												
	N		6,3–35,0	90°	●		●	●				49
	N	TiN	6,3–35,0	90°	●		●	●				49

REAMAX TS – Selection guide

Ø 18–65 mm

	KOMET no.	75J.93	75J.65	75H.65	75J.17	75H.17	75H.93	75H.65	75H.71	75J.93
	Lead	ASG4000	ASG0106	ASG0106	ASG0706	ASG0706	ASG3000	ASG3000	ASG3000	ASG3000
	Lead angle	25°	45°	45°	45°/8°	45°/8°	45°	45°	45°	45°
	Grade / coating	DST	DBG-P	DBG-P	DBC	DBC	DST	DBG-P	TiN	DST
	Article no.	40 597 ...	40 521 ...	40 571 ...	40 526 ...	40 580 ...	40 539 ...	40 585 ...	40 535 ...	40 544 ...
	Application	Through hole	Through hole	Blind hole	Through hole	Blind hole	Blind hole	Blind hole	Blind hole	Through hole
Material	Preferred type available	✓	✓	✓			✓			✓
Steel up to 1000 N/mm²		●								●
							●	○	○	
								○	○	
								●	○	
Steel > 1000 N/mm²			●							
				●					○	
			●							
				●					○	
Stainless steel			●							
				●						
			●							
				●						
Grey cast iron / alloyed nodular cast iron (0.7661) and vermicular cast iron (5.2200)								○		
								●		
Nodular cast iron		○								●
							●	○		
								○		
								●		
Copper, brass, bronze										●
									○	
									○	
									●	
Aluminium					●					
						●				
					●					
						●				

Applications:

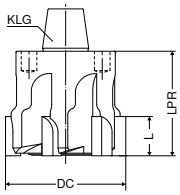
Main application	●
Additional range of application	○

4

REAMAX TS – Replaceable reaming heads

- up to tolerance class IT 6 with absolute process security, from the first hole
- precise repeatability < 3 µm
- high precision grind for maximum quality
- can be adjusted for the smallest hole tolerances
- interface enables head change in the machine
- retraction from the hole at 3–4 times the cutting feed rate
- KLG = coupling size





	DST	DBG-P	DBC	DST
				
	75J.93 ◁ 25° ASG4000 CERMET Through hole	75J.65 ◁ 45° ASG0106 HM Through hole	75J.17 ◁ 45/8° ASG0706 HM Through hole	75J.93 ◁ 45° ASG3000 CERMET Through hole
	NEW U3	NEW U3	NEW U3	NEW U3
DC_{H7} mm	L mm	LPR mm	ZEFP	KLG	Article no. 40 597 ... EUR	Article no. 40 521 ... EUR	Article no. 40 526 ... EUR	Article no. 40 544 ... EUR
18,00	6	20	6	1	326,60 18000	326,60 18000	326,60 18000	326,60 18000
18,01 - 19,99	6	20	6	1	384,80 xxxx 1)	384,80 xxxx 1)	384,80 xxxx 2)	384,80 xxxx 1)
20,00	6	20	6	2	334,90 20000	334,90 20000	334,90 20000	334,90 20000
20,01 - 21,99	6	20	6	2	451,20 xxxx 1)	451,20 xxxx 1)	451,20 xxxx 2)	451,20 xxxx 1)
22,00	6	20	6	3	341,10 22000	341,10 22000	341,10 22000	341,10 22000
22,01 - 23,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)
24,00	6	20	6	3	351,50 24000	351,50 24000	351,50 24000	351,50 24000
24,01 - 24,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)
25,00	6	20	6	3	351,50 25000	351,50 25000	351,50 25000	351,50 25000
25,01 - 25,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)
26,00	6	20	6	3	365,00 26000	365,00 26000	469,40 26000 2)	365,00 26000
26,01 - 26,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)
27,00 - 27,99	6	25	6	4	488,80 xxxx 1)	488,80 xxxx 1)	488,80 xxxx 2)	488,80 xxxx 1)
28,00	6	25	6	4	365,00 28000	365,00 28000	365,00 28000	365,00 28000
28,01 - 29,99	6	25	6	4	488,80 xxxx 1)	488,80 xxxx 1)	488,80 xxxx 2)	488,80 xxxx 1)
30,00	6	25	6	4	381,70 30000	381,70 30000	381,70 30000	381,70 30000
30,01 - 31,79	6	25	6	4	488,80 xxxx 1)	488,80 xxxx 1)	488,80 xxxx 2)	488,80 xxxx 1)
31,80 - 31,99	6	25	8	4	511,00 xxxx 1)	511,00 xxxx 1)	511,00 xxxx 2)	511,00 xxxx 1)
32,00	6	25	8	4	395,20 32000	395,20 32000	395,20 32000	395,20 32000
32,01 - 34,99	6	25	8	4	511,00 xxxx 1)	511,00 xxxx 1)	511,00 xxxx 2)	511,00 xxxx 1)
35,00	6	25	8	5	413,90 35000	413,90 35000	413,90 35000	413,90 35000
35,01 - 39,99	6	25	8	5	559,00 xxxx 1)	559,00 xxxx 1)	559,00 xxxx 2)	559,00 xxxx 1)
40,00	6	25	8	5	437,80 40000	437,80 40000	437,80 40000	437,80 40000
40,01 - 41,99	6	25	8	5	559,00 xxxx 1)	559,00 xxxx 1)	559,00 xxxx 2)	559,00 xxxx 1)
42,00	6	30	8	6	437,80 42000	437,80 42000	607,20 42000 2)	437,80 42000
42,01 - 49,99	6	30	8	6	607,20 xxxx 1)	607,20 xxxx 1)	607,20 xxxx 2)	607,20 xxxx 1)
50,00	6	30	8	6	448,20 50000	448,20 50000	448,20 50000	448,20 50000
50,01 - 51,99	6	30	8	6	607,20 xxxx 1)	607,20 xxxx 1)	607,20 xxxx 2)	607,20 xxxx 1)
52,00 - 53,99	8	35	10	7	673,40 xxxx 1)	673,40 xxxx 1)	673,40 xxxx 2)	673,40 xxxx 1)
54,00	8	35	10	7	504,40 54000	504,40 54000	673,40 54000 2)	504,40 54000
54,01 - 65,00	8	35	10	7	673,40 xxxx 1)	673,40 xxxx 1)	673,40 xxxx 2)	673,40 xxxx 1)
Steel					●	●		●
Stainless steel						●		
Cast iron					●			●
Non ferrous metals							●	○
Heat resistant alloys								
Hardened materials								

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

→ v_c Page 51–53

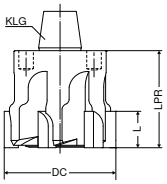
For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 24,12 H7 → Article no. 40 597 2412)!
All other diameters and tolerance classes are also possible (eg 18,5 $^{+0.025}$ or 18 N7)!

Assembly instructions can be found on → **Page 71**

REAMAX TS – Replaceable reaming heads

- ▲ up to tolerance class IT 6 with absolute process security, from the first hole
- ▲ precise repeatability < 3 µm
- ▲ high precision grind for maximum quality
- ▲ can be adjusted for the smallest hole tolerances
- ▲ interface enables head change in the machine
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ KLG = coupling size





	DST	DBG-P	DBC	DBG-P	TiN
					
	75H.93 ◁ 45° ASG3000 CERMET Blind hole	75H.65 ◁ 45° ASG0106 HM Blind hole	75H.17 ◁ 45/8° ASG0706 HM Blind hole	75H.65 ◁ 45° ASG3000 HM Blind hole	75H.71 ◁ 45° ASG3000 HM Blind hole
	NEW U3	NEW U3	NEW U3	NEW U3	NEW U3
DC_{H7} mm	L mm	LPR mm	ZEFP	KLG	Article no. 40 539 ... EUR	Article no. 40 571 ... EUR	Article no. 40 580 ... EUR	Article no. 40 585 ... EUR	Article no. 40 535 ... EUR
18,00	6	20	6	1	326,60 18000	326,60 18000	384,80 18000 2)	384,80 18000 1)	384,80 18000 1)
18,01 - 19,99	6	20	6	1	384,80 xxxx 1)	384,80 xxxx 1)	384,80 xxxx 2)	384,80 xxxx 1)	384,80 xxxx 1)
20,00	6	20	6	2	334,90 20000	334,90 20000	451,20 20000 2)	451,20 20000 1)	451,20 20000 1)
20,01 - 21,99	6	20	6	2	451,20 xxxx 1)	451,20 xxxx 1)	451,20 xxxx 2)	451,20 xxxx 1)	451,20 xxxx 1)
22,00	6	20	6	3	341,10 22000	341,10 22000	469,40 22000 2)	469,40 22000 1)	469,40 22000 1)
22,01 - 23,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)	469,40 xxxx 1)
24,00	6	20	6	3	351,50 24000	351,50 24000	469,40 24000 2)	469,40 24000 1)	469,40 24000 1)
24,01 - 24,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)	469,40 xxxx 1)
25,00	6	20	6	3	351,50 25000	351,50 25000	469,40 25000 2)	469,40 25000 1)	469,40 25000 1)
25,01 - 25,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)	469,40 xxxx 1)
26,00	6	20	6	3	365,00 26000	365,00 26000	469,40 26000 2)	469,40 26000 1)	469,40 26000 1)
26,01 - 26,99	6	20	6	3	469,40 xxxx 1)	469,40 xxxx 1)	469,40 xxxx 2)	469,40 xxxx 1)	469,40 xxxx 1)
27,00 - 27,99	6	25	6	4	488,80 xxxx 1)	488,80 xxxx 1)	488,80 xxxx 2)	488,80 xxxx 1)	488,80 xxxx 1)
28,00	6	25	6	4	365,00 28000	365,00 28000	488,80 28000 2)	488,80 28000 1)	488,80 28000 1)
28,01 - 29,99	6	25	6	4	488,80 xxxx 1)	488,80 xxxx 1)	488,80 xxxx 2)	488,80 xxxx 1)	488,80 xxxx 1)
30,00	6	25	6	4	381,70 30000	381,70 30000	488,80 30000 2)	488,80 30000 1)	488,80 30000 1)
30,01 - 31,79	6	25	6	4	488,80 xxxx 1)	488,80 xxxx 1)	488,80 xxxx 2)	488,80 xxxx 1)	488,80 xxxx 1)
31,80 - 31,99	6	25	8	4	511,00 xxxx 1)	511,00 xxxx 1)	511,00 xxxx 2)	511,00 xxxx 1)	511,00 xxxx 1)
32,00	6	25	8	4	395,20 32000	395,20 32000	511,00 32000 2)	511,00 32000 1)	511,00 32000 1)
32,01 - 34,99	6	25	8	4	511,00 xxxx 1)	511,00 xxxx 1)	511,00 xxxx 2)	511,00 xxxx 1)	511,00 xxxx 1)
35,00	6	25	8	5	413,90 35000	413,90 35000	559,00 35000 2)	559,00 35000 1)	559,00 35000 1)
35,01 - 39,99	6	25	8	5	559,00 xxxx 1)	559,00 xxxx 1)	559,00 xxxx 2)	559,00 xxxx 1)	559,00 xxxx 1)
40,00	6	25	8	5	437,80 40000	437,80 40000	559,00 40000 2)	559,00 40000 1)	559,00 40000 1)
40,01 - 41,99	6	25	8	5	559,00 xxxx 1)	559,00 xxxx 1)	559,00 xxxx 2)	559,00 xxxx 1)	559,00 xxxx 1)
42,00	6	30	8	6	437,80 42000	437,80 42000	607,20 42000 2)	607,20 42000 1)	607,20 42000 1)
42,01 - 49,99	6	30	8	6	607,20 xxxx 1)	607,20 xxxx 1)	607,20 xxxx 2)	607,20 xxxx 1)	607,20 xxxx 1)
50,00	6	30	8	6	448,20 50000	448,20 50000	607,20 50000 2)	607,20 50000 1)	607,20 50000 1)
50,01 - 51,99	6	30	8	6	607,20 xxxx 1)	607,20 xxxx 1)	607,20 xxxx 2)	607,20 xxxx 1)	607,20 xxxx 1)
52,00 - 53,99	8	35	10	7	673,40 xxxx 1)	673,40 xxxx 1)	673,40 xxxx 2)	673,40 xxxx 1)	673,40 xxxx 1)
54,00	8	35	10	7	504,40 54000	504,40 54000	673,40 54000 2)	673,40 54000 1)	673,40 54000 1)
54,01 - 65,00	8	35	10	7	673,40 xxxx 1)	673,40 xxxx 1)	673,40 xxxx 2)	673,40 xxxx 1)	673,40 xxxx 1)
Steel					●	●		●	○
Stainless steel						●			
Cast iron					●			●	
Non ferrous metals					○		●		●
Heat resistant alloys									
Hardened materials									

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

→ v_c Page 51–53

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 24,12 H7 → Article no. 40 539 2412)!
All other diameters and tolerance classes are also possible (eg 18,5 $^{+0.025}$ or 18 N7)!

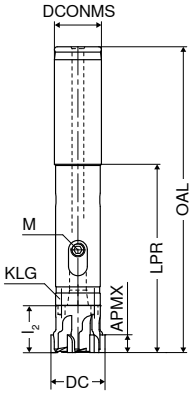
Assembly instructions can be found on → **Page 71**

REAMAX TS – Holder

▲ KLG = Coupling Size

Supply details:

Complete holder incl. pull stud but without exchangeable head







DC mm	KOMET no.	KLG	OAL mm	l_2 mm	LPR mm	APMX mm	DCONMS $_{h6}$ mm	M Nm	NEW U3 Article no. 40 501 ... EUR		NEW U3 Article no. 40 503 ... EUR	
18,00 - 19,99	75A.40.13010	1	130	20	80	6	20	1,5	349,80	02099		
18,00 - 19,99	75A.40.15010	1	190	20	140	6	20	1,5			362,80	02099
20,00 - 21,99	75A.40.13020	2	130	20	80	6	20	2,5	362,80	02299		
20,00 - 21,99	75A.40.15020	2	190	20	140	6	20	2,5			378,40	02299
22,00 - 26,99	75A.40.13030	3	130	20	80	6	20	4	371,80	02799		
22,00 - 26,99	75A.40.15030	3	210	20	160	6	20	4			399,20	02799
27,00 - 34,99	75A.40.13040	4	176	25	120	6	25	5	386,20	03599		
27,00 - 34,99	75A.40.15040	4	236	25	180	6	25	5			410,80	03599
35,00 - 41,99	75A.40.13050	5	176	25	120	6	25	6	440,80	04299		
35,00 - 41,99	75A.40.15050	5	256	25	200	6	25	6			440,80	04299
42,00 - 51,99	75A.40.13060	6	180	30	120	6	32	10	455,00	05299		
42,00 - 51,99	75A.40.15060	6	280	30	220	6	30	10			455,00	05299
52,00 - 65,00	75A.40.13070	7	180	30	120	8	32	13	469,40	06599		
52,00 - 65,00	75A.40.15070	7	280	30	220	8	30	13			469,40	06599

Do not heat shrink tools!



U3 Reamax TS pull stud



Y7 Clamping key – T



Y7 Key D

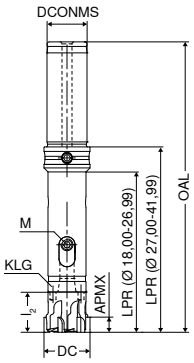
Spare parts DC	Article no. 40 900 ... EUR			Article no. 80 397 ... EUR		Article no. 80 950 ... EUR	
18,00 - 19,99	9,38	00100				T08 - IP 6,28	039
20,00 - 21,99	9,38	00200	SW2,5	3,97	025		
22,00 - 26,99	9,38	00300	SW3	3,85	030		
27,00 - 34,99	9,38	00400	SW3	3,85	030		
35,00 - 41,99	13,01	00500	SW3	3,85	030		
42,00 - 51,99	13,01	00500	SW4	3,91	040		
52,00 - 65,00	13,01	00700	SW5	4,24	050		

Assembly instructions can be found on → **Page 71**

REAMAX TS – Holder

- KLG = Coupling size
- adjustment inside the machine
- alignable DAH Zero holder for correction of concentricity error
- DAH Zero holder is pre-loaded and set to a runout of < 0.005 mm

Supply details:
Complete holder incl. pull stud but without exchangeable head



DAH Zero



~A

≤ 3xD

DAH Zero



~A

≤ 5xD

DC mm	KOMET no.	KLG	OAL mm	l_2 mm	LPR mm	APMX mm	DCONMS $_{h6}$ mm	M Nm	NEW U3 Article no. 40 504 ... EUR		NEW U3 Article no. 40 506 ... EUR	
18,00 - 19,99	75A.41.13010	1	145	20	80	6	20	1,5	469,40	**02099**		
18,00 - 19,99	75A.41.15010	1	205	20	140	6	20	1,5			499,20	**02099**
20,00 - 21,99	75A.41.13020	2	145	20	80	6	20	2,5	474,60	**02299**		
20,00 - 21,99	75A.41.15020	2	205	20	140	6	20	2,5			514,80	**02299**
22,00 - 26,99	75A.41.13030	3	145	20	80	6	20	4	486,20	**02799**		
22,00 - 26,99	75A.41.15030	3	225	20	160	6	20	4			529,20	**02799**
27,00 - 34,99	75A.41.13040	4	145	25	120	6	25	5	511,00	**03599**		
27,00 - 34,99	75A.41.15040	4	236	25	180	6	25	5			529,20	**03599**
35,00 - 41,99	75A.41.13050	5	176	25	120	6	25	6	621,40	**04299**		
35,00 - 41,99	75A.41.15050	5	236	25	200	6	25	6			633,20	**04299**

Do not heat shrink tools!

U3



Reamax TS pull stud

Y7



Clamping key – T

Y7

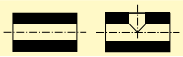
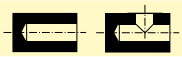
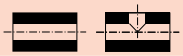
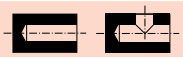


Key D

Spare parts DC	Article no. 40 900 ... EUR			Article no. 80 397 ... EUR			Article no. 80 950 ... EUR	
18,00 - 19,99	9,38	**00100**				T08 - IP	6,28	**039**
20,00 - 21,99	9,38	**00200**	SW2,5	3,97	**025**			
22,00 - 26,99	9,38	**00300**	SW3	3,85	**030**			
27,00 - 34,99	9,38	**00400**	SW3	3,85	**030**			
35,00 - 41,99	13,01	**00500**	SW3	3,85	**030**			

Assembly instructions can be found on → **Page 71**

REAMAX – Selection guide

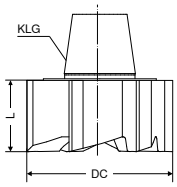
Ø 12,5–40 mm	**KOMET no.**	640.93	640.65	640.27	640.93	640.65	640.71
	Lead	ASG4000	ASG0106	ASG0706	ASG3000	ASG3000	ASG3000
	Lead angle	25°	45°	45°/8°	45°	45°	45°
	New grade / coating	DST	DBG-P	DBC	DST	DBG-P	TiN
	Old grade / coating	CWC10	TiALN	DLC	CWC10	TiALN	CWN10
	Article no.	40 536 ...	40 551 ...	40 570 ...	40 525 ...	40 560 ...	40 505 ...
	Application	Through hole	Through hole-Blind hole				
Material	**Preferred type available**	✓	✓	✓	✓	✓	✓
Steel up to 1000 N/mm²		●			●	○	○
					●	○	○
						●	○
						●	○
Steel > 1000 N/mm²			●		●		
			●				
			●				
			●				
Stainless steel			●				
			●				
Grey cast iron / alloyed nodular cast iron (0.7661) and vermicular cast iron (5.2200)						●	
						●	
Nodular cast iron		○			●	○	
					●	○	
						●	
						●	
Copper, brass, bronze					○		●
					○		●
							●
							●
Aluminium				●			
				●			
				●			
				●			
Tempered steel			●				
			●				
			●				
			●				

Applications:	Main application	●
	Additional range of application	○

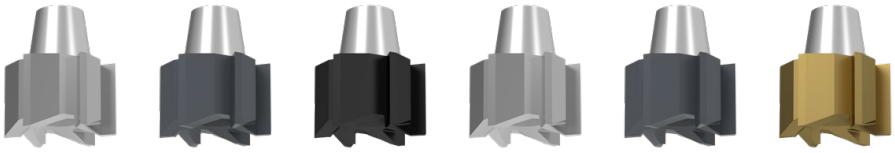
REAMAX – Replaceable reaming heads

- up to tolerance zone IT 7 with absolute process safety, from the first hole
- precise repeatability < 2 µm
- maximum radial run-out accuracy thanks to precision ground taper location
- no Ø adjustment necessary
- optimised for application with minimum quantity lubrication (MMS)
- retraction from the hole at 3–4 times the cutting feed rate
- KLG = coupling size





DST	DBG-P	DBC	DST	DBG-P	TiN
CWC10	TiAlN	DLC	CWC10	TiAlN	CWN10



640.93 ◁ 25° ASG4000 CERMET Through hole

640.65 ◁ 45° ASG0106 HM Through hole + Blind hole

640.27 ◁ 45° ASG0706 HM Through hole + Blind hole

640.93 ◁ 45° ASG3000 CERMET Through hole + Blind hole

640.65 ◁ 45° ASG3000 HM Through hole + Blind hole

640.71 ◁ 45° ASG3000 HM Through hole + Blind hole

DC H7	L	ZEFP	KLG	U3 Article no. 40 536 ...		NEW U3 Article no. 40 551 ...		NEW U3 Article no. 40 570 ...		U3 Article no. 40 525 ...		NEW U3 Article no. 40 560 ...		U3 Article no. 40 505 ...	
mm	mm			EUR		EUR		EUR		EUR		EUR		EUR	
12,50 - 14,99	9	6	1	267,80	xxxx [2]	267,80	xxxx [1]	267,80	xxxx [1]	267,80	xxxx [2]	267,80	xxxx [1]	267,80	xxxx [1]
15,00	9	6	1	221,50	15000 [2]	221,50	15000 [1]	221,50	15000 [1]	221,50	15000 [2]	221,50	15000	221,50	150
15,01 - 15,99	9	6	1	267,80	xxxx [2]	267,80	xxxx [1]	267,80	xxxx [1]	267,80	xxxx [2]	267,80	xxxx [1]	267,80	xxxx [1]
16,00	9	6	2	254,80	160	254,80	16000 [1]	254,80	16000 [1]	254,80	160	254,80	16000	254,80	160
16,01 - 17,99	9	6	2	305,60	xxxx [2]	305,60	xxxx [1]	305,60	xxxx [1]	305,60	xxxx [2]	305,60	xxxx [1]	305,60	xxxx [1]
18,00	9	6	2	257,90	180	257,90	18000 [1]	257,90	18000 [1]	257,90	180	257,90	18000	257,90	180
18,01 - 19,99	9	6	2	305,60	xxxx [2]	305,60	xxxx [1]	305,60	xxxx [1]	305,60	xxxx [2]	305,60	xxxx [1]	305,60	xxxx [1]
20,00	9	6	2	263,10	200	263,10	20000 [1]	263,10	20000 [1]	263,10	200	263,10	20000	263,10	200
20,01 - 21,99	9	6	2	305,60	xxxx [2]	305,60	xxxx [1]	305,60	xxxx [1]	305,60	xxxx [2]	305,60	xxxx [1]	305,60	xxxx [1]
22,00	9	8	3	269,40	220	269,40	22000 [1]	269,40	22000 [1]	269,40	220	269,40	22000	269,40	220
22,01 - 23,99	9	8	3	330,20	xxxx [2]	330,20	xxxx [1]	330,20	xxxx [1]	330,20	xxxx [2]	330,20	xxxx [1]	330,20	xxxx [1]
24,00	9	8	3	278,70	24000 [2]	278,70	24000 [1]	278,70	24000 [1]	278,70	24000 [2]	278,70	24000	278,70	240
24,01 - 24,99	9	8	3	330,20	xxxx [2]	330,20	xxxx [1]	330,20	xxxx [1]	330,20	xxxx [2]	330,20	xxxx [1]	330,20	xxxx [1]
25,00	9	8	3	290,20	250	290,20	25000 [1]	290,20	25000 [1]	290,20	250	290,20	25000	290,20	250
25,01 - 25,99	9	8	3	330,20	xxxx [2]	330,20	xxxx [1]	330,20	xxxx [1]	330,20	xxxx [2]	330,20	xxxx [1]	330,20	xxxx [1]
26,00 - 27,99	9	8	4	378,60	xxxx [2]	378,40	xxxx [1]	378,40	xxxx [1]	378,60	xxxx [2]	378,40	xxxx [1]	378,60	xxxx [1]
28,00	9	8	4	300,60	280	300,60	28000 [1]	300,60	28000 [1]	300,60	280	300,60	28000	300,60	280
28,01 - 29,99	9	8	4	378,40	xxxx [2]	378,40	xxxx [1]	378,40	xxxx [1]	378,40	xxxx [2]	378,40	xxxx [1]	378,40	xxxx [1]
30,00	9	8	4	315,10	300	315,10	30000 [1]	315,10	30000 [1]	315,10	300	315,10	30000	315,10	300
30,01 - 32,00	9	8	4	378,40	xxxx [2]	378,40	xxxx [1]	378,40	xxxx [1]	378,40	xxxx [2]	378,40	xxxx [1]	378,40	xxxx [1]
32,01 - 39,99	9	8	5	429,00	xxxx [2]	429,00	xxxx [1]	429,00	xxxx [1]	429,00	xxxx [2]	429,50	xxxx [1]	429,00	xxxx [1]
40,00	9	8	5	333,80	400	333,80	40000 [1]	333,80	40000 [1]	333,80	400	333,80	40000	333,80	400

Steel	●	●		●	●	○
Stainless steel		●				
Cast iron	○			●	●	
Non ferrous metals			●	○		●
Heat resistant alloys						
Hardened materials		●				

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

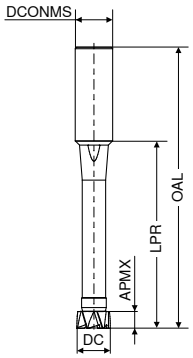
→ v_c Page 55–57

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.12 H7 → Article no. 40 525 1512)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

REAMAX – Holder

▲ KLG = Coupling size

Supply details:
Tool holder fitted with clamp and hexagonal key, but without replaceable head





DC	KOMET no.	KLG	OAL	LPR	APMX	DCONMS h6	M	U3 Article no. 40 590 ...		U3 Article no. 40 591 ...	
mm			mm	mm	mm	mm	Nm	EUR		EUR	
12,50 - 15,99	640.01.001	1	107	59	9	16	4 - 5	345,80	**016**		
12,50 - 15,99	640.81.001	1	137	89	9	16	4 - 5			345,80	**016**
16,00 - 21,99	640.01.002	2	119	69	9	20	6 - 7	361,40	**022**		
16,00 - 21,99	640.81.002	2	169	119	9	20	6 - 7			361,40	**022**
22,00 - 25,99	640.01.003	3	140	84	9	25	10 - 12	384,80	**026**		
22,00 - 25,99	640.81.003	3	196	140	9	25	10 - 12			384,80	**026**
26,00 - 32,00	640.01.005	4	160	104	9	25	18 - 20	397,80	**032**		
26,00 - 32,00	640.81.005	4	226	170	9	25	18 - 20			397,80	**032**
32,01 - 40,00	640.01.006	5	199	139	9	32	26 - 28	455,00	**040**		
32,01 - 40,00	640.81.006	5	270	210	9	32	26 - 28			455,00	**040**

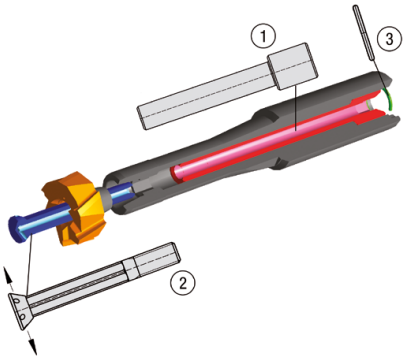
Do not heat shrink tools!





Spare parts DC	DCONMS h6	U3 Article no. 40 950 ...		U3 Article no. 40 950 ...		U3 Article no. 40 950 ...		U3 Article no. 40 950 ...	
		EUR		EUR		EUR		EUR	
12,50 - 15,99	16			47,11	**101**	119,60	**001**	1,04	**301**
12,50 - 15,99	16	46,80	**107**			119,60	**001**	1,04	**301**
16,00 - 21,99	20	46,80	**108**			119,60	**002**	1,04	**302**
16,00 - 21,99	20			47,11	**102**	119,60	**002**	1,04	**302**
22,00 - 25,99	25			55,12	**103**	124,80	**003**	1,04	**303**
22,00 - 25,99	25	55,12	**109**			124,80	**003**	1,04	**303**
26,00 - 32,00	25			63,44	**104**	131,40	**004**	1,04	**303**
26,00 - 32,00	25	63,44	**110**			131,40	**004**	1,04	**303**
32,01 - 40,00	32	71,76	**112**			141,80	**005**	1,04	**304**
32,01 - 40,00	32			71,76	**106**	141,80	**005**	1,04	**304**

(1) Draw bolt
(2) Draw bar
(3) Circlip



MultiChange Programme Overview

The highly stable „MultiChange“ exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Solid carbide drilling

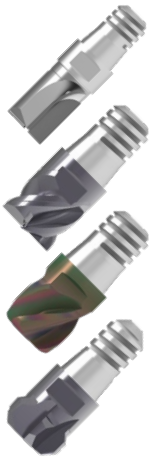


- Solid carbide NC Spot Drill
  ◁ 90°, 120°, 142° / Ø 8, 10, 12, 16, 20 mm / ZEFP* 2

→ **Chapter 2, Solid carbide drilling**

*ZEFP = Number of teeth

Solid carbide milling cutters



- PCD shoulder mills
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 2
- Solid carbide shoulder mills
  Type N, PCR-UNI, PCR-ALU / Ø 8, 10, 12, 16, 20 mm / ZEFP 3+4
- Solid carbide rough and finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 4–6
- Solid carbide finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide high-feed cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide ball-nosed end mills
  Ø 10, 12, 16, 20 mm / ZEFP* 4
- Solid carbide torus bull nose milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide quarter round cutter
  Ø 8, 10, 12, 16, 20 mm
- Solid carbide deburring cutters
  Ø 10, 12, 16, 20 mm / ZEFP* 4+6

→ **Chapter 14, Solid carbide milling cutters**

*ZEFP = Number of teeth

Tool holder



- Steel holder extra short
  Cylindrical / Tapered 87°
  Length 60–90 mm
  for KLG 8, 10, 12, 16, 20 mm



- Short holder steel/Solid carbide
  Cylindrical
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm



- Holder steel /Solid carbide, short
  87° Taper
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm



- Solid carbide holder, medium
  Cylindrical / Tapered 87°
  Length 110–150 mm
  for KLG 8, 10, 12, 16, 20 mm



- Holder steel/Solid carbide, long
  Cylindrical
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm



- Holder steel/Solid carbide, long
  87° Taper
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm



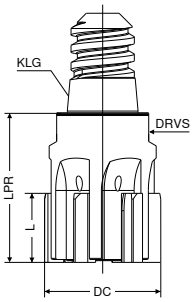
- Steel/Solid carbide holder, extra long
  Cylindrical
  Length 200–250 mm
  for Ø 16 and 20 mm

→ **Chapter 17, Accessories**

MultiChange – Reaming head, for thro' holes

- ▲ to tolerance zone IT 7 with absolute process security – from the first hole
- ▲ high-speed reaming heads
- ▲ irregular pitch for highest concentricity
- ▲ repeatability ≤ 5 µm
- ▲ KLG = coupling size





	CWC10	TiAlN	TiAlN	K10	PDC
					
	Left Hand Helix ◁ 30° CERMET Through hole	Left Hand Helix ◁ 30° HM Through hole	straight flute ◁ 45° HM Through hole	straight flute ◁ 45° Solid carbide Through hole	straight flute ◁ 45° PDC Through hole
	U3	U3	U3	U3	U3
DC H7 mm	KLG	L mm	LPR mm	ZEFP	DRVS mm	TQX Nm	Article no. 40 210 ... EUR		Article no. 40 220 ... EUR		Article no. 40 230 ... EUR		Article no. 40 240 ... EUR		Article no. 40 245 ... EUR	
8,00	06	8	18	4	6	5,0	170,90	080	170,90	080	170,90	080	154,30	080 1)	412,30	080 1)
8,01 - 9,70	06	8	18	4	6	5,0	187,30	xxxx 1)	186,30	xxxx 1)	186,30	xxxx 1)	168,60	xxxx 1)	463,10	xxxx 1)
9,71 - 9,99	06	8	18	6	8	5,0	210,50	xxxx 1)	210,50	xxxx 1)	210,50	xxxx 1)	189,60	xxxx 1)	504,40	xxxx 1)
10,00	06	8	18	6	8	5,0	195,10	100	195,10	100	195,10	100	174,10	100 1)	455,70	100 1)
10,01 - 10,70	06	8	18	6	8	5,0	210,50	xxxx 1)	210,50	xxxx 1)	210,50	xxxx 1)	189,60	xxxx 1)	504,40	xxxx 1)
10,71 - 11,99	08	8	20	6	8	12,5	210,50	xxxx 1)	210,50	xxxx 1)	210,50	xxxx 1)	189,60	xxxx 1)	522,50	xxxx 1)
12,00	08	8	20	6	8	12,5	195,10	120	195,10	120	195,10	120	174,10	120 1)	463,10	120 1)
12,01 - 12,70	08	8	20	6	8	12,5	210,50	xxxx 1)	210,50	xxxx 1)	210,50	xxxx 1)	189,60	xxxx 1)	522,50	xxxx 1)
12,71 - 13,99	10	8	22	6	10	15,0	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	522,50	xxxx 1)
14,00	10	8	22	6	10	15,0	206,10	140	206,10	140	206,10	140	186,30	140 1)	463,10	140 1)
14,01 - 15,99	10	8	22	6	10	15,0	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	522,50	xxxx 1)
16,00	10	8	22	6	10	15,0	206,10	160	206,10	160	206,10	160	186,30	160 1)	488,60	160 1)
16,01 - 16,20	10	8	22	6	10	15,0	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	548,90	xxxx 1)
16,21 - 17,20	10	8	22	6	13	15,0	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	548,90	xxxx 1)
17,21 - 17,99	12	12	26	6	13	20,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
18,00	12	12	26	6	13	20,0	217,10	180	217,10	180	217,10	180	195,10	180 1)	492,80	180 1)
18,01 - 19,20	12	12	26	6	13	20,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
19,21 - 19,99	12	12	26	6	16	20,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
20,00	12	12	26	6	16	20,0	217,10	200	217,10	200	217,10	200	195,10	200 1)	492,80	200 1)
20,01 - 20,20	12	12	26	6	16	20,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
20,21 - 21,20	12	12	26	6	16	20,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	554,20	xxxx 1)
21,21 - 21,99	16	12	26	6	16	25,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	563,80	xxxx 1)
22,00	16	12	26	6	16	25,0	227,00	220	227,00	220	227,00	220	201,80	220 1)	501,30	220 1)
22,01 - 23,99	16	12	26	6	16	25,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	563,80	xxxx 1)
24,00	16	12	26	6	16	25,0	227,00	240	227,00	240	227,00	240	201,80	240 1)	501,30	240 1)
24,01 - 24,20	16	12	26	6	16	25,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	563,80	xxxx 1)
24,21 - 24,99	16	12	26	6	19	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
25,00	16	12	26	6	19	25,0	240,20	250	240,20	250	240,20	250	218,30	250 1)	518,20	250 1)
25,01 - 25,99	16	12	26	6	19	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
26,00	16	12	26	6	19	25,0	240,20	260	240,20	260	240,20	260	218,30	260 1)	518,20	260 1)
26,01 - 26,20	16	12	26	6	19	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
26,21 - 27,99	16	12	26	6	21	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
28,00	16	12	26	6	21	25,0	240,20	280	240,20	280	240,20	280	218,30	280 1)	518,20	280 1)
28,01 - 28,20	16	12	26	6	21	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
28,21 - 29,20	16	12	26	6	24	25,0	291,00	xxxx 1)	289,90	xxxx 1)	289,90	xxxx 1)	262,30	xxxx 1)	580,70	xxxx 1)
29,21 - 29,99	16	12	26	8	24	25,0	291,00	xxxx 1)	289,90	xxxx 1)	289,90	xxxx 1)	262,30	xxxx 1)	614,60	xxxx 1)
30,00	16	12	26	8	24	25,0	266,80	300	266,80	300	266,80	300	240,20	300 1)	548,90	300 1)
30,01 - 30,20	16	12	26	8	24	25,0	291,00	xxxx 1)	289,90	xxxx 1)	289,90	xxxx 1)	262,30	xxxx 1)	614,60	xxxx 1)

Steel	●				
Stainless steel		●			
Cast iron			●		
Non ferrous metals		○		●	●
Heat resistant alloys		●			
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 23 working days / Minimum order 2 pieces

→ v_c Page 58+59

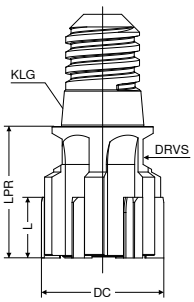
For xxxx please indicate in the order the required diameter to H7 (e.g Ø 10.89 H7 → article no. 40 230 1089)!
All other diameters and tolerances are also possible (e.g. 8.5 $^{+0.025}$ or 11 N7).

Holders and accessories can be found in → **Chapter 17, Accessories**.

MultiChange – Reaming head, for blind holes

- ▲ to tolerance zone IT 7 with absolute process security – from the first hole
- ▲ hgh-speed reaming heads
- ▲ irregular pitch for highest concentricity
- ▲ repeatability ≤ 5 µm
- ▲ KLG = coupling size





	CWC10	TiAlN	TiAlN	K10	PDC
					
	straight flute ◁ 60° CERMET Blind hole	straight flute ◁ 60° HM Blind hole	straight flute ◁ 60° HM Blind hole	straight flute ◁ 60° Solid carbide Blind hole	straight flute ◁ 75° PDC Blind hole
	U3	U3	U3	U3	U3
	Article no. 40 211 ...	Article no. 40 221 ...	Article no. 40 231 ...	Article no. 40 241 ...	Article no. 40 246 ...

DC H7 mm	KLG	L mm	LPR mm	ZEFP	DRVS mm	TQX Nm	EUR		EUR		EUR		EUR		EUR	
12,20 - 12,70	06	8	20	6	6	5,0	210,50	xxxx 1)	210,50	xxxx 1)	210,50	xxxx 1)	189,60	xxxx 1)	522,50	xxxx 1)
12,71 - 13,99	06	8	22	6	6	5,0	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	522,50	xxxx 1)
14,00	06	8	22	6	6	5,0	206,10	140	206,10	140	206,10	140	186,30	140 1)	463,10	140 1)
14,01 - 14,20	06	8	22	6	6	5,0	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	522,50	xxxx 1)
14,21 - 15,99	08	8	22	6	8	12,5	226,00	xxxx 1)	218,30	xxxx 1)	218,30	xxxx 1)	195,10	xxxx 1)	548,90	xxxx 1)
16,00	08	8	22	6	8	12,5	206,10	160	206,10	160	206,10	160	186,30	160 1)	488,60	160 1)
16,01 - 16,20	08	8	22	6	8	12,5	226,00	xxxx 1)	224,90	xxxx 1)	224,90	xxxx 1)	201,80	xxxx 1)	548,90	xxxx 1)
16,21 - 17,20	10	8	22	6	10	15,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	552,10	xxxx 1)
17,21 - 17,99	10	12	26	6	10	15,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
18,00	10	12	26	6	10	15,0	217,10	180	217,10	180	217,10	180	195,10	180 1)	492,80	180 1)
18,01 - 19,99	10	12	26	6	10	15,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
20,00	10	12	26	6	10	15,0	217,10	200	217,10	200	217,10	200	195,10	200 1)	492,80	200 1)
20,01 - 20,20	10	12	26	6	10	15,0	234,80	xxxx 1)	234,80	xxxx 1)	234,80	xxxx 1)	210,50	xxxx 1)	554,20	xxxx 1)
20,21 - 21,99	12	12	26	6	13	20,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	554,20	xxxx 1)
22,00	12	12	26	6	13	20,0	227,00	220	227,00	220	227,00	220	201,80	220 1)	501,30	220 1)
22,01 - 23,99	12	12	26	6	13	20,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	563,80	xxxx 1)
24,00	12	12	26	6	13	20,0	227,00	240	227,00	240	227,00	240	201,80	240 1)	501,30	240 1)
24,01 - 24,20	12	12	26	6	13	20,0	245,80	xxxx 1)	245,80	xxxx 1)	245,80	xxxx 1)	220,50	xxxx 1)	563,80	xxxx 1)
24,21 - 24,99	16	12	26	6	16	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	563,80	xxxx 1)
25,00	16	12	26	6	16	25,0	240,20	250	240,20	250	240,20	250	218,30	250 1)	518,20	250 1)
25,01 - 25,99	16	12	26	6	16	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	563,80	xxxx 1)
26,00	16	12	26	6	16	25,0	240,20	260	240,20	260	240,20	260	218,30	260 1)	518,20	260 1)
26,01 - 27,99	16	12	26	6	16	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
28,00	16	12	26	6	16	25,0	240,20	280	240,20	280	240,20	280	218,30	280 1)	518,20	280 1)
28,01 - 28,20	16	12	26	6	16	25,0	263,30	xxxx 1)	263,30	xxxx 1)	263,30	xxxx 1)	235,90	xxxx 1)	580,70	xxxx 1)
28,21 - 29,20	16	12	26	6	16	25,0	291,00	xxxx 1)	289,90	xxxx 1)	289,90	xxxx 1)	262,30	xxxx 1)	580,70	xxxx 1)
29,21 - 29,99	16	12	26	8	16	25,0	291,00	xxxx 1)	281,10	xxxx 1)	281,10	xxxx 1)	252,40	xxxx 1)	614,60	xxxx 1)
30,00	16	12	26	8	16	25,0	266,80	300	266,80	300	266,80	300	240,20	300 1)	548,90	300 1)
30,01 - 30,20	16	12	26	8	16	25,0	291,00	xxxx 1)	289,90	xxxx 1)	289,90	xxxx 1)	262,30	xxxx 1)	614,60	xxxx 1)

Steel	●				
Stainless steel		●			
Cast iron			●		
Non ferrous metals		○		●	●
Heat resistant alloys		●			
Hardened materials					

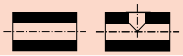
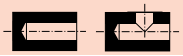
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 23 working days / Minimum order 2 pieces

→ v_c Page 58+59

For xxxx please indicate in the order the required diameter to H7 (e.g Ø 12.89 H7 – article no. 40 231 1289)!
All other diameters and tolerances are also possible (e.g. 18.5 $^{+0.025}$ or 15 N7).

Holders and accessories can be found in → **Chapter 17, Accessories**.

Monomax – Selection guide

Ø 5,60–25,89	**KOMET no. (3xD)**	56J.93	56J.65	56H.65	56J.17	56H.17	56J.93	56H.65	56J.71
	KOMET no. (5xD)	56R.93	56R.65	56Q.65	56R.17	56Q.17	56R.93	56Q.65	56R.71
	Lead	ASG4000	ASG0106	ASG0106	ASG0706	ASG0706	ASG3000	ASG3000	ASG3000
	Lead angle	25°	45°	45°	45°/8°	45°/8°	45°	45°	45°
	New grade / coating	DST	DBG-P	DBG-P	DBC	DBC	DST	DBG-P	TIN
	Old grade / coating	CWC10	TiALN	TiALN	DLC	DLC	CWC10	TiALN	CWN10
	Article no. (3xD)	40 635 ...	40 652 ...	40 644 ...	40 648 ...	40 640 ...	40 625 ...	40 657 ...	40 605 ...
	Article no. (5xD)	40 636 ...	40 653 ...	40 645 ...	40 649 ...	40 641 ...	40 626 ...	40 665 ...	40 606 ...
	Application	Through hole	Through hole	Blind hole	Through hole	Blind hole	Through hole	Blind hole	Through hole
Material	**Preferred type available**	✓	✓				✓		✓
Steel up to 900 N/mm²		●					●		○
								●	
									○
								●	
Steel > 900 N/mm²			●						
			○	●					
			●						
			○	●					
Stainless steel			●						
			○	●					
			●						
			○	●					
Grey cast iron / alloyed nodular cast iron (0.7661) and vermicular cast iron (5.2200)								○	○
								●	
Nodular cast iron		●					●	○	○
							○	●	
								○	○
								●	
Copper, brass, bronze							○		●
									
									●
									
Aluminium					●				
					○	●			
					●				
					○	●			

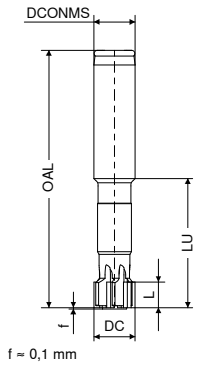
Applications:

Main application	●
Additional range of application	○

Monomax – High-speed reamers, short

- ▲ adjustable for smallest bore tolerances
- ▲ wear compensation within the tolerance zone
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ up to tolerance class IT 5 with absolute process security, from the first hole





DST	DBC	DBG-P	DST	TiN
CWC10	DLC	TiAlN	CWC10	CWN10



56J.93	56J.17	56J.65	56J.93	56J.71
≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD
◁ 45°	◁ 45/8°	◁ 45°	◁ 25°	◁ 45°
ASG3000	ASG0706	ASG0106	ASG4000	ASG3000
CERMET	HM	HM	CERMET	HM
Through hole	Through hole	Through hole	Through hole	Through hole

						U3		NEW U3		NEW U3		U3		U3	
DC H7	OAL	LU	L	DCONMS h6	ZEFP	Article no. 40 625 ...		Article no. 40 648 ...		Article no. 40 652 ...		Article no. 40 635 ...		Article no. 40 605 ...	
mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
5,60 - 5,99	85	40	10	12	4	369,20	xxxx 2)	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 2)	369,20	xxxx 1)
6,00	85	40	10	12	4	303,70	060	369,20	06000 1)	303,70	06000	303,70	060	303,70	060
6,01 - 7,99	85	40	10	12	4	369,20	xxxx 2)	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 2)	369,20	xxxx 1)
8,00	85	40	10	12	4	315,10	080	369,20	08000 1)	315,10	08000	315,10	080	315,10	080
8,01 - 8,89	85	40	10	12	4	369,20	xxxx 2)	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 2)	369,20	xxxx 1)
8,90 - 9,89	95	50	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
9,90 - 9,99	95	50	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
10,00	95	50	10	12	6	341,10	100	425,20	10000 1)	341,10	10000	341,10	100	341,10	100
10,01 - 11,99	95	50	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
12,00	95	50	10	12	6	351,50	120	425,20	12000 1)	351,50	12000	351,50	120	351,50	120
12,01 - 13,99	95	50	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
14,00	95	50	10	12	6	376,50	140	425,20	14000 1)	376,50	14000	376,50	140	376,50	140
14,01 - 14,99	95	50	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
15,00	95	50	10	12	6	385,80	150	425,20	15000 1)	385,80	15000	385,80	150	385,80	150
15,01 - 15,89	95	50	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
15,90 - 15,99	100	50	10	16	6	522,60	xxxx 2)	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 2)	522,60	xxxx 1)
16,00	100	50	10	16	6	395,20	160	522,60	16000 1)	395,20	16000	395,20	160	395,20	160
16,01 - 17,99	100	50	10	16	6	522,60	xxxx 2)	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 2)	522,60	xxxx 1)
18,00	100	50	10	16	6	422,20	180	522,60	18000 1)	422,20	18000	422,20	180	422,20	180
18,01 - 18,89	100	50	10	16	6	522,60	xxxx 2)	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 2)	522,60	xxxx 1)
18,90 - 19,99	120	60	10	20	6	634,40	xxxx 2)	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 2)	634,40	xxxx 1)
20,00	120	60	10	20	6	455,50	200	634,40	20000 1)	455,50	20000	455,50	200	455,50	200
20,01 - 25,89	120	60	10	20	6	634,40	xxxx 2)	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 2)	634,40	xxxx 1)

Steel	●		●	●	○
Stainless steel			●		
Cast iron	●				
Non ferrous metals		●			●
Heat resistant alloys					
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

→ v_c Page 60–63

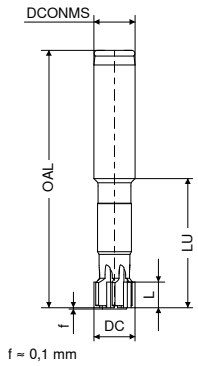
Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 635 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Monomax – High-speed reamers, short

- adjustable for smallest bore tolerances
- wear compensation within the tolerance zone
- retraction from the hole at 3–4 times the cutting feed rate
- up to tolerance class IT 5 with absolute process security, from the first hole





f ≈ 0,1 mm

	DBG-P	DBC	DBG-P
	TiAlN	DLC	TiAlN
			
	56H.65 ≤ 3xD ∢ 45° ASG0106 HM Blind hole	56H.17 ≤ 3xD ∢ 45/8° ASG0706 HM Blind hole	56H.65 ≤ 3xD ∢ 45° ASG3000 HM Blind hole
	NEW U3	NEW U3	NEW U3
	Article no. 40 644 ...	Article no. 40 640 ...	Article no. 40 657 ...
	EUR	EUR	EUR

DC H7 mm	OAL mm	LU mm	L mm	DCONMS h6 mm	ZEFP	EUR		EUR		EUR	
5,60 - 5,99	85	40	10	12	4	369,20	xxxx 1)	369,20	xxxx 1)	634,40	xxxx 1)
6,00	85	40	10	12	4	369,20	06000 1)	369,20	06000 1)	369,20	06000 1)
6,01 - 7,99	85	40	10	12	4	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 1)
8,00	85	40	10	12	4	369,20	08000 1)	369,20	08000 1)	369,20	08000 1)
8,01 - 8,89	85	40	10	12	4	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 1)
8,90 - 9,89	95	50	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
9,90 - 9,99	95	50	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
10,00	95	50	10	12	6	425,20	10000 1)	425,20	10000 1)	425,20	10000 1)
10,01 - 11,99	95	50	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
12,00	95	50	10	12	6	425,20	12000 1)	425,20	12000 1)	425,20	12000 1)
12,01 - 13,99	95	50	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
14,00	95	50	10	12	6	425,20	14000 1)	425,20	14000 1)	425,20	14000 1)
14,01 - 14,99	95	50	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
15,00	95	50	10	12	6	425,20	15000 1)	425,20	15000 1)	425,20	15000 1)
15,01 - 15,89	95	50	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
15,90 - 15,99	100	50	10	16	6	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 1)
16,00	100	50	10	16	6	522,60	16000 1)	522,60	16000 1)	522,60	16000 1)
16,01 - 17,99	100	50	10	16	6	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 1)
18,00	100	50	10	16	6	522,60	18000 1)	522,60	18000 1)	522,60	18000 1)
18,01 - 18,89	100	50	10	16	6	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 1)
18,90 - 19,99	120	60	10	20	6	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 1)
20,00	120	60	10	20	6	634,40	20000 1)	634,40	20000 1)	634,40	20000 1)
20,01 - 25,89	120	60	10	20	6	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 1)

Steel	●		●
Stainless steel	●		
Cast iron			●
Non ferrous metals		●	
Heat resistant alloys			
Hardened materials			

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

→ v_c Page 60–63

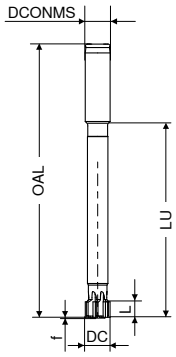
Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 644 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Monomax – High-speed reamers, long

- adjustable for the smallest bore tolerances
- wear compensation within the tolerance zone
- retraction from the hole at 3–4 times the cutting feed rate
- up to tolerance class IT 5 with absolute process security, from the first hole





f ≈ 0,1 mm

	DST	DBC	DBG-P	DST	TiN
	CWC10	DLC	TiAlN	CWC10	CWN10
					
	56R.93 ≤ 5xD ∢ 45° ASG3000 CERMET Through hole	56R.17 ≤ 5xD ∢ 45/8° ASG0706 HM Through hole	56R.65 ≤ 5xD ∢ 45° ASG0106 HM Through hole	56R.93 ≤ 5xD ∢ 25° ASG4000 CERMET Through hole	56R.71 ≤ 5xD ∢ 45° ASG3000 HM Through hole
		U3	NEW U3	NEW U3	U3	U3
		Article no. 40 626 ...	Article no. 40 649 ...	Article no. 40 653 ...	Article no. 40 636 ...	Article no. 40 606 ...

DC H7	OAL	LU	L	DCONMS h6	ZEFP	EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm											
5,60 - 5,99	130	85	10	12	4	369,20	xxxx 2)	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 2)	369,20	xxxx 1)
6,00	130	85	10	12	4	303,70	060	369,20	06000 1)	303,70	06000	303,70	060	303,70	060
6,01 - 7,99	130	85	10	12	4	369,20	xxxx 2)	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 2)	369,20	xxxx 1)
8,00	130	85	10	12	4	315,10	080	369,20	08000 1)	315,10	08000	315,10	080	315,10	080
8,01 - 8,89	130	85	10	12	4	369,20	xxxx 2)	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 2)	369,20	xxxx 1)
8,90 - 9,89	130	85	10	12	6	425,20	xxxx 2)	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 2)	425,20	xxxx 1)
9,90 - 9,99	160	115	10	12	6	472,00	xxxx 2)	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 2)	472,00	xxxx 1)
10,00	160	115	10	12	6	341,10	100	472,00	10000 1)	341,10	10000	341,10	100	341,10	100
10,01 - 11,99	160	115	10	12	6	472,00	xxxx 2)	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 2)	472,00	xxxx 1)
12,00	160	115	10	12	6	351,50	120	472,00	12000 1)	351,50	12000	351,50	120	351,50	120
12,01 - 13,99	160	115	10	12	6	472,00	xxxx 2)	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 2)	472,00	xxxx 1)
14,00	160	115	10	12	6	376,50	140	472,00	14000 1)	376,50	14000	376,50	140	376,50	140
14,01 - 14,99	160	115	10	12	6	472,00	xxxx 2)	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 2)	472,00	xxxx 1)
15,00	160	115	10	12	6	385,80	150	472,00	15000 1)	385,80	15000	385,80	150	385,80	150
15,01 - 15,89	160	115	10	12	6	472,00	xxxx 2)	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 2)	472,00	xxxx 1)
15,90 - 15,99	180	130	10	16	6	522,60	xxxx 2)	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 2)	522,60	xxxx 1)
16,00	180	130	10	16	6	395,20	160	522,60	16000 1)	395,20	16000	395,20	160	395,20	160
16,01 - 17,99	180	130	10	16	6	522,60	xxxx 2)	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 2)	522,60	xxxx 1)
18,00	180	130	10	16	6	422,20	180	522,60	18000 1)	422,20	18000	422,20	180	422,20	180
18,01 - 18,89	180	130	10	16	6	522,60	xxxx 2)	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 2)	522,60	xxxx 1)
18,90 - 19,99	200	140	10	20	6	634,40	xxxx 2)	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 2)	634,40	xxxx 1)
20,00	200	140	10	20	6	455,50	200	634,40	20000 1)	455,50	20000	455,50	200	455,50	200
20,01 - 25,89	200	140	10	20	6	634,40	xxxx 2)	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 2)	634,40	xxxx 1)

Steel	●		●	●	○
Stainless steel			●		
Cast iron	●				
Non ferrous metals		●			●
Heat resistant alloys					
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

→ v_c Page 60–63

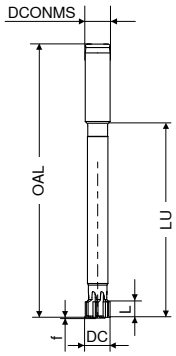
Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 636 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Monomax – High-speed reamers, long

- adjustable for the smallest bore tolerances
- wear compensation within the tolerance zone
- retraction from the hole at 3–4 times the cutting feed rate
- up to tolerance class IT 5 with absolute process security, from the first hole





f ≈ 0,1 mm

DBG-P	DBC	DBG-P
TiAlN	DLC	TiAlN







56Q.65
≤ 5xD
◁ 45°
ASG0106
HM
Blind hole

56Q.17
≤ 5xD
◁ 45/8°
ASG0706
HM
Blind hole

56Q.65
≤ 5xD
◁ 45°
ASG3000
HM
Blind hole

DC H7	OAL	LU	L	DCONMS h6	ZEFP	NEW U3 Article no. 40 645 ...		NEW U3 Article no. 40 641 ...		NEW U3 Article no. 40 665 ...	
mm	mm	mm	mm	mm		EUR		EUR		EUR	
5,60 - 5,99	130	85	10	12	4	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 1)
6,00	130	85	10	12	4	369,20	06000 1)	369,20	06000 1)	369,20	06000 1)
6,01 - 7,99	130	85	10	12	4	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 1)
8,00	130	85	10	12	4	369,20	08000 1)	369,20	08000 1)	369,20	08000 1)
8,01 - 8,89	130	85	10	12	4	369,20	xxxx 1)	369,20	xxxx 1)	369,20	xxxx 1)
8,90 - 9,89	130	85	10	12	6	425,20	xxxx 1)	425,20	xxxx 1)	425,20	xxxx 1)
9,90 - 9,99	160	115	10	12	6	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 1)
10,00	160	115	10	12	6	472,00	10000 1)	472,00	10000 1)	472,00	10000 1)
10,01 - 11,99	160	115	10	12	6	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 1)
12,00	160	115	10	12	6	472,00	12000 1)	472,00	12000 1)	472,00	12000 1)
12,01 - 13,99	160	115	10	12	6	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 1)
14,00	160	115	10	12	6	472,00	14000 1)	472,00	14000 1)	472,00	14000 1)
14,01 - 14,99	160	115	10	12	6	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 1)
15,00	160	115	10	12	6	472,00	15000 1)	472,00	15000 1)	472,00	15000 1)
15,01 - 15,89	160	115	10	12	6	472,00	xxxx 1)	472,00	xxxx 1)	472,00	xxxx 1)
15,90 - 15,99	180	130	10	16	6	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 1)
16,00	180	130	10	16	6	522,60	16000 1)	522,60	16000 1)	522,60	16000 1)
16,01 - 17,99	180	130	10	16	6	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 1)
18,00	180	130	10	16	6	522,60	18000 1)	522,60	18000 1)	522,60	18000 1)
18,01 - 18,89	180	130	10	16	6	522,60	xxxx 1)	522,60	xxxx 1)	522,60	xxxx 1)
18,90 - 19,99	200	140	10	20	6	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 1)
20,00	200	140	10	20	6	634,40	20000 1)	634,40	20000 1)	634,40	20000 1)
20,01 - 25,89	200	140	10	20	6	634,40	xxxx 1)	634,40	xxxx 1)	634,40	xxxx 1)

Steel	●		●
Stainless steel	●		
Cast iron			●
Non ferrous metals		●	
Heat resistant alloys			
Hardened materials			

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

→ v_c Page 60–63

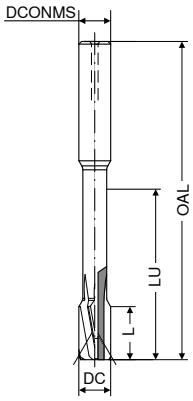
Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 645 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings





	Fullmax UNI	Fullmax VA	Fullmax ALU
	DBG-U	DBQ	DBC-N
			
	52P.57	52S.44	52N.17
	HA	HA	HA
	Left Hand Helix	Left Hand Helix	straight flute
	◁ 30°	◁ 30°	◁ 30°
	ASG2210	ASG2231	ASG2270
	Solid carbide	Solid carbide	Solid carbide
	Through hole	Through hole	Through hole
	NEW U4	NEW U4	NEW U4
	Article no. 40 484 ...	Article no. 40 401 ...	Article no. 40 471 ...
	EUR	EUR	EUR

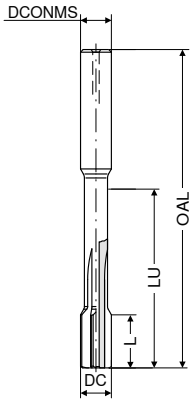
DC $_{H7}$ mm	OAL mm	L mm	LU mm	DCONMS $_{h6}$ mm	ZEFP					
4	60	12	32	4	4	137,30	04000	150,80	04000	150,80	04000
5	76	12	40	6	4	139,40	05000	153,90	05000	152,90	05000
6	76	12	40	6	4	142,50	06000	156,00	06000	156,00	06000
7	101	16	65	8	6	148,70	07000	163,30	07000	163,30	07000
8	101	16	65	8	6	148,70	08000	163,30	08000	163,30	08000
9	108	16	68	10	6	210,10	09000	230,90	09000	231,90	09000
10	108	16	68	10	6	210,10	10000	230,90	10000	231,90	10000
11	130	20	85	12	6	278,70	11000	305,80	11000	305,80	11000
12	130	20	85	12	6	278,70	12000	305,80	12000	305,80	12000
16	150	20	102	16	6	366,10	16000	402,50	16000	402,50	16000

Steel	●		
Stainless steel	●	●	
Cast iron	●		
Non ferrous metals	○		●
Heat resistant alloys	○		
Hardened materials	○		

→ v_c Page 64+65

Fullmax – High-performance machine reamers

- extremely irregular pitch
- designed for high-speed machining
- specialised geometries and coatings



Fullmax UNI	Fullmax VA	Fullmax ALU
DBG-U	DBQ	DBC-N
		
52M.57	52T.45	52Q.17
HA	HA	HA
straight flute	straight flute	straight flute
◁ 60°	◁ 45°	◁ 60°
ASG2110	ASG2131	ASG2170
Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole

DC H7	OAL	L	LU	DCONMS h6	ZEFP	NEW U4 Article no. 40 485 ... EUR	NEW U4 Article no. 40 402 ... EUR	NEW U4 Article no. 40 472 ... EUR
mm	mm	mm	mm	mm				
4	60	12	32	4	4	114,40 04000	125,80 04000	125,80 04000
5	76	12	40	6	4	116,50 05000	129,00 05000	127,90 05000
6	76	12	40	6	4	121,70 06000	134,20 06000	133,10 06000
7	101	16	65	8	6	127,90 07000	140,40 07000	139,40 07000
8	101	16	65	8	6	127,90 08000	140,40 08000	139,40 08000
9	108	16	68	10	6	183,00 09000	201,80 09000	199,70 09000
10	108	16	68	10	6	183,00 10000	201,80 10000	199,70 10000
11	130	20	85	12	6	243,40 11000	267,30 11000	266,20 11000
12	130	20	85	12	6	243,40 12000	267,30 12000	266,20 12000
16	150	20	102	16	6	327,60 16000	360,90 16000	358,80 16000

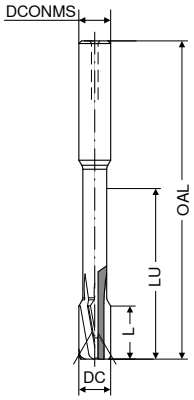
Steel	●		
Stainless steel	●	●	
Cast iron	●		
Non ferrous metals	○		●
Heat resistant alloys	○		
Hardened materials	○		

→ v_c Page 64+65

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings
- ▲ tolerance: Ø 2,96–5,03 mm = +0,004 mm
- ▲ tolerance: Ø 5,97–12,03 mm = +0,005 mm





	Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
	DBG-U	DBQ	DBG-P	DBC-N	DBF-A
					
	52P.57	52S.44	52J.65	52N.17	52G.55
	HA	HA	HA	HA	HA
	Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
	◁ 30°	◁ 30°	◁ 30°	◁ 30°	◁ 30°
	ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	Through hole	Through hole	Through hole	Through hole	Through hole
	NEW U4	NEW U4	NEW U4	NEW U4	NEW U4
	Article no. 40 486 ...	Article no. 40 403 ...	Article no. 40 477 ...	Article no. 40 473 ...	Article no. 40 475 ...

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm											
2,96 - 3,96	60	12	32	4	4	171,60	xxxxx[1]	175,60	xxxxx[2]	175,60	xxxxx[1]	175,60	xxxxx[1]	175,60	xxxxx[1]
3,97	60	12	32	4	4	145,60	03970	160,20	03970	175,60	03970[1]	175,60	03970[1]	175,60	03970[1]
3,98	60	12	32	4	4	145,60	03980	160,20	03980	175,60	03980[1]	175,60	03980[1]	175,60	03980[1]
3,99	60	12	32	4	4	145,60	03990	160,20	03990	175,60	03990[1]	175,60	03990[1]	175,60	03990[1]
4,00	60	12	32	4	4	145,60	04000	160,20	04000	200,20	04000[1]	175,60	04000[1]	200,20	04000[1]
4,01	60	12	32	4	4	145,60	04010	160,20	04010	175,60	04010[1]	175,60	04010[1]	175,60	04010[1]
4,02	60	12	32	4	4	145,60	04020	160,20	04020	175,60	04020[1]	175,60	04020[1]	175,60	04020[1]
4,03	60	12	32	4	4	145,60	04030	160,20	04030	175,60	04030[1]	175,60	04030[1]	175,60	04030[1]
4,04 - 4,05	60	12	32	4	4	171,60	xxxxx[1]	175,60	xxxxx[2]	175,60	xxxxx[1]	175,60	xxxxx[1]	175,60	xxxxx[1]
4,06 - 4,96	76	12	40	6	4	174,20	xxxxx[1]	182,00	xxxxx[2]	182,00	xxxxx[1]	182,00	xxxxx[1]	182,00	xxxxx[1]
4,97	76	12	40	6	4	148,70	04970	163,30	04970	182,00	04970[1]	182,00	04970[1]	182,00	04970[1]
4,98	76	12	40	6	4	148,70	04980	163,30	04980	182,00	04980[1]	182,00	04980[1]	182,00	04980[1]
4,99	76	12	40	6	4	148,70	04990	163,30	04990	182,00	04990[1]	182,00	04990[1]	182,00	04990[1]
5,00	76	12	40	6	4	148,70	05000	163,30	05000	206,80	05000[1]	182,00	05000[1]	206,80	05000[1]
5,01	76	12	40	6	4	148,70	05010	163,30	05010	182,00	05010[1]	182,00	05010[1]	182,00	05010[1]
5,02	76	12	40	6	4	148,70	05020	163,30	05020	182,00	05020[1]	182,00	05020[1]	182,00	05020[1]
5,03	76	12	40	6	4	148,70	05030	163,30	05030	182,00	05030[1]	182,00	05030[1]	182,00	05030[1]
5,04 - 5,96	76	12	40	6	4	174,20	xxxxx[1]	182,00	xxxxx[2]	182,00	xxxxx[1]	182,00	xxxxx[1]	182,00	xxxxx[1]
5,97	76	12	40	6	4	149,80	05970	165,40	05970	182,00	05970[1]	182,00	05970[1]	182,00	05970[1]
5,98	76	12	40	6	4	149,80	05980	165,40	05980	182,00	05980[1]	182,00	05980[1]	182,00	05980[1]
5,99	76	12	40	6	4	149,80	05990	165,40	05990	182,00	05990[1]	182,00	05990[1]	182,00	05990[1]
6,00	76	12	40	6	4	149,80	06000	165,40	06000	206,80	06000[1]	182,00	06000[1]	206,80	06000[1]
6,01	76	12	40	6	4	149,80	06010	165,40	06010	182,00	06010[1]	182,00	06010[1]	182,00	06010[1]
6,02	76	12	40	6	4	149,80	06020	165,40	06020	182,00	06020[1]	182,00	06020[1]	182,00	06020[1]
6,03	76	12	40	6	4	149,80	06030	165,40	06030	182,00	06030[1]	182,00	06030[1]	182,00	06030[1]
6,04 - 6,05	76	12	40	6	4	176,80	xxxxx[1]	182,00	xxxxx[2]	182,00	xxxxx[1]	182,00	xxxxx[1]	182,00	xxxxx[1]
6,06 - 7,96	101	16	65	8	6	183,40	xxxxx[1]	187,20	xxxxx[2]	187,20	xxxxx[1]	187,20	xxxxx[1]	187,20	xxxxx[1]
7,97	101	16	65	8	6	157,00	07970	172,60	07970	187,20	07970[1]	187,20	07970[1]	187,20	07970[1]
7,98	101	16	65	8	6	157,00	07980	172,60	07980	187,20	07980[1]	187,20	07980[1]	187,20	07980[1]

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
Hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

→ v_c Page 64+65

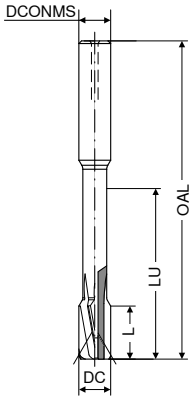
This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article No. 40 486 08820)!

Continued on next page

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings
- ▲ tolerance: Ø 2,96–5,03 mm = +0,004 mm
- ▲ tolerance: Ø 5,97–12,03 mm = +0,005 mm





Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52P.57	52S.44	52J.65	52N.17	52G.55
HA	HA	HA	HA	HA
Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
◁ 30°	◁ 30°	◁ 30°	◁ 30°	◁ 30°
ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole	Through hole	Through hole
NEW U4	NEW U4	NEW U4	NEW U4	NEW U4
Article no. 40 486 ...	Article no. 40 403 ...	Article no. 40 477 ...	Article no. 40 473 ...	Article no. 40 475 ...

DC +0,004/+0,005 mm	OAL mm	L mm	LU mm	DCONMS h6 mm	ZEFP	EUR	EUR	EUR	EUR	EUR
7,99	101	16	65	8	6	157,00 07990	172,60 07990	187,20 07990 1)	187,20 07990 1)	187,20 07990 1)
8,00	101	16	65	8	6	157,00 08000	172,60 08000	213,20 08000 1)	187,20 08000 1)	213,20 08000 1)
8,01	101	16	65	8	6	157,00 08010	172,60 08010	187,20 08010 1)	187,20 08010 1)	187,20 08010 1)
8,02	101	16	65	8	6	157,00 08020	172,60 08020	187,20 08020 1)	187,20 08020 1)	187,20 08020 1)
8,03	101	16	65	8	6	157,00 08030	172,60 08030	187,20 08030 1)	187,20 08030 1)	187,20 08030 1)
8,04 - 8,05	101	16	65	8	6	183,40 xxxxx 1)	187,20 xxxxx 2)	187,20 xxxxx 1)	187,20 xxxxx 1)	187,20 xxxxx 1)
8,06 - 9,96	108	16	68	10	6	227,60 xxxxx 1)	264,00 xxxxx 2)	264,00 xxxxx 1)	264,00 xxxxx 1)	264,00 xxxxx 1)
9,97	108	16	68	10	6	223,60 09970	246,50 09970	264,00 09970 1)	264,00 09970 1)	264,00 09970 1)
9,98	108	16	68	10	6	223,60 09980	246,50 09980	264,00 09980 1)	264,00 09980 1)	264,00 09980 1)
9,99	108	16	68	10	6	223,60 09990	246,50 09990	264,00 09990 1)	264,00 09990 1)	264,00 09990 1)
10,00	108	16	68	10	6	223,60 10000	246,50 10000	300,40 10000 1)	264,00 10000 1)	300,40 10000 1)
10,01	108	16	68	10	6	223,60 10010	246,50 10010	264,00 10010 1)	264,00 10010 1)	264,00 10010 1)
10,02	108	16	68	10	6	223,60 10020	246,50 10020	264,00 10020 1)	264,00 10020 1)	264,00 10020 1)
10,03	108	16	68	10	6	223,60 10030	246,50 10030	264,00 10030 1)	264,00 10030 1)	264,00 10030 1)
10,04 - 10,05	108	16	68	10	6	227,60 xxxxx 1)	264,00 xxxxx 2)	264,00 xxxxx 1)	264,00 xxxxx 1)	264,00 xxxxx 1)
10,06 - 11,96	130	20	85	12	6	343,20 xxxxx 1)	353,60 xxxxx 2)	353,60 xxxxx 1)	353,60 xxxxx 1)	353,60 xxxxx 1)
11,97	130	20	85	12	6	297,40 11970	327,60 11970	353,60 11970 1)	353,60 11970 1)	353,60 11970 1)
11,98	130	20	85	12	6	297,40 11980	327,60 11980	353,60 11980 1)	353,60 11980 1)	353,60 11980 1)
11,99	130	20	85	12	6	297,40 11990	327,60 11990	353,60 11990 1)	353,60 11990 1)	353,60 11990 1)
12,00	130	20	85	12	6	297,40 12000	327,60 12000	401,80 12000 1)	353,60 12000 1)	401,80 12000 1)
12,01	130	20	85	12	6	297,40 12010	327,60 12010	353,60 12010 1)	353,60 12010 1)	353,60 12010 1)
12,02	130	20	85	12	6	297,40 12020	327,60 12020	353,60 12020 1)	353,60 12020 1)	353,60 12020 1)
12,03	130	20	85	12	6	297,40 12030	327,60 12030	353,60 12030 1)	353,60 12030 1)	353,60 12030 1)
12,04 - 12,05	130	20	85	12	6	343,20 xxxxx 1)	353,60 xxxxx 2)	353,60 xxxxx 1)	353,60 xxxxx 1)	353,60 xxxxx 1)
12,06 - 14,05	130	20	85	14	6	400,40 xxxxx 1)	412,20 xxxxx 2)	412,20 xxxxx 1)	412,20 xxxxx 1)	412,20 xxxxx 1)
14,06 - 16,05	150	20	102	16	6	456,40 xxxxx 1)	468,00 xxxxx 2)	468,00 xxxxx 1)	468,00 xxxxx 1)	468,00 xxxxx 1)
16,06 - 18,05	150	20	102	18	6	486,20 xxxxx 1)	508,40 xxxxx 2)	508,40 xxxxx 1)	508,40 xxxxx 1)	508,40 xxxxx 1)
18,06 - 20,05	160	20	110	20	6	516,20 xxxxx 1)	535,60 xxxxx 2)	535,60 xxxxx 1)	535,60 xxxxx 1)	535,60 xxxxx 1)

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
Hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

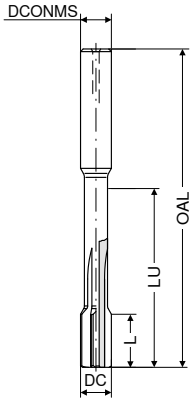
→ v_c Page 64+65

This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article No. 40 486 08820)!

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings
- ▲ tolerance: Ø 2,96–5,03 mm = +0,004 mm
- ▲ tolerance: Ø 5,97–12,03 mm = +0,005 mm





Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52M.57	52T.45	52K.65	52Q.17	52H.55
HA	HA	HA	HA	HA
straight flute	straight flute	straight flute	straight flute	straight flute
◁ 60°	◁ 45°	◁ 30°	◁ 60°	◁ 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole
NEW U4	NEW U4	NEW U4	NEW U4	NEW U4
Article no. 40 487 ...	Article no. 40 404 ...	Article no. 40 478 ...	Article no. 40 474 ...	Article no. 40 476 ...

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	EUR		EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm											
2,96 - 3,96	60	12	32	4	4	143,00	xxxxx[1]	148,20	xxxxx[2]	148,20	xxxxx[2]	148,20	xxxxx[1]	148,20	xxxxx[1]
3,97	60	12	32	4	4	122,70	03970	135,20	03970	148,20	03970[2]	148,20	03970[1]	148,20	03970[1]
3,98	60	12	32	4	4	122,70	03980	135,20	03980	148,20	03980[2]	148,20	03980[1]	148,20	03980[1]
3,99	60	12	32	4	4	122,70	03990	135,20	03990	148,20	03990[2]	148,20	03990[1]	148,20	03990[1]
4,00	60	12	32	4	4	122,70	04000	135,20	04000	148,20	04000[2]	148,20	04000[1]	169,00	04000[1]
4,01	60	12	32	4	4	122,70	04010	135,20	04010	148,20	04010[2]	148,20	04010[1]	148,20	04010[1]
4,02	60	12	32	4	4	122,70	04020	135,20	04020	148,20	04020[2]	148,20	04020[1]	148,20	04020[1]
4,03	60	12	32	4	4	122,70	04030	135,20	04030	148,20	04030[2]	148,20	04030[1]	148,20	04030[1]
4,04 - 4,05	60	12	32	4	4	143,00	xxxxx[1]	148,20	xxxxx[2]	148,20	xxxxx[2]	148,20	xxxxx[1]	148,20	xxxxx[1]
4,06 - 4,96	76	12	40	6	4	147,00	xxxxx[1]	152,20	xxxxx[2]	152,20	xxxxx[1]	152,20	xxxxx[1]	152,20	xxxxx[1]
4,97	76	12	40	6	4	125,80	04970	137,30	04970	152,20	04970[2]	152,20	04970[1]	152,20	04970[1]
4,98	76	12	40	6	4	125,80	04980	137,30	04980	152,20	04980[2]	152,20	04980[1]	152,20	04980[1]
4,99	76	12	40	6	4	125,80	04990	137,30	04990	152,20	04990[2]	152,20	04990[1]	152,20	04990[1]
5,00	76	12	40	6	4	125,80	05000	137,30	05000	152,20	05000[2]	152,20	05000[1]	173,00	05000[1]
5,01	76	12	40	6	4	125,80	05010	137,30	05010	152,20	05010[2]	152,20	05010[1]	152,20	05010[1]
5,02	76	12	40	6	4	125,80	05020	137,30	05020	152,20	05020[2]	152,20	05020[1]	152,20	05020[1]
5,03	76	12	40	6	4	125,80	05030	137,30	05030	152,20	05030[2]	152,20	05030[1]	152,20	05030[1]
5,04 - 5,96	76	12	40	6	4	147,00	xxxxx[1]	152,20	xxxxx[2]	152,20	xxxxx[2]	152,20	xxxxx[1]	152,20	xxxxx[1]
5,97	76	12	40	6	4	127,90	05970	140,40	05970	152,20	05970[2]	152,20	05970[1]	152,20	05970[1]
5,98	76	12	40	6	4	127,90	05980	140,40	05980	152,20	05980[2]	152,20	05980[1]	152,20	05980[1]
5,99	76	12	40	6	4	127,90	05990	140,40	05990	152,20	05990[2]	152,20	05990[1]	152,20	05990[1]
6,00	76	12	40	6	4	127,90	06000	140,40	06000	152,20	06000[2]	152,20	06000[1]	173,00	06000[1]
6,01	76	12	40	6	4	127,90	06010	140,40	06010	152,20	06010[2]	152,20	06010[1]	152,20	06010[1]
6,02	76	12	40	6	4	127,90	06020	140,40	06020	152,20	06020[2]	152,20	06020[1]	152,20	06020[1]
6,03	76	12	40	6	4	127,90	06030	140,40	06030	152,20	06030[2]	152,20	06030[1]	152,20	06030[1]
6,04 - 6,05	76	12	40	6	4	148,20	xxxxx[1]	152,20	xxxxx[2]	152,20	xxxxx[2]	152,20	xxxxx[1]	152,20	xxxxx[1]
6,06 - 7,96	101	16	65	8	6	158,60	xxxxx[1]	163,80	xxxxx[2]	163,80	xxxxx[1]	163,80	xxxxx[1]	163,80	xxxxx[1]
7,97	101	16	65	8	6	134,20	07970	147,70	07970	163,80	07970[2]	163,80	07970[1]	163,80	07970[1]
7,98	101	16	65	8	6	134,20	07980	147,70	07980	163,80	07980[2]	163,80	07980[1]	163,80	07980[1]

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

→ v_c Page 64+65

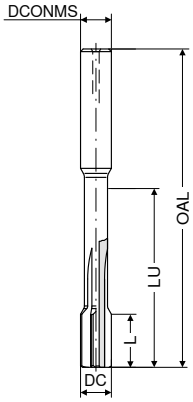
This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article no. 40 487 08820)!

Continued on next page

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings
- ▲ tolerance: Ø 2,96–5,03 mm = +0,004 mm
- ▲ tolerance: Ø 5,97–12,03 mm = +0,005 mm





Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52M.57	52T.45	52K.65	52Q.17	52H.55
HA	HA	HA	HA	HA
straight flute	straight flute	straight flute	straight flute	straight flute
◁ 60°	◁ 45°	◁ 30°	◁ 60°	◁ 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	NEW U4 Article no. 40 487 ...	NEW U4 Article no. 40 404 ...	NEW U4 Article no. 40 478 ...	NEW U4 Article no. 40 474 ...	NEW U4 Article no. 40 476 ...
mm	mm	mm	mm	mm		EUR	EUR	EUR	EUR	EUR
7,99	101	16	65	8	6	134,20 07990	147,70 07990	163,80 07990 2)	163,80 07990 1)	163,80 07990 1)
8,00	101	16	65	8	6	134,20 08000	147,70 08000	163,80 08000 2)	163,80 08000 1)	187,20 08000 1)
8,01	101	16	65	8	6	134,20 08010	147,70 08010	163,80 08010 2)	163,80 08010 1)	163,80 08010 1)
8,02	101	16	65	8	6	134,20 08020	147,70 08020	163,80 08020 2)	163,80 08020 1)	163,80 08020 1)
8,03	101	16	65	8	6	134,20 08030	147,70 08030	163,80 08030 2)	163,80 08030 1)	163,80 08030 1)
8,04 - 8,05	101	16	65	8	6	158,60 xxxxx 1)	163,80 xxxxx 2)	163,80 xxxxx 2)	163,80 xxxxx 1)	163,80 xxxxx 1)
8,06 - 9,96	108	16	68	10	6	201,60 xxxxx 1)	236,60 xxxxx 2)	236,60 xxxxx 1)	236,60 xxxxx 1)	236,60 xxxxx 1)
9,97	108	16	68	10	6	195,50 09970	215,30 09970	236,60 09970 2)	236,60 09970 1)	236,60 09970 1)
9,98	108	16	68	10	6	195,50 09980	215,30 09980	236,60 09980 2)	236,60 09980 1)	236,60 09980 1)
9,99	108	16	68	10	6	195,50 09990	215,30 09990	236,60 09990 2)	236,60 09990 1)	236,60 09990 1)
10,00	108	16	68	10	6	195,50 10000	215,30 10000	236,60 10000 2)	236,60 10000 1)	269,20 10000 1)
10,01	108	16	68	10	6	195,50 10010	215,30 10010	236,60 10010 2)	236,60 10010 1)	236,60 10010 1)
10,02	108	16	68	10	6	195,50 10020	215,30 10020	236,60 10020 2)	236,60 10020 1)	236,60 10020 1)
10,03	108	16	68	10	6	195,50 10030	215,30 10030	236,60 10030 2)	236,60 10030 1)	236,60 10030 1)
10,04 - 10,05	108	16	68	10	6	201,60 xxxxx 1)	236,60 xxxxx 2)	236,60 xxxxx 2)	236,60 xxxxx 1)	236,60 xxxxx 1)
10,06 - 11,96	130	20	85	12	6	305,60 xxxxx 1)	322,40 xxxxx 2)	322,40 xxxxx 1)	322,40 xxxxx 1)	322,40 xxxxx 1)
11,97	130	20	85	12	6	261,00 11970	287,00 11970	322,40 11970 2)	322,40 11970 1)	322,40 11970 1)
11,98	130	20	85	12	6	261,00 11980	287,00 11980	322,40 11980 2)	322,40 11980 1)	322,40 11980 1)
11,99	130	20	85	12	6	261,00 11990	287,00 11990	322,40 11990 2)	322,40 11990 1)	322,40 11990 1)
12,00	130	20	85	12	6	261,00 12000	287,00 12000	322,40 12000 2)	322,40 12000 1)	366,60 12000 1)
12,01	130	20	85	12	6	261,00 12010	287,00 12010	322,40 12010 2)	322,40 12010 1)	322,40 12010 1)
12,02	130	20	85	12	6	261,00 12020	287,00 12020	322,40 12020 2)	322,40 12020 1)	322,40 12020 1)
12,03	130	20	85	12	6	261,00 12030	287,00 12030	322,40 12030 2)	322,40 12030 1)	322,40 12030 1)
12,04 - 12,05	130	20	85	12	6	305,60 xxxxx 1)	322,40 xxxxx 2)	322,40 xxxxx 2)	322,40 xxxxx 1)	322,40 xxxxx 1)
12,06 - 14,05	130	20	85	14	6	355,00 xxxxx 1)	370,60 xxxxx 2)	370,60 xxxxx 1)	370,60 xxxxx 1)	370,60 xxxxx 1)
14,06 - 16,05	150	20	102	16	6	410,80 xxxxx 1)	427,80 xxxxx 2)	427,80 xxxxx 1)	427,80 xxxxx 1)	427,80 xxxxx 1)
16,06 - 18,05	150	20	102	18	6	435,60 xxxxx 1)	452,40 xxxxx 2)	452,40 xxxxx 1)	452,40 xxxxx 1)	452,40 xxxxx 1)
18,06 - 20,05	160	20	110	20	6	472,00 xxxxx 1)	486,20 xxxxx 2)	486,20 xxxxx 1)	486,20 xxxxx 1)	486,20 xxxxx 1)

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

→ v_c Page 64+65

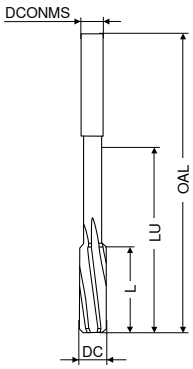
This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article no. 40 487 08820)!

NC machine reamers, DIN 8093-2B

- ▲ extremely irregular pitch
- ▲ Ø 2–3.5 mm with centres both ends
- ▲ Ø 4–13 mm with protected centres
- ▲ from Ø 22 mm, similar to DIN 8093-2B

NC

TiAlN





~HA
Left Hand Helix
Solid carbide

~HA
Left Hand Helix
Solid carbide

DC $_{H7}$	OAL	L	LU	DCONMS $_{h6}$	ZEFP	U4 Article no. 40 420 ... EUR		U4 Article no. 40 421 ... EUR	
mm	mm	mm	mm	mm					
2,0	50	12	18,5	3	4	43,32	020	52,14	020
2,5	60	16	29,0	3	4	43,32	025	52,14	025
3,0	65	17	33,0	4	6	45,08	030	54,44	030
3,2	65	18	33,0	4	6	45,08	032	54,44	032
3,5	75	18	43,0	4	6	45,08	035	54,44	035
4,0	75	19	43,0	4	6	54,01	040	65,14	040
4,5	80	21	39,0	6	6	54,01	045	65,14	045
5,0	93	23	52,0	6	6	60,62	050	72,97	050
5,5	93	26	53,0	6	6	60,62	055	72,97	055
6,0	93	26	53,0	6	6	65,24	060	78,70	060
6,5	101	28	61,0	6	6	65,24	065	78,70	065
7,0	109	31	68,0	8	6	72,30	070	87,29	070
7,5	109	31	68,0	8	6	72,30	075	87,29	075
8,0	117	33	77,0	8	6	84,31	080	101,50	080
8,5	117	33	77,0	8	6	84,31	085	101,50	085
9,0	125	36	80,0	10	6	91,92	090	111,30	090
9,5	125	36	80,0	10	6	91,92	095	111,30	095
10,0	133	38	88,0	10	6	98,31	100	119,10	100
10,5	133	38	88,0	10	6	98,31	105	119,10	105
11,0	142	41	97,0	10	6	126,80	110	153,20	110
12,0	151	44	100,0	12	6	126,80	120	153,20	120
13,0	151	44	100,0	12	6	124,60	130	151,00	130
14,0	160	47	106,0	16	6	124,60	140 [1]	151,00	140 [1]
15,0	162	50	108,0	16	6	131,30	150 [1]	159,90	150 [1]
16,0	170	52	116,0	16	6	137,80	160 [1]	164,20	160 [1]
17,0	175	52	121,0	18	6	140,00	170 [1]	168,60	170 [1]
18,0	182	52	128,0	18	6	141,00	180 [1]	169,70	180 [1]
19,0	189	52	133,0	20	6	147,80	190 [1]	177,50	190 [1]
20,0	195	52	139,0	20	6	147,80	200 [1]	179,60	200 [1]
22,0	160	25	105,0	20	6	147,80	220 [1]		
24,0	180	25	125,0	20	8	180,80	240 [1]		
25,0	180	25	125,0	20	8	180,80	250 [1]		
26,0	180	25	125,0	20	8	201,80	260 [1]		
28,0	180	25	119,0	25	8	212,80	280 [1]		
30,0	200	25	139,0	25	8	220,50	300 [1]		

Steel	●	●
Stainless steel		
Cast iron	○	●
Non ferrous metals	●	
Heat resistant alloys	○	
Hardened materials		

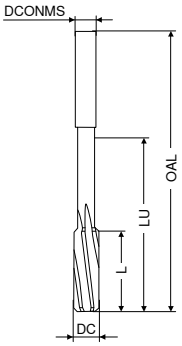
1) with carbide cutting edges

→ v_c Page 66+67

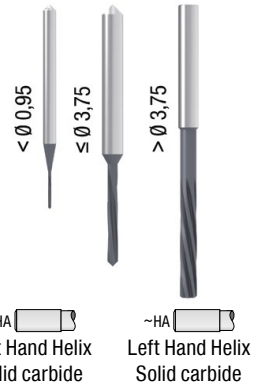
NC machine reamers, DIN 8093-2B

- ▲ 0,01 mm steps
- ▲ extremely irregular pitch
- ▲ Ø 0,59–0,95 mm similar to DIN 8093-B
- ▲ Ø 0,96–3,75 mm with centres both ends
- ▲ Ø 3,76–12,05 mm with protected centres

NC 100



TiAlN



Left Hand Helix
Solid carbide

Left Hand Helix
Solid carbide

DC +0,004	OAL	L	LU	DCONMS h6	ZEFP	U4 Article no. 40 430 ...		U4 Article no. 40 431 ...	
mm	mm	mm	mm	mm		EUR		EUR	
0,59 - 0,64	45	5	7,5	3	4	76,71	xxxxx[2]		
0,65 - 0,74	45	5	7,5	3	4	76,71	xxxxx[2]		
0,75 - 0,84	45	6	8,0	3	4	76,71	xxxxx[2]		
0,85 - 0,95	45	6	8,0	3	4	76,71	xxxxx[2]		
0,96	50	6	17,5	3	3	68,89	00960[2]		
0,97	50	6	17,5	3	3	68,89	00970[2]		
0,98	50	6	17,5	3	3	68,89	00980[1]		
0,99	50	6	17,5	3	3	68,89	00990[1]		
1,00	50	6	17,5	3	3	68,89	01000[1]	83,21	01000[1]
1,01	50	6	17,5	3	3	68,89	01010[1]	83,21	01010[1]
1,02	50	6	17,5	3	3	68,89	01020[1]	83,21	01020[1]
1,03	50	6	17,5	3	3	68,89	01030[1]	83,21	01030[1]
1,04 - 1,06	50	6	17,5	3	3	68,89	xxxxx[1]	83,21	xxxxx[1]
1,07 - 1,18	50	9	17,5	3	3	68,89	xxxxx[1]	83,21	xxxxx[1]
1,19 - 1,32	50	9	17,5	3	3	68,89	xxxxx[1]	83,21	xxxxx[1]
1,33 - 1,50	50	9	18,0	3	3	68,89	xxxxx[1]	83,21	xxxxx[1]
1,51 - 1,70	50	10	18,0	3	3	68,89	xxxxx[1]	83,21	xxxxx[1]
1,71 - 1,90	50	11	18,5	3	4	68,89	xxxxx[1]	83,21	xxxxx[1]
1,91 - 1,97	50	12	18,5	3	4	77,92	xxxxx[1]	94,12	xxxxx[1]
1,98	50	12	18,5	3	4	77,92	01980	94,12	01980
1,99	50	12	18,5	3	4	77,92	01990	94,12	01990
2,00	50	12	18,5	3	4	77,92	02000	82,12	02000
2,01	50	12	18,5	3	4	77,92	02010	94,12	02010
2,02	50	12	18,5	3	4	77,92	02020	94,12	02020
2,03	50	12	18,5	3	4	77,92	02030	94,12	02030
2,04 - 2,12	50	12	18,5	3	4	77,92	xxxxx[1]	94,12	xxxxx[1]
2,13 - 2,36	50	12	18,5	3	4	77,92	xxxxx[1]	94,12	xxxxx[1]
2,37 - 2,47	60	16	29,0	3	4	59,96	xxxxx[1]	72,42	xxxxx[1]
2,48	60	16	29,0	3	4	59,96	02480	72,42	02480
2,49	60	16	29,0	3	4	59,96	02490	72,42	02490
2,50	60	16	29,0	3	4	59,96	02500	72,42	02500
2,51	60	16	29,0	3	4	59,96	02510	72,42	02510
2,52	60	16	29,0	3	4	59,96	02520	72,42	02520
2,53	60	16	29,0	3	4	59,96	02530	72,42	02530
2,54 - 2,65	60	16	29,0	3	4	59,96	xxxxx[1]	72,42	xxxxx[1]
2,66 - 2,80	65	17	33,0	4	6	59,96	xxxxx[1]	72,42	xxxxx[1]
2,81 - 2,96	65	17	33,0	4	6	51,47	xxxxx[1]	62,26	xxxxx[1]
2,97	65	17	33,0	4	6	51,47	02970	62,26	02970
2,98	65	17	33,0	4	6	51,47	02980	62,26	02980
2,99	65	17	33,0	4	6	51,47	02990	62,26	02990
3,00	65	17	33,0	4	6	45,08	03000	54,44	03000
3,01	65	17	33,0	4	6	51,47	03010	62,26	03010
3,02	65	17	33,0	4	6	51,47	03020	62,26	03020
3,03	65	17	33,0	4	6	51,47	03030	62,26	03030
3,04 - 3,35	65	18	33,0	4	6	60,62	xxxxx[1]	72,97	xxxxx[1]
3,36 - 3,75	75	18	43,0	4	6	60,62	xxxxx[1]	72,97	xxxxx[1]
3,76 - 3,96	75	19	43,0	4	6	60,62	xxxxx[1]	72,97	xxxxx[1]
3,97	75	19	43,0	4	6	60,62	03970	72,97	03970
3,98	75	19	43,0	4	6	60,62	03980	72,97	03980
3,99	75	19	43,0	4	6	60,62	03990	72,97	03990
4,00	75	19	43,0	4	6	54,01	04000	65,14	04000
4,01	75	19	43,0	4	6	60,62	04010	72,97	04010
4,02	75	19	43,0	4	6	60,62	04020	72,97	04020
4,03	75	19	43,0	4	6	60,62	04030	72,97	04030
4,04 - 4,25	75	19	43,0	4	6	60,62	xxxxx[1]	72,97	xxxxx[1]
4,26 - 4,75	80	21	39,0	6	6	68,89	xxxxx[1]	80,24	xxxxx[1]
4,76 - 4,96	93	23	52,0	6	6	68,89	xxxxx[1]	80,24	xxxxx[1]
4,97	93	23	52,0	6	6	68,89	04970	80,24	04970
4,98	93	23	52,0	6	6	68,89	04980	80,24	04980
4,99	93	23	52,0	6	6	68,89	04990	80,24	04990
5,00	93	23	52,0	6	6	60,62	05000	72,97	05000
5,01	93	23	52,0	6	6	68,89	05010	80,24	05010
5,02	93	23	52,0	6	6	68,89	05020	80,24	05020
5,03	93	23	52,0	6	6	68,89	05030	80,24	05030
5,04 - 5,30	93	23	52,0	6	6	68,89	xxxxx[1]	80,24	xxxxx[1]
5,31 - 5,96	93	26	53,0	6	6	75,06	xxxxx[1]	87,29	xxxxx[1]
5,97	93	26	53,0	6	6	74,51	05970	87,29	05970
5,98	93	26	53,0	6	6	74,51	05980	87,29	05980
5,99	93	26	53,0	6	6	74,51	05990	87,29	05990
6,00	93	26	53,0	6	6	65,24	06000	78,70	06000
6,01	93	26	53,0	6	6	75,06	06010	87,29	06010
6,02	93	26	53,0	6	6	75,06	06020	87,29	06020
6,03	93	26	53,0	6	6	75,06	06030	87,29	06030
6,04 - 6,70	101	28	61,0	6	6	90,15	xxxxx[1]	108,80	xxxxx[1]
6,71 - 7,50	109	31	68,0	8	6	90,15	xxxxx[1]	108,80	xxxxx[1]
7,51 - 7,96	117	33	77,0	8	6	90,15	xxxxx[1]	108,80	xxxxx[1]
7,97	117	33	77,0	8	6	90,15	07970	108,80	07970
7,98	117	33	77,0	8	6	90,15	07980	108,80	07980
7,99	117	33	77,0	8	6	90,15	07990	108,80	07990
8,00	117	33	77,0	8	6	84,31	08000	101,50	08000
8,01	117	33	77,0	8	6	90,15	08010	108,80	08010
8,02	117	33	77,0	8	6	90,15	08020	108,80	08020
8,03	117	33	77,0	8	6	90,15	08030	108,80	08030
8,04	117	33	77,0	8	6	90,15	08040	108,80	08040
8,05 - 8,50	117	33	77,0	8	6	105,50	xxxxx[1]	126,80	xxxxx[1]
8,51 - 9,04	125	36	80,0	10	6	105,50	xxxxx[1]	126,80	xxxxx[1]
9,05 - 9,50	125	36	80,0	10	6	105,50	xxxxx[1]	126,80	xxxxx[1]
9,51 - 9,96	133	38	88,0	10	6	105,50	xxxxx[1]	126,80	xxxxx[1]
9,97	133	38	88,0	10	6	105,50	09970	126,80	09970
9,98	133	38	88,0	10	6	105,50	09980	126,80	09980
9,99	133	38	88,0	10	6	105,50	09990	126,80	09990
10,00	133	38	88,0	10	6	98,31	10000	119,10	10000
10,01	133	38	88,0	10	6	105,50	10010	126,80	10010
10,02	133	38	88,0	10	6	105,50	10020	126,80	10020
10,03	133	38	88,0	10	6	105,50	10030	126,80	10030
10,04	133	38	88,0	10	6	105,50	10040	126,80	10040
10,05	133	38	88,0	10	6	105,50	10050	126,80	10050
10,06 - 10,60	133	38	88,0	10	6	126,80	xxxxx[1]	153,20	xxxxx[1]
10,61 - 11,80	142	41	97,0	10	6	126,80	xxxxx[1]	153,20	xxxxx[1]
11,81 - 11,96	151	44	100,0	12	6	126,80	xxxxx[1]	153,20	xxxxx[1]
11,97	151	44	100,0	12	6	126,80	11970	153,20	11970
11,98	151	44	100,0	12	6	126,80	11980	153,20	11980
11,99	151	44	100,0	12	6	126,80	11990	153,20	11990
12,00	151	44	100,0	12	6	120,10	12000	144,40	12000
12,01	151	44	100,0	12	6	126,80	12010	153,20	12010
12,02	151	44	100,0	12	6	126,80	12020	153,20	12020
12,03	151	44	100,0	12	6	126,80	12030	153,20	12030
12,04	151	44	100,0	12	6	126,80	12040	153,20	12040
12,05	151	44	100,0	12	6	126,80	12050	153,20	12050

	U4 Article no. 40 430 ...	U4 Article no. 40 431 ...
Steel	●	●
Stainless steel		
Cast iron	○	●
Non ferrous metals	●	
Heat resistant alloys	○	
Hardened materials		

→ v_c Page 66+67

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

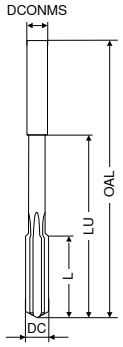
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days / Minimum order 3 pieces

This tool concept permits numerous tolerances.
Please refer to the table on → **Page 75** for tolerances covered.
For xxxxx please indicate required Ø in the order
(e.g. Ø 8,05 mm → Article no. 40 430 08050)!

Machine reamers, similar to DIN 8093-A / -B

▲ extremely irregular pitch

N





Left Hand Helix
Solid carbide



straight flute
Solid carbide

DC $_{H7}$	OAL	L	LU	DCONMS $_{h7}$	ZEFP	U4 Article no. 40 410 ...		U4 Article no. 40 400 ...	
mm	mm	mm	mm	mm		EUR		EUR	
2,0	49	11	31	2,0	4	22,48	020	22,48	020
2,1	49	11	31	2,0	4	26,88	021	26,88	021
2,2	53	12	35	2,2	4	26,88	022	26,88	022
2,3	53	12	35	2,2	4	26,88	023	26,88	023
2,4	57	14	34	2,5	4	26,88	024	26,88	024
2,5	57	14	34	2,5	4	24,14	025	24,14	025
2,6	57	14	34	2,5	4	28,88	026	28,88	026
2,7	61	15	36	3,0	4	28,88	027	28,88	027
2,8	61	15	36	3,0	4	28,88	028	28,88	028
2,9	61	15	36	3,0	4	28,88	029	28,88	029
3,0	61	15	36	3,0	4	26,01	030	26,01	030
3,1	61	15	36	3,0	4	31,19	031	31,19	031
3,2	70	18	40	3,5	4	31,19	032	31,19	032
3,3	70	18	40	3,5	4	31,19	033	31,19	033
3,4	70	18	40	3,5	4	31,19	034	31,19	034
3,5	70	18	40	3,5	4	29,65	035	29,65	035
3,6	70	18	40	3,5	4	35,60	036	35,60	036
3,7	70	18	40	3,5	4	35,60	037	35,60	037
3,8	75	19	43	4,0	4	35,60	038	35,60	038
3,9	75	19	43	4,0	4	35,60	039	35,60	039
4,0	75	19	43	4,0	4	31,86	040	31,86	040
4,1	75	19	43	4,0	4	38,36	041	38,36	041
4,2	75	19	43	4,0	4	38,36	042	38,36	042
4,3	75	21	42	4,5	4	38,36	043	38,36	043
4,4	75	21	42	4,5	4	38,36	044	38,36	044
4,5	75	21	42	4,5	4	34,72	045	34,72	045
4,6	75	21	42	4,5	4	41,66	046	41,66	046
4,7	75	21	42	4,5	4	41,66	047	41,66	047
4,8	86	23	52	5,0	4	41,66	048	41,66	048
4,9	86	23	52	5,0	4	41,66	049	41,66	049
5,0	86	23	52	5,0	4	39,12	050	39,12	050
5,1	86	23	52	5,0	4	45,08	051	45,08	051
5,2	86	23	52	5,0	4	45,08	052	45,08	052
5,3	86	23	52	5,0	6	45,08	053	45,08	053
5,4	93	26	57	5,6	6	45,08	054	45,08	054
5,5	93	26	57	5,6	6	41,43	055	41,43	055
5,6	93	26	57	5,6	6	47,72	056	47,72	056
5,7	93	26	57	5,6	6	47,72	057	47,72	057
5,8	93	26	57	5,6	6	47,72	058	47,72	058
5,9	93	26	57	5,6	6	47,72	059	47,72	059
6,0	93	26	57	5,6	6	49,60	060	49,60	060
6,1	93	26	57	5,6	6	57,09	061	57,09	061
6,2	93	26	57	5,6	6	57,09	062	57,09	062
6,3	101	28	63	6,3	6	57,09	063	57,09	063
6,4	101	28	63	6,3	6	57,09	064	57,09	064
6,5	101	28	63	6,3	6	55,55	065	55,55	065
6,6	101	28	63	6,3	6	64,03	066	64,03	066
6,7	101	28	63	6,3	6	64,03	067	64,03	067
6,8	109	31	69	7,1	6	64,03	068	64,03	068
6,9	109	31	69	7,1	6	64,03	069	64,03	069
7,0	109	31	69	7,1	6	62,16	070	62,16	070
7,1	109	31	69	7,1	6	71,42	071	71,42	071
7,2	109	31	69	7,1	6	71,42	072	71,42	072
7,3	109	31	69	7,1	6	71,42	073	71,42	073
7,4	109	31	69	7,1	6	71,42	074	71,42	074
7,5	109	31	69	7,1	6	67,24	075	67,24	075
7,6	117	33	75	8,0	6	77,37	076	77,37	076
7,7	117	33	75	8,0	6	77,37	077	77,37	077
7,8	117	33	75	8,0	6	77,37	078	77,37	078
7,9	117	33	75	8,0	6	77,37	079	77,37	079
8,0	117	33	75	8,0	6	71,42	080	71,42	080
8,1	117	33	75	8,0	6	78,70	081	78,70	081
8,2	117	33	75	8,0	6	78,70	082	78,70	082
8,3	117	33	75	8,0	6	78,70	083	78,70	083
8,4	117	33	75	8,0	6	78,70	084	78,70	084
8,5	117	33	75	8,0	6	77,59	085	77,59	085
8,6	125	36	81	9,0	6	85,20	086	85,20	086
8,7	125	36	81	9,0	6	85,20	087	85,20	087
8,8	125	36	81	9,0	6	85,20	088	85,20	088
8,9	125	36	81	9,0	6	85,20	089	85,20	089
9,0	125	36	81	9,0	6	83,10	090	83,10	090
9,1	125	36	81	9,0	6	91,37	091	91,37	091
9,2	125	36	81	9,0	6	91,37	092	91,37	092
9,3	125	36	81	9,0	6	91,37	093	91,37	093
9,4	125	36	81	9,0	6	91,37	094	91,37	094
9,5	125	36	81	9,0	6	89,06	095	89,06	095
9,6	133	38	87	10,0	6	97,98	096	97,98	096
9,7	133	38	87	10,0	6	97,98	097	97,98	097
9,8	133	38	87	10,0	6	97,98	098	97,98	098
9,9	133	38	87	10,0	6	97,98	099	97,98	099
10,0	133	38	87	10,0	6	95,89	100	95,89	100
10,1	133	38	87	10,0	6	105,60	101	105,60	101
10,2	133	38	87	10,0	6	105,60	102	105,60	102
10,3	133	38	87	10,0	6	105,60	103	105,60	103
10,4	133	38	87	10,0	6	105,60	104	105,60	104
10,5	133	38	87	10,0	6	100,40	105	100,40	105
10,6	133	38	87	10,0	6	110,20	106	110,20	106
10,7	142	41	96	10,0	6	110,20	107	110,20	107
10,8	142	41	96	10,0	6	110,20	108	110,20	108
10,9	142	41	96	10,0	6	110,20	109	110,20	109
11,0	142	41		10,0	6	108,60	110	108,60	110
11,1	142	41		10,0	6	120,10	111	120,10	111
11,2	142	41		10,0	6	120,10	112	120,10	112
11,3	142	41		10,0	6	120,10	113	120,10	113
11,4	142	41		10,0	6	120,10	114	120,10	114
11,5	142	41		10,0	6	115,80	115	115,80	115
11,6	142	41		10,0	6	126,80	116	126,80	116
11,7	142	41		10,0	6	126,80	117	126,80	117
11,8	142	41		10,0	6	126,80	118	126,80	118
11,9	151	44		10,0	6	126,80	119	126,80	119
12,0	151	44		10,0	6	124,60	120	124,60	120

Steel	●	●
Stainless steel		
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys	○	○
Hardened materials		

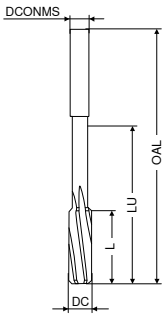
→ v_c Page 66+67

4

NC machine reamers, DIN 212-3-B

▲ maximum radial run-out accuracy

NC





Left Hand Helix
HSS-E

DC H7	OAL	L	LU	DCONMS h6	ZEFP	U2 Article no. 40 110 ... EUR	
mm	mm	mm	mm	mm			
1,5	40	8	15,5	2	3	10,34	015
1,6	43	9	16,0	2	3	11,55	016
1,7	43	9	16,0	2	3	11,55	017
1,8	46	10	19,0	2	4	11,55	018
1,9	46	10	19,0	2	4	11,55	019
2,0	49	11	21,0	2	4	10,05	020
2,1	49	11	21,0	2	4	12,08	021
2,2	53	12	22,0	3	4	12,08	022
2,3	53	12	22,0	3	4	12,08	023
2,4	57	14	26,0	3	4	12,08	024
2,5	57	14	26,0	3	4	10,05	025
2,6	57	14	26,0	3	4	12,72	026
2,7	61	15	30,0	3	6	12,72	027
2,8	61	15	30,0	3	6	12,72	028
2,9	61	15	30,0	3	6	12,72	029
3,0	61	15	30,0	3	6	9,18	030
3,1	65	16	34,0	4	6	12,08	031
3,2	65	16	34,0	4	6	12,08	032
3,3	65	16	34,0	4	6	12,08	033
3,4	70	18	39,0	4	6	12,08	034
3,5	70	18	39,0	4	6	10,81	035
3,6	70	18	39,0	4	6	13,46	036
3,7	70	18	39,0	4	6	13,46	037
3,8	75	19	44,0	4	6	13,46	038
3,9	75	19	44,0	4	6	9,76	039
4,0	75	19	44,0	4	6	10,05	040
4,1	75	19	44,0	4	6	12,62	041
4,2	75	19	44,0	4	6	12,62	042
4,3	80	21	48,0	5	6	12,62	043
4,4	80	21	48,0	5	6	12,62	044
4,5	80	21	48,0	5	6	10,81	045
4,6	80	21	48,0	5	6	13,56	046
4,7	80	21	48,0	5	6	13,56	047
4,8	86	23	54,0	5	6	13,56	048
4,9	86	23	54,0	5	6	13,56	049
5,0	86	23	54,0	5	6	10,34	050
5,1	86	23	54,0	5	6	13,56	051
5,2	86	23	54,0	5	6	13,56	052
5,3	86	23	54,0	5	6	13,56	053
5,4	93	26	53,0	6	6	13,56	054
5,5	93	26	53,0	6	6	12,62	055
5,6	93	26	53,0	6	6	13,56	056
5,7	93	26	53,0	6	6	13,56	057
5,8	93	26	53,0	6	6	13,56	058
5,9	93	26	53,0	6	6	13,56	059
6,0	93	26	53,0	6	6	11,13	060
6,1	101	28	61,0	6	6	13,56	061
6,2	101	28	61,0	6	6	13,56	062
6,3	101	28	61,0	6	6	13,56	063
6,4	101	28	61,0	6	6	13,56	064
6,5	101	28	61,0	6	6	13,15	065
6,6	101	28	61,0	6	6	13,56	066
6,7	101	28	61,0	6	6	13,56	067
6,8	109	31	69,0	8	6	13,56	068
6,9	109	31	69,0	8	6	13,56	069
7,0	109	31	69,0	8	6	13,15	070
7,1	109	31	69,0	8	6	15,37	071
7,2	109	31	69,0	8	6	15,37	072
7,3	109	31	69,0	8	6	15,37	073
7,4	109	31	69,0	8	6	15,37	074
7,5	109	31	69,0	8	6	15,15	075
7,6	117	33	77,0	8	6	16,11	076
7,7	117	33	77,0	8	6	16,11	077
7,8	117	33	77,0	8	6	16,11	078
7,9	117	33	77,0	8	6	16,11	079
8,0	117	33	77,0	8	6	13,56	080
8,1	117	33	77,0	8	6	18,65	081
8,2	117	33	77,0	8	6	18,65	082
8,3	117	33	77,0	8	6	18,65	083
8,4	117	33	77,0	8	6	18,65	084
8,5	117	33	77,0	8	6	17,27	085
8,6	125	36	81,0	10	6	17,48	086
8,7	125	36	81,0	10	6	17,48	087
8,8	125	36	81,0	10	6	17,48	088
8,9	125	36	81,0	10	6	17,48	089
9,0	125	36	81,0	10	6	15,79	090
9,1	125	36	81,0	10	6	18,12	091
9,2	125	36	81,0	10	6	18,12	092
9,3	125	36	81,0	10	6	18,12	093
9,4	125	36	81,0	10	6	18,12	094
9,5	125	36	81,0	10	6	17,60	095
9,6	133	38	89,0	10	6	18,44	096
9,7	133	38	89,0	10	6	18,44	097
9,8	133	38	89,0	10	6	18,44	098
9,9	133	38	89,0	10	6	18,44	099
10,0	133	38	89,0	10	6	16,11	100
11,0	142	41	98,0	10	6	22,57	110
12,0	151	44	106,0	10	6	23,52	120
13,0	151	44	106,0	10	6	26,18	130
14,0	160	47	110,0	14	8	27,13	140
15,0	162	50	112,0	14	8	27,77	150
16,0	170	52	120,0	14	8	28,83	160
17,0	175	54	125,0	14	8	34,44	170
18,0	182	56	132,0	14	8	35,39	180
19,0	189	58	136,0	16	8	41,12	190
20,0	195	60	142,0	16	8	39,53	200

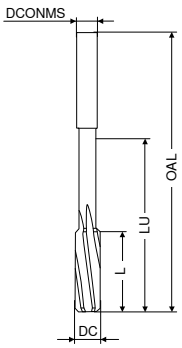
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

NC machine reamers, DIN 212-3-B

- 0,01 mm steps
- tolerance: Ø 0,95–5,50 mm = +0,004 mm
- tolerance: Ø 5,51–12,00 mm = +0,005 mm

NC 100





A
Left Hand Helix
HSS-E

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	U2 Article no. 40 115 ...	
mm	mm	mm	mm	mm		EUR	
0,95 - 0,99	34	5,5	12,5	1	3	15,90	xxxxx[1]
1,00	34	5,5	12,5	1	3	15,15	01000
1,01	34	5,5	12,5	1	3	15,15	01010
1,02	34	5,5	12,5	1	3	15,15	01020
1,03 - 1,06	34	5,5	12,5	1	3	15,90	xxxxx[1]
1,07 - 1,18	36	6,5	13,0	1	3	15,90	xxxxx[1]
1,19 - 1,32	38	7,5	14,0	2	3	15,90	xxxxx[1]
1,33 - 1,41	40	8,0	15,5	2	3	15,90	xxxxx[1]
1,42 - 1,49	40	8,0	15,5	2	3	15,90	xxxxx[1]
1,50	40	8,0	15,5	2	3	13,15	01500
1,51	43	9,0	16,0	2	3	13,15	01510
1,52	43	9,0	16,0	2	3	13,15	01520
1,53 - 1,70	43	9,0	16,0	2	3	15,90	xxxxx[1]
1,71 - 1,90	46	10,0	19,0	2	4	15,90	xxxxx[1]
1,91 - 1,96	49	11,0	21,0	2	4	15,90	xxxxx[1]
1,97	49	11,0	21,0	2	4	13,15	01970
1,98	49	11,0	21,0	2	4	13,15	01980
1,99	49	11,0	21,0	2	4	13,15	01990
2,00	49	11,0	21,0	2	4	11,66	02000
2,01	49	11,0	21,0	2	4	11,66	02010
2,02	49	11,0	21,0	2	4	11,66	02020
2,03 - 2,12	49	11,0	21,0	2	4	15,90	xxxxx[1]
2,13 - 2,36	53	12,0	22,0	3	4	15,90	xxxxx[1]
2,37 - 2,47	57	14,0	26,0	3	4	15,90	xxxxx[1]
2,48	57	14,0	26,0	3	4	13,35	02480
2,49	57	14,0	26,0	3	4	13,35	02490
2,50	57	14,0	26,0	3	4	11,34	02500
2,51	57	14,0	26,0	3	4	11,34	02510
2,52	57	14,0	26,0	3	4	11,34	02520
2,53 - 2,65	57	14,0	26,0	3	4	15,90	xxxxx[1]
2,66 - 2,96	61	15,0	30,0	3	6	15,90	xxxxx[1]
2,97	61	15,0	30,0	3	6	13,68	02970
2,98	61	15,0	30,0	3	6	13,68	02980
2,99	61	15,0	30,0	3	6	13,68	02990
3,00	61	15,0	30,0	3	6	10,15	03000
3,01	61	15,0	30,0	3	6	10,15	03010
3,02	61	15,0	30,0	3	6	10,15	03020
3,03	61	15,0	30,0	3	6	15,90	03030[1]
3,04 - 3,35	65	16,0	34,0	4	6	15,90	xxxxx[1]
3,36 - 3,75	70	18,0	39,0	4	6	15,90	xxxxx[1]
3,76 - 3,96	75	19,0	44,0	4	6	15,90	xxxxx[1]
3,97	75	19,0	44,0	4	6	11,13	03970
3,98	75	19,0	44,0	4	6	11,13	03980
3,99	75	19,0	44,0	4	6	11,13	03990
4,00	75	19,0	44,0	4	6	11,13	04000
4,01	75	19,0	44,0	4	6	11,13	04010
4,02	75	19,0	44,0	4	6	11,13	04020
4,03 - 4,25	75	19,0	44,0	4	6	15,90	xxxxx[1]
4,26 - 4,75	80	21,0	48,0	5	6	15,90	xxxxx[1]
4,76 - 4,96	86	23,0	54,0	5	6	15,90	xxxxx[1]
4,97	86	23,0	54,0	5	6	12,08	04970
4,98	86	23,0	54,0	5	6	12,08	04980
4,99	86	23,0	54,0	5	6	12,08	04990
5,00	86	23,0	54,0	5	6	12,08	05000
5,01	86	23,0	54,0	5	6	12,08	05010
5,02	86	23,0	54,0	5	6	12,08	05020
5,03 - 5,30	86	23,0	54,0	5	6	15,90	xxxxx[1]
5,31 - 5,60	93	26,0	53,0	6	6	15,90	xxxxx[1]
5,61 - 5,96	93	26,0	53,0	6	6	15,90	xxxxx[1]
5,97	93	26,0	53,0	6	6	13,35	05970
5,98	93	26,0	53,0	6	6	13,35	05980
5,99	93	26,0	53,0	6	6	13,35	05990
6,00	93	26,0	53,0	6	6	13,35	06000
6,01	93	26,0	53,0	6	6	13,35	06010
6,02	93	26,0	53,0	6	6	13,35	06020
6,03	93	26,0	53,0	6	6	15,90	06030[1]
6,04 - 6,70	101	28,0	61,0	6	6	15,90	xxxxx[1]
6,71 - 7,20	109	31,0	69,0	8	6	15,90	xxxxx[1]
7,21 - 7,50	109	31,0	69,0	8	6	15,90	xxxxx[1]
7,51 - 7,96	117	33,0	77,0	8	6	21,20	xxxxx[1]
7,97	117	33,0	77,0	8	6	14,31	07970
7,98	117	33,0	77,0	8	6	14,31	07980
7,99	117	33,0	77,0	8	6	14,31	07990
8,00	117	33,0	77,0	8	6	14,31	08000
8,01	117	33,0	77,0	8	6	14,31	08010
8,02	117	33,0	77,0	8	6	14,31	08020
8,03 - 8,20	117	33,0	77,0	8	6	21,20	xxxxx[1]
8,21 - 8,50	117	33,0	77,0	8	6	21,20	xxxxx[1]
8,51 - 8,99	125	36,0	81,0	10	6	21,20	xxxxx[1]
9,00	125	36,0	81,0	10	6	18,23	09000
9,01	125	36,0	81,0	10	6	18,23	09010
9,02	125	36,0	81,0	10	6	18,23	09020
9,03 - 9,20	125	36,0	81,0	10	6	21,20	xxxxx[1]
9,21 - 9,50	125	36,0	81,0	10	6	21,20	xxxxx[1]
9,51 - 9,96	133	38,0	89,0	10	6	31,58	xxxxx[1]
9,97	133	38,0	89,0	10	6	18,23	09970
9,98	133	38,0	89,0	10	6	18,23	09980
9,99	133	38,0	89,0	10	6	18,23	09990
10,00	133	38,0	89,0	10	6	18,23	10000
10,01	133	38,0	89,0	10	6	18,23	10010
10,02	133	38,0	89,0	10	6	18,23	10020
10,03 - 10,20	133	38,0	89,0	10	6	31,58	xxxxx[1]
10,21 - 10,60	133	38,0	89,0	10	6	31,58	xxxxx[1]
10,61 - 11,20	142	41,0	98,0	10	6	31,58	xxxxx[1]
11,21 - 11,80	142	41,0	98,0	10	6	31,58	xxxxx[1]
11,81 - 11,96	151	44,0	106,0	10	6	31,58	xxxxx[1]
11,97	151	44,0	106,0	10	6	26,18	11970
11,98	151	44,0	106,0	10	6	26,18	11980
11,99	151	44,0	106,0	10	6	26,18	11990
12,00	151	44,0	106,0	10	6	26,18	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

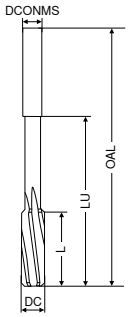
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days / Minimum order 5 pieces

This tool concept permits numerous tolerances.
Please refer to the table on → **Page 75** for tolerances covered.
For xxxxx please indicate required Ø in the order
(e.g. Ø 8,03 mm → Article no. 40 115 08030)!

4

Machine reamers, DIN 212-B

N





Left Hand Helix
HSS-E

DC H7	OAL	L	LU	DCONMS h9	ZEFP	U2 Article no. 40 150 ... EUR	
mm	mm	mm	mm	mm			
1,0	34	5,5	15,0	1,0	3	18,01	010
1,1	36	6,5	15,5	1,1	3	18,97	011
1,2	38	7,5	16,5	1,2	3	17,60	012
1,3	38	7,5	16,5	1,2	3	19,60	013
1,4	40	8,0	18,0	1,4	3	16,11	014
1,5	40	8,0	18,0	1,5	3	14,94	015
1,6	43	9,0	20,0	1,6	3	16,42	016
1,7	43	9,0	20,0	1,6	3	16,42	017
1,8	46	10,0	22,0	1,8	4	16,42	018
1,9	46	10,0	22,0	1,8	4	16,42	019
2,0	49	11,0	24,0	2,0	4	14,62	020
2,1	49	11,0	24,0	2,0	4	17,60	021
2,2	53	12,0	25,0	2,2	4	17,60	022
2,3	53	12,0	25,0	2,2	4	17,60	023
2,4	57	14,0	29,0	2,5	4	17,60	024
2,5	57	14,0	29,0	2,5	4	14,62	025
2,6	57	14,0	29,0	2,5	4	18,23	026
2,7	61	15,0	33,0	2,8	6	18,23	027
2,8	61	15,0	33,0	2,8	6	18,23	028
2,9	61	15,0	36,0	3,0	6	18,23	029
3,0	61	15,0	36,0	3,0	6	13,03	030
3,1	65	16,0	36,0	3,2	6	17,27	031
3,2	65	16,0	36,0	3,2	6	17,27	032
3,3	65	16,0	36,0	3,2	6	17,27	033
3,4	70	18,0	41,0	3,5	6	17,27	034
3,5	70	18,0	41,0	3,5	6	15,26	035
3,6	70	18,0	41,0	3,5	6	19,18	036
3,7	70	18,0	41,0	3,5	6	19,18	037
3,8	75	19,0	44,0	4,0	6	19,18	038
3,9	75	19,0	44,0	4,0	6	14,09	039
4,0	75	19,0	44,0	4,0	6	14,62	040
4,1	75	19,0	44,0	4,0	6	18,01	041
4,2	75	19,0	44,0	4,0	6	18,01	042
4,3	80	21,0	48,0	4,5	6	18,01	043
4,4	80	21,0	48,0	4,5	6	18,01	044
4,5	80	21,0	48,0	4,5	6	15,26	045
4,6	80	21,0	48,0	4,5	6	19,60	046
4,7	80	21,0	48,0	4,5	6	19,60	047
4,8	86	23,0	53,0	5,0	6	19,60	048
4,9	86	23,0	53,0	5,0	6	19,60	049
5,0	86	23,0	53,0	5,0	6	14,94	050
5,1	86	23,0	53,0	5,0	6	19,60	051
5,2	86	23,0	53,0	5,0	6	19,60	052
5,3	86	23,0	53,0	5,0	6	19,60	053
5,4	93	26,0	58,0	5,6	6	19,60	054
5,5	93	26,0	58,0	5,6	6	18,01	055
5,6	93	26,0	58,0	5,6	6	19,60	056
5,7	93	26,0	58,0	5,6	6	19,60	057
5,8	93	26,0	58,0	5,6	6	19,60	058
5,9	93	26,0	58,0	5,6	6	19,60	059
6,0	93	26,0	58,0	5,6	6	15,58	060
6,1	101	28,0	64,0	6,3	6	19,60	061
6,2	101	28,0	64,0	6,3	6	19,60	062
6,3	101	28,0	64,0	6,3	6	19,60	063
6,4	101	28,0	64,0	6,3	6	19,60	064
6,5	101	28,0	64,0	6,3	6	18,97	065
6,6	101	28,0	64,0	6,3	6	19,60	066
6,7	101	28,0	64,0	6,3	6	19,60	067
6,8	109	31,0	70,0	7,1	6	19,93	068
6,9	109	31,0	70,0	7,1	6	19,93	069
7,0	109	31,0	70,0	7,1	6	18,97	070
7,1	109	31,0	70,0	7,1	6	21,93	071
7,2	109	31,0	70,0	7,1	6	21,93	072
7,3	109	31,0	70,0	7,1	6	21,93	073
7,4	109	31,0	70,0	7,1	6	21,93	074
7,5	109	31,0	70,0	7,1	6	21,20	075
7,6	117	33,0	76,0	8,0	6	22,99	076
7,7	117	33,0	76,0	8,0	6	22,99	077
7,8	117	33,0	76,0	8,0	6	22,99	078
7,9	117	33,0	76,0	8,0	6	22,99	079
8,0	117	33,0	76,0	8,0	6	19,60	080
8,1	117	33,0	76,0	8,0	6	27,24	081
8,2	117	33,0	76,0	8,0	6	27,24	082
8,3	117	33,0	76,0	8,0	6	27,24	083
8,4	117	33,0	76,0	8,0	6	27,24	084
8,5	117	33,0	76,0	8,0	6	24,69	085
8,6	125	36,0	82,0	9,0	6	25,01	086
8,7	125	36,0	82,0	9,0	6	25,01	087
8,8	125	36,0	82,0	9,0	6	25,01	088
8,9	125	36,0	82,0	9,0	6	25,01	089
9,0	125	36,0	82,0	9,0	6	22,57	090
9,1	125	36,0	82,0	9,0	6	25,97	091
9,2	125	36,0	82,0	9,0	6	25,97	092
9,3	125	36,0	82,0	9,0	6	25,97	093
9,4	125	36,0	82,0	9,0	6	25,97	094
9,5	125	36,0	82,0	9,0	6	25,22	095
9,6	133	38,0	88,0	10,0	6	27,02	096
9,7	133	38,0	88,0	10,0	6	27,02	097
9,8	133	38,0	88,0	10,0	6	27,02	098
9,9	133	38,0	88,0	10,0	6	27,02	099
10,0	133	38,0	88,0	10,0	6	22,99	100
11,0	142	41,0	97,0	10,0	6	32,43	110
12,0	151	44,0	106,0	10,0	6	33,81	120
13,0	151	44,0	106,0	10,0	6	37,73	130
14,0	160	47,0	111,0	12,5	8	39,00	140
15,0	162	50,0	113,0	12,5	8	40,37	150
16,0	170	52,0	121,0	12,5	8	41,65	160
17,0	175	54,0	124,0	14,0	8	49,28	170
18,0	182	56,0	131,0	14,0	8	50,55	180
19,0	189	58,0	132,0	16,0	8	59,24	190
20,0	195	60,0	136,0	16,0	8	56,48	200

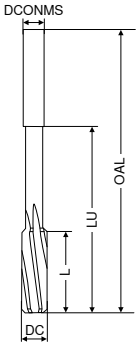
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

Machine reamers, DIN 212-B

- ▲ 0,01 mm steps
- ▲ tolerance: Ø 0,95–5,50 mm = +0,004 mm
- ▲ tolerance: Ø 5,51–12,00 mm = +0,005 mm

N 100





Left Hand Helix
HSS-E

DC +0,004/+0,005	OAL	L	LU	DCONMS h9	ZEFP	U2 Article no. 40 140 ...	
mm	mm	mm	mm	mm		EUR	
0,95 - 1,06	34	5,5	15,0	1,0	3	20,46	xxxxx[1]
1,07 - 1,18	36	6,5	15,5	1,1	3	20,46	xxxxx[1]
1,19 - 1,32	38	7,5	16,5	1,2	3	20,46	xxxxx[1]
1,33 - 1,39	40	8,0	18,0	1,4	3	20,46	xxxxx[1]
1,40 - 1,47	40	8,0	18,0	1,4	3	18,87	xxxxx[1]
1,48	40	8,0	18,0	1,4	3	18,87	01480
1,49	40	8,0	18,0	1,4	3	18,87	01490
1,50	40	8,0	18,0	1,4	3	17,91	01500
1,51 - 1,70	43	9,0	20,0	1,6	3	17,91	xxxxx[1]
1,71 - 1,90	46	10,0	22,0	1,8	4	17,91	xxxxx[1]
1,91 - 1,97	49	11,0	24,0	2,0	4	17,91	xxxxx[1]
1,98	49	11,0	24,0	2,0	4	17,91	01980
1,99	49	11,0	24,0	2,0	4	17,91	01990
2,00	49	11,0	24,0	2,0	4	16,42	02000
2,01	49	11,0	24,0	2,0	4	16,42	02010
2,02	49	11,0	24,0	2,0	4	16,42	02020
2,03	49	11,0	24,0	2,0	4	16,42	02030
2,04	49	11,0	24,0	2,0	4	16,42	02040
2,05	49	11,0	24,0	2,0	4	16,42	02050
2,06 - 2,09	49	11,0	24,0	2,0	4	16,42	xxxxx[1]
2,10 - 2,12	49	11,0	24,0	2,0	4	19,07	xxxxx[1]
2,13 - 2,36	53	12,0	25,0	2,2	4	19,07	xxxxx[1]
2,37 - 2,49	57	14,0	29,0	2,5	4	19,07	xxxxx[1]
2,50 - 2,59	57	14,0	29,0	2,5	4	16,21	xxxxx[1]
2,60 - 2,65	57	14,0	29,0	2,5	4	19,93	xxxxx[1]
2,66 - 2,80	61	15,0	33,0	2,8	6	19,93	xxxxx[1]
2,81 - 2,94	61	15,0	36,0	3,0	6	19,93	xxxxx[1]
2,95	61	15,0	36,0	3,0	6	19,93	02950
2,96	61	15,0	36,0	3,0	6	19,93	02960
2,97	61	15,0	36,0	3,0	6	19,93	02970
2,98	61	15,0	36,0	3,0	6	19,93	02980
2,99	61	15,0	36,0	3,0	6	19,93	02990
3,00	61	15,0	36,0	3,0	6	14,94	03000
3,01	65	16,0	36,0	3,2	6	14,94	03010
3,02	65	16,0	36,0	3,2	6	14,94	03020
3,03	65	16,0	36,0	3,2	6	14,94	03030
3,04	65	16,0	36,0	3,2	6	14,94	03040
3,05	65	16,0	36,0	3,2	6	14,94	03050
3,06	65	16,0	36,0	3,2	6	14,94	03060
3,07	65	16,0	36,0	3,2	6	14,94	03070
3,08 - 3,09	65	16,0	36,0	3,2	6	14,94	xxxxx[1]
3,10 - 3,35	65	16,0	36,0	3,2	6	18,87	xxxxx[1]
3,36 - 3,49	70	18,0	41,0	3,5	6	18,87	xxxxx[1]
3,50 - 3,59	70	18,0	41,0	3,5	6	16,21	xxxxx[1]
3,60 - 3,75	70	18,0	41,0	3,5	6	20,87	xxxxx[1]
3,76 - 3,81	75	19,0	44,0	4,0	6	20,87	xxxxx[1]
3,82 - 3,94	75	19,0	44,0	4,0	6	15,79	xxxxx[1]
3,95	75	19,0	44,0	4,0	6	15,79	03950
3,96	75	19,0	44,0	4,0	6	15,79	03960
3,97	75	19,0	44,0	4,0	6	15,79	03970
3,98	75	19,0	44,0	4,0	6	15,79	03980
3,99	75	19,0	44,0	4,0	6	15,79	03990
4,00	75	19,0	44,0	4,0	6	15,79	04000
4,01	75	19,0	44,0	4,0	6	15,79	04010
4,02	75	19,0	44,0	4,0	6	15,79	04020
4,03	75	19,0	44,0	4,0	6	15,79	04030
4,04	75	19,0	44,0	4,0	6	15,79	04040
4,05	75	19,0	44,0	4,0	6	15,79	04050
4,06	75	19,0	44,0	4,0	6	15,79	04060
4,07	75	19,0	44,0	4,0	6	15,79	04070
4,08	75	19,0	44,0	4,0	6	15,79	04080
4,09 - 4,20	75	19,0	44,0	4,0	6	15,79	xxxxx[1]
4,21 - 4,25	75	19,0	44,0	4,0	6	19,60	xxxxx[1]
4,26 - 4,75	80	21,0	48,0	4,5	5	19,60	xxxxx[1]
4,76 - 4,95	86	23,0	53,0	5,0	6	17,48	xxxxx[1]
4,96	86	23,0	53,0	5,0	6	17,48	04960
4,97	86	23,0	53,0	5,0	6	17,48	04970
4,98	86	23,0	53,0	5,0	6	17,48	04980
4,99	86	23,0	53,0	5,0	6	17,48	04990
5,00	86	23,0	53,0	5,0	6	17,48	05000
5,01	86	23,0	53,0	5,0	6	17,48	05010
5,02	86	23,0	53,0	5,0	6	17,48	05020
5,03	86	23,0	53,0	5,0	6	17,48	05030
5,04	86	23,0	53,0	5,0	6	17,48	05040
5,05	86	23,0	53,0	5,0	6	17,48	05050
5,06	86	23,0	53,0	5,0	6	17,48	05060
5,07	86	23,0	53,0	5,0	6	17,48	05070
5,08 - 5,20	86	23,0	53,0	5,0	6	17,48	xxxxx[1]
5,21 - 5,30	86	23,0	53,0	5,0	6	19,07	xxxxx[1]
5,31 - 5,94	93	26,0	58,0	5,6	6	19,07	xxxxx[1]
5,95	93	26,0	58,0	5,6	6	19,07	05950
5,96	93	26,0	58,0	5,6	6	19,07	05960
5,97	93	26,0	58,0	5,6	6	19,07	05970
5,98	93	26,0	58,0	5,6	6	19,07	05980
5,99	93	26,0	58,0	5,6	6	19,07	05990

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

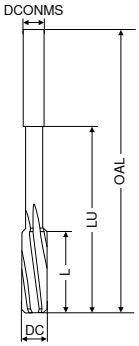
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **Page 75**.
For xxxxx please indicate requested Ø in the order
(e.g. Ø 10,06 mm → Article no. 40 140 10060)!

Machine reamers, DIN 212-B

- ▲ 0,01 mm steps
- ▲ tolerance: Ø 0,95–5,50 mm = +0,004 mm
- ▲ tolerance: Ø 5,51–12,00 mm = +0,005 mm

N 100





Left Hand Helix
HSS-E

DC	OAL	L	LU	DCONMS $_{h9}$	ZEFP	U2 Article no. 40 140 ...	
mm	mm	mm	mm	mm		EUR	
6,00	93	26	58	5,6	6	19,07	06000
6,01	101	28	64	6,3	6	19,07	06010
6,02	101	28	64	6,3	6	19,07	06020
6,03	101	28	64	6,3	6	19,07	06030
6,04	101	28	64	6,3	6	19,07	06040
6,05	101	28	64	6,3	6	19,07	06050
6,06 - 6,11	101	28	64	6,3	6	19,07	xxxxx [1]
6,12 - 6,34	101	28	64	6,3	6	20,87	xxxxx [1]
6,35	101	28	64	6,3	6	20,87	06350
6,36	101	28	64	6,3	6	20,87	06360 [1]
6,71 - 6,94	109	31	70	7,1	6	20,87	xxxxx [1]
6,95	109	31	70	7,1	6	20,87	06950
6,96	109	31	70	7,1	6	20,87	06960
6,97	109	31	70	7,1	6	20,87	06970
6,98	109	31	70	7,1	6	20,87	06980
6,99	109	31	70	7,1	6	20,87	06990
7,00	109	31	70	7,1	6	20,87	07000
7,01	109	31	70	7,1	6	20,87	07010
7,02	109	31	70	7,1	6	20,87	07020
7,03	109	31	70	7,1	6	20,87	07030
7,04 - 7,50	109	31	70	7,1	6	20,87	xxxxx [1]
7,51 - 7,63	109	31	76	7,1	6	20,87	xxxxx [1]
7,64 - 7,94	117	33	76	8,0	6	20,87	xxxxx [1]
7,95	117	33	76	8,0	6	20,87	07950
7,96	117	33	76	8,0	6	20,87	07960
7,97	117	33	76	8,0	6	20,87	07970
7,98	117	33	76	8,0	6	20,87	07980
7,99	117	33	76	8,0	6	20,87	07990
8,00	117	33	76	8,0	6	20,87	08000
8,01	117	33	76	8,0	6	20,87	08010
8,02	117	33	76	8,0	6	20,87	08020
8,03	117	33	76	8,0	6	20,87	08030
8,04	117	33	76	8,0	6	20,87	08040
8,05	117	33	76	8,0	6	20,87	08050
8,06 - 8,20	117	33	76	8,0	6	20,87	xxxxx [1]
8,21 - 8,50	117	33	76	8,0	6	26,28	xxxxx [1]
8,51 - 8,63	117	33	82	8,0	6	26,28	xxxxx [1]
8,64 - 8,95	125	36	82	9,0	6	26,28	xxxxx [1]
8,96	125	36	82	9,0	6	26,28	08960
8,97	125	36	82	9,0	6	26,28	08970
8,98	125	36	82	9,0	6	26,28	08980
8,99	125	36	82	9,0	6	26,28	08990
9,00	125	36	82	9,0	6	26,28	09000
9,01	125	36	82	9,0	6	26,28	09010
9,02	125	36	82	9,0	6	26,28	09020
9,03 - 9,50	125	36	82	9,0	6	26,28	xxxxx [1]
9,51 - 9,63	125	36	88	9,0	6	26,28	xxxxx [1]
9,64 - 9,95	133	38	88	10,0	6	26,28	xxxxx [1]
9,96	133	38	88	10,0	6	26,28	09960
9,97	133	38	88	10,0	6	26,28	09970
9,98	133	38	88	10,0	6	26,28	09980
9,99	133	38	88	10,0	6	26,28	09990
10,00	133	38	88	10,0	6	26,28	10000
10,01	133	38	88	10,0	6	26,28	10010
10,02	133	38	88	10,0	6	26,28	10020
10,03	133	38	88	10,0	6	26,28	10030
10,04	133	38	88	10,0	6	26,28	10040
10,05	133	38	88	10,0	6	26,28	10050
10,06 - 10,09	133	38	88	10,0	6	26,28	xxxxx [1]
10,10	133	38	88	10,0	6	26,28	10100
10,11 - 10,19	133	38	88	10,0	6	26,28	xxxxx [1]
10,20	133	38	88	10,0	6	26,28	10200
10,21 - 10,69	133	38	88	10,0	6	32,96	xxxxx [1]
10,70 - 11,20	142	41	97	10,0	6	32,96	xxxxx [1]
11,21 - 11,80	142	41	97	10,0	6	37,62	xxxxx [1]
11,81 - 11,95	151	44	106	10,0	6	37,62	xxxxx [1]
11,96	151	44	106	10,0	6	37,62	11960
11,97	151	44	106	10,0	6	37,62	11970
11,98	151	44	106	10,0	6	37,62	11980
11,99	151	44	106	10,0	6	37,62	11990
12,00	151	44	106	10,0	6	37,62	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

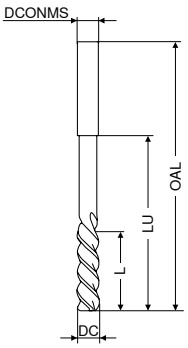
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **Page 75**.
For xxxxx please indicate requested Ø in the order
(e.g. Ø 10,06 mm → Article no. 40 140 10060)!

Quick spiral machine reamers, DIN 212-C

- with 45° left-hand helix and conical chamfer
- for reaming through holes in long chipping materials
- not suitable for blind holes
- the reaming allowance should be for at least 50 % greater and the feed up to 100 % higher than the normal values for reamers. This gives a clean, chatter-free surface, high roundness of the bore and a longer service life.

S





Left Hand Helix
HSS-E
Through hole

DC H7	OAL	L	LU	DCONMS h9	ZEFP	U2 Article no. 40 155 ... EUR		
mm	mm	mm	mm	mm				
1,0	34	5,5	15	1,0	2	20,66	010	1)
1,5	40	8,0	18	1,5	2	15,90	015	1)
1,8	46	10,0	22	1,8	2	19,18	018	1)
2,0	49	11,0	24	2,0	3	16,11	020	1)
2,2	53	12,0	25	2,2	3	24,27	022	1)
2,5	57	14,0	29	2,5	3	17,38	025	1)
2,8	61	15,0	33	2,8	3	26,81	028	1)
3,0	61	15,0	36	3,0	3	19,50	030	1)
3,2	65	16,0	36	3,2	3	28,83	032	1)
3,5	70	18,0	41	3,5	3	22,36	035	1)
4,0	75	19,0	44	4,0	3	19,50	040	
4,5	80	21,0	48	4,5	3	22,36	045	
5,0	86	23,0	53	5,0	3	21,30	050	
6,0	93	26,0	58	5,6	3	21,09	060	
6,5	101	28,0	64	6,3	3	25,22	065	
7,0	109	31,0	70	7,1	3	23,63	070	
8,0	117	33,0	76	8,0	3	23,63	080	
9,0	125	36,0	82	9,0	3	31,47	090	
10,0	133	38,0	88	10,0	3	29,78	100	
11,0	142	41,0	97	10,0	3	38,04	110	
12,0	151	44,0	106	10,0	3	35,82	120	
13,0	151	44,0	106	10,0	3	50,44	130	
14,0	160	47,0	111	12,5	3	46,95	140	
15,0	162	50,0	113	12,5	3	47,80	150	
16,0	170	52,0	121	12,5	3	50,44	160	
17,0	175	54,0	124	14,0	3	75,14	170	
18,0	182	56,0	131	14,0	3	68,99	180	
19,0	189	58,0	132	16,0	3	78,00	190	
20,0	195	60,0	136	16,0	3	75,14	200	

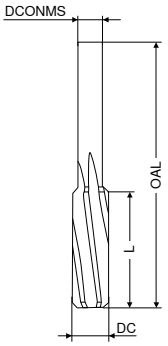
Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c Page 68+69

1) not standardised

Stub reamers, DIN 8089-B

AR





Left Hand Helix
HSS-E
Through hole

DC H7	OAL	L	DCONMS h8	ZEFP	U2 Article no. 40 145 ... EUR	
mm	mm	mm	mm			
4,0	56	20	3,55	6	14,09	040
4,5	63	22	4,00	6	16,11	045
5,0	63	22	4,00	6	15,58	050
5,5	63	22	5,00	6	18,01	055
6,0	63	22	5,00	6	15,58	060
6,5	63	22	5,00	6	18,97	065
7,0	71	25	6,30	6	18,97	070
8,0	71	25	6,30	6	18,54	080
9,0	71	25	8,00	6	22,36	090
10,0	71	25	8,00	6	22,57	100
11,0	80	28	10,00	6	30,94	110
12,0	80	28	10,00	6	33,06	120
13,0	80	28	10,00	6	37,10	130
14,0	90	32	12,50	8	37,73	140
15,0	90	32	12,50	8	39,00	150
16,0	90	32	12,50	8	41,12	160
17,0	90	32	12,50	8	47,05	170
18,0	100	36	16,00	8	50,02	180
19,0	100	36	16,00	8	57,97	190
20,0	100	36	16,00	8	54,58	200

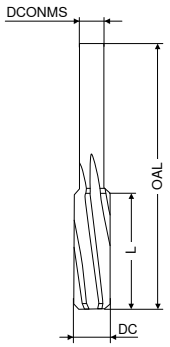
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

Stub reamers, DIN 8089-B

- 0,01 mm steps
- tolerance: Ø 3,76–5,50 mm = +0,004 mm
- tolerance: Ø 5,51–12,00 mm = +0,005 mm

AR 100





Left Hand Helix
HSS-E

DC +0,004/+0,005	OAL	L	DCONMS h8	ZEFP	U2 Article no. 40 139 ...	
mm	mm	mm	mm		EUR	
3,76 - 3,81	56	20	3,55	6	21,62	xxxxx 1)
3,82 - 3,94	56	20	3,55	6	15,79	xxxxx 1)
3,95	56	20	3,55	6	15,79	03950
3,96	56	20	3,55	6	15,79	03960
3,97	56	20	3,55	6	15,79	03970
3,98	56	20	3,55	6	15,79	03980
3,99	56	20	3,55	6	15,79	03990
4,00	56	20	3,55	6	15,79	04000
4,01	56	20	3,55	6	15,79	04010
4,02	56	20	3,55	6	15,79	04020
4,03 - 4,20	56	20	3,55	6	15,79	xxxxx 1)
4,21 - 4,25	56	20	3,55	6	19,07	xxxxx 1)
4,26 - 4,75	63	22	4,00	6	19,07	xxxxx 1)
4,76 - 4,94	63	22	4,00	6	16,74	xxxxx 1)
4,95	63	22	4,00	6	16,74	04950
4,96	63	22	4,00	6	16,74	04960
4,97	63	22	4,00	6	16,74	04970
4,98	63	22	4,00	6	16,74	04980
4,99	63	22	4,00	6	16,74	04990
5,00	63	22	4,00	6	16,74	05000
5,01	63	22	4,00	6	16,74	05010
5,02	63	22	4,00	6	16,74	05020
5,03	63	22	4,00	6	16,74	05030
5,04	63	22	4,00	6	16,74	05040
5,05	63	22	4,00	6	16,74	05050
5,06 - 5,20	63	22	4,00	6	16,74	xxxxx 1)
5,21 - 5,30	63	22	4,00	6	19,07	xxxxx 1)
5,31 - 5,70	63	22	5,00	6	19,07	xxxxx 1)
5,71 - 5,94	63	22	5,00	6	19,07	xxxxx 1)
5,95	63	22	5,00	6	19,07	05950
5,96	63	22	5,00	6	19,07	05960
5,97	63	22	5,00	6	19,07	05970
5,98	63	22	5,00	6	19,07	05980
5,99	63	22	5,00	6	19,07	05990
6,00	63	22	5,00	6	19,07	06000
6,01	63	22	5,00	6	19,07	06010
6,02	63	22	5,00	6	19,07	06020
6,03 - 6,11	63	22	5,00	6	19,07	xxxxx 1)
6,12 - 6,70	63	22	5,00	6	20,46	xxxxx 1)
6,71 - 6,94	71	25	6,30	6	20,46	xxxxx 1)
6,95	71	25	6,30	6	20,46	06950
6,96	71	25	6,30	6	20,46	06960
6,97	71	25	6,30	6	20,46	06970
6,98	71	25	6,30	6	20,46	06980
6,99	71	25	6,30	6	20,46	06990
7,00	71	25	6,30	6	20,46	07000
7,01	71	25	6,30	6	20,46	07010
7,02	71	25	6,30	6	20,46	07020
7,03 - 7,25	71	25	6,30	6	20,46	xxxxx 1)
7,26 - 7,94	71	25	6,30	6	20,46	xxxxx 1)
7,95	71	25	6,30	6	20,46	07950
7,96	71	25	6,30	6	20,46	07960
7,97	71	25	6,30	6	20,46	07970
7,98	71	25	6,30	6	20,46	07980
7,99	71	25	6,30	6	20,46	07990
8,00	71	25	6,30	6	20,46	08000
8,01	71	25	6,30	6	20,46	08010
8,02	71	25	6,30	6	20,46	08020
8,03	71	25	6,30	6	20,46	08030
8,04	71	25	6,30	6	20,46	08040
8,05 - 8,20	71	25	6,30	6	20,46	xxxxx 1)
8,21 - 8,50	71	25	6,30	6	25,85	xxxxx 1)
8,51 - 8,94	71	25	8,00	6	25,85	xxxxx 1)
8,95	71	25	8,00	6	25,85	08950
8,96	71	25	8,00	6	25,85	08960
8,97	71	25	8,00	6	25,85	08970
8,98	71	25	8,00	6	25,85	08980
8,99	71	25	8,00	6	25,85	08990
9,00	71	25	8,00	6	25,85	09000
9,01	71	25	8,00	6	25,85	09010 1)
9,02	71	25	8,00	6	25,85	09020
9,03 - 9,25	71	25	8,00	6	25,85	xxxxx
9,26 - 9,94	71	25	8,00	6	25,85	xxxxx 1)
9,95	71	25	8,00	6	25,85	09950
9,96	71	25	8,00	6	25,85	09960
9,97	71	25	8,00	6	25,85	09970
9,98	71	25	8,00	6	25,85	09980
9,99	71	25	8,00	6	25,85	09990
10,00	71	25	8,00	6	25,85	10000
10,01	71	25	8,00	6	25,85	10010
10,02	71	25	8,00	6	25,85	10020
10,03 - 10,20	71	25	8,00	6	25,85	xxxxx 1)
10,21 - 10,60	71	25	8,00	6	32,96	xxxxx 1)
10,61 - 11,20	80	28	10,00	6	32,96	xxxxx 1)
11,21 - 11,25	80	28	10,00	6	38,37	xxxxx 1)
11,26 - 11,94	80	28	10,00	6	38,37	xxxxx 1)
11,95	80	28	10,00	6	38,37	11950
11,96	80	28	10,00	6	38,37	11960
11,97	80	28	10,00	6	38,37	11970
11,98	80	28	10,00	6	38,37	11980
11,99	80	28	10,00	6	38,37	11990
12,00	80	28	10,00	6	38,37	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

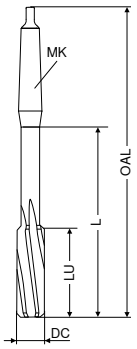
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **Page 75**.
For xxxxx please indicate required diameter in the order
(e.g. Ø 3.82 mm → Article no. 40 139 03820)!

Machine reamers HSS-E, DIN 208

▲ the circular land on the cutting edge burnishes the hole and guides the reamer

N





Left Hand Helix
HSS-E
Through hole

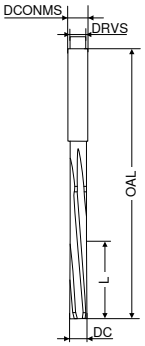
DC H7	OAL	L	LU	MK	ZEFP	U2 Article no. 40 160 ... EUR	
mm	mm	mm	mm				
16	210	52	130	2	8	48,33	160
17	214	54	134	2	8	51,93	170
18	219	56	139	2	8	53,84	180
19	223	58	143	2	8	56,48	190
20	228	60	148	2	8	56,48	200
21	232	62	152	2	8	64,22	210
22	237	64	157	2	8	64,22	220
23	241	66	161	2	8	73,86	230
24	268	68	169	3	8	75,77	240
25	268	68	169	3	8	78,00	250
26	273	70	174	3	8	83,51	260
27	277	71	178	3	10	92,62	270
28	277	71	178	3	10	92,62	280
29	281	73	182	3	10	103,50	290
30	281	73	182	3	10	95,70	300
32	317	77	193	4	10	126,20	320
34	321	78	197	4	10	139,90	340
35	321	78	197	4	10	139,90	350
36	325	79	201	4	10	153,70	360
38	329	81	205	4	10	167,40	380
40	329	81	205	4	10	168,50	400
42	333	82	209	4	12	184,40	420
44	336	83	212	4	12	219,30	440
45	336	83	212	4	12	220,50	450
46	340	84	216	4	12	260,70	460
47	340	84	216	4	12	274,50	470
48	344	86	220	4	12	275,50	480
50	344	86	220	4	12	275,50	500

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

Hand reamers, DIN 206-B

H





Left Hand Helix
HSS

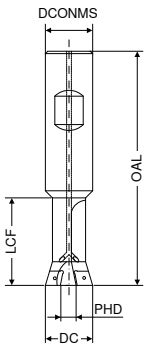
DC H7	OAL	L	DRVS	DCONMS	ZEFP	U2 Article no. 40 100 ... EUR	
mm	mm	mm	mm	mm			
1,0	34	13		1,0	3	26,60	010
1,2	38	17		1,2	3	25,22	012
1,3	38	17		1,3	3	26,71	013
1,4	41	20	1,12	1,4	3	23,10	014
1,5	41	20	1,12	1,5	3	21,30	015
1,6	44	21	1,25	1,6	3	22,68	016
1,8	47	23	1,40	1,8	4	24,27	018
2,0	50	25	1,60	2,0	4	19,71	020
2,2	54	27	1,80	2,2	4	23,10	022
2,5	58	29	2,00	2,5	4	19,50	025
2,8	62	31	2,24	2,8	6	23,95	028
3,0	62	31	2,24	3,0	6	20,34	030
3,2	66	33	25,00	3,2	6	25,22	032
3,5	71	35	2,80	3,5	6	23,95	035
4,0	76	38	3,15	4,0	6	17,38	040
4,5	81	41	3,55	4,5	6	21,09	045
5,0	87	44	4,00	5,0	6	20,34	050
5,5	93	47	4,50	5,5	6	21,83	055
6,0	93	47	4,50	6,0	6	19,71	060
7,0	107	54	5,60	7,0	6	21,30	070
8,0	115	58	6,30	8,0	6	22,36	080
9,0	124	62	7,10	9,0	6	25,22	090
10,0	133	66	8,00	10,0	6	25,22	100
11,0	142	71	9,00	11,0	6	27,87	110
12,0	152	76	10,00	12,0	6	30,10	120
13,0	152	76	10,00	13,0	6	44,41	130
14,0	163	81	11,20	14,0	8	48,33	140
15,0	163	81	11,20	15,0	8	51,19	150
16,0	175	87	12,50	16,0	8	52,99	160
17,0	175	87	14,00	17,0	8	56,07	170
18,0	188	93	14,00	18,0	8	62,10	180
19,0	188	93	14,00	19,0	8	66,98	190
20,0	201	100	16,00	20,0	8	65,81	200
22,0	215	107	18,00	22,0	8	75,77	220
24,0	231	115	20,00	24,0	8	90,82	240
25,0	231	115	20,00	25,0	8	89,76	250
26,0	231	115	20,00	26,0	8	95,70	260
28,0	247	124	22,40	28,0	10	122,90	280
30,0	247	124	22,40	30,0	10	128,20	300
32,0	265	133	25,00	32,0	10	142,10	320
34,0	284	142	28,00	34,0	10	172,70	340
35,0	284	142	28,00	35,0	10	173,80	350
36,0	284	142	28,00	36,0	10	189,70	360
38,0	305	152	31,50	38,0	10	220,50	380
40,0	305	152	31,50	40,0	10	229,90	400

Insert Countersink

- ▲ 2 cutting edges, right-hand cutting for countersinking according to DIN 974-1
- ▲ for countersinking of hexagon socket screws ISO 1207, ISO 4762 (DIN 912), DIN 6912, DIN 7984
- ▲ for sinking cap screws the recommended inserts are specified

Supply details:
Indexable insert countersink including clamping screws

WPS





B

for screws	DC mm	PHD mm	DCONMS h6 mm	OAL mm	LCF mm	Insert	U3 Article no. 30 195 ... EUR	
M8	15	4,0	16	90	25	CC.T 060204	87,44	**015**
M10	18	7,0	16	90	31	CC.T 060204	92,80	**018**
M12	20	9,0	20	100	40	CC.T 060204	95,62	**020**
M16	26	8,5	25	110	52	CC.T 09T304	103,80	**026**
M20	33	15,5	32	130	66	CC.T 09T304	109,10	**033**

Y7



Key D

2A

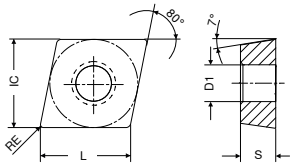


Clamping screw

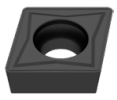
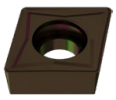
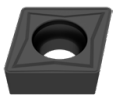
Spare parts Insert		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
CC.T 060204	T08	7,80	**110**	M2,5x6	2,36	**112**
CC.T 09T304	T15	9,28	**113**	M3,5x7,2	3,14	**110**

CCMT / CCGT

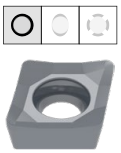
Designation	L	S	D1	IC
	mm	mm	mm	mm
CC.T 0602..	6,4	2,38	2,8	6,35
CC.T 09T3..	9,7	3,97	4,4	9,52



CCMT

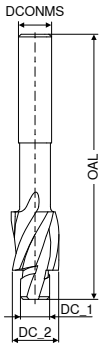
	-SM CTCP125	-SM CTCP135	-SM CTC2135	-SM CTCK110
	-ZM HCX1125	-ZM HCR1135	-ZM CWN2135	-ZM DCX3110
	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
				
	M	M	M	M
	CCMT	CCMT	CCMT	CCMT
	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 252 ... EUR	Article no. 76 252 ... EUR	Article no. 70 252 ... EUR	Article no. 70 252 ... EUR
060204EN 0,4	7,78 504	7,78 704	7,54 670	7,78 004
060208EN 0,8		7,78 706		7,78 006
09T304EN 0,4	9,70 516	9,70 716	9,68 674	9,70 016
09T308EN 0,8	9,70 518	9,70 718	9,68 676	9,70 018
09T312EN 1,2				9,70 020
Steel	●	●	○	●
Stainless steel	○	○	●	○
Cast iron	○			●
Non ferrous metals				
Heat resistant alloys		○	●	
Hardened materials				

CCGT

	-27 H10T	-27 CWN15	-27 AMZ
	-AL CWK15	-AL CWN15	-AL AMZ
			
	M	M	M
	CCGT	CCGT	CCGT
	1A/90	1A	1A/90
ISO / RE mm	Article no. 70 254 ... EUR	Article no. 70 254 ... EUR	Article no. 70 254 ... EUR
060202FN 0,2	10,22 600	12,97 300	12,42 450
060204FN 0,4	10,22 602	12,97 302	12,42 452
09T302FN 0,2	10,91 604	13,41 304	12,75 454
09T304FN 0,4	10,91 606	13,41 306	12,75 456
09T308FN 0,8	10,91 608	13,41 308	12,75 458
Steel			○
Stainless steel		○	○
Cast iron	○		○
Non ferrous metals	●	●	●
Heat resistant alloys	○		
Hardened materials			

Counterbore, DIN 373

- with fixed pilot
- with 3 cutting edges, right-hand flutes for counterbores according to DIN 74
- for countersinking to suit hexagon socket screws according to DIN 912, DIN 6912, DIN 7984 and cap screws according to DIN 84





HSS
Core hole



fine
HSS
Through hole



medium
HSS
Through hole

Thread	DC_2 z9	DCONMS h9	OAL	DC_1 e8	U1 Article no. 30 192 ...		U1 Article no. 30 190 ...		U1 Article no. 30 191 ...	
	mm	mm	mm	mm	EUR		EUR		EUR	
M3	6	5,0	71	2,5	13,46	**030**				
M3	6	5,0	71	3,2			13,46	**030** 1)		
M3	6	5,0	71	3,4					13,46	**030** 1)
M4	8	5,0	71	3,3	10,92	**040**				
M4	8	5,0	71	4,3			10,92	**040** 1)		
M4	8	5,0	71	4,5					10,92	**040** 1)
M5	10	8,0	80	4,2	11,97	**050**				
M5	10	8,0	80	5,3			11,97	**050** 1)		
M5	10	8,0	80	5,5					11,97	**050** 1)
M6	11	8,0	80	5,0	12,82	**060**				
M6	11	8,0	80	6,4			12,82	**060** 1)		
M6	11	8,0	80	6,6					12,82	**060** 1)
M8	15	12,5	100	6,8	20,46	**080**				
M8	15	12,5	100	8,4			20,46	**080** 1)		
M8	15	12,5	100	9,0					20,46	**080** 1)
M10	18	12,5	100	8,5	24,16	**100**				
M10	18	12,5	100	10,5			24,16	**100** 1)		
M10	18	12,5	100	11,0					24,16	**100** 1)
M12	20	12,5	100	10,2	26,60	**120**				
M12	20	12,5	100	13,0			26,60	**120**		
M12	20	12,5	100	13,5					26,60	**120**

1) included in the set

Counterbore, DIN 373 – Set

Scope of supply:
Counterbores M3; M4; M5; M6; M8; M10 in case



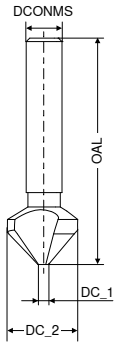
U1 Article no. 30 190 ...		U1 Article no. 30 191 ...	
EUR		EUR	
104,30	**999**	104,30	**999**

Countersink 90° with irregular pitch, DIN 335-C

- ▲ all sizes with 3 cutting edges and highly irregular pitch, resulting in smooth running, excellent roundness and chatter reduction giving the highest surface quality
- ▲ special TPX76S coating
- ▲ for very high tool life in almost all materials
- ▲ greatly reduced axial and radial forces
- ▲ for countersinking to DIN 7991

N

TPX76S





90°
Solid carbide

DC_2 z9	DC_1	DCONMS h6	OAL	DIN 7991	U1 Article no. 30 116 ...	
mm	mm	mm	mm		EUR	
6,3	1,5	5	45	M3	117,90	**063**
8,3	2,0	6	50	M4	126,80	**083**
10,4	2,5	6	50	M5	132,30	**104**
12,4	2,8	8	56	M6	138,80	**124**
16,5	3,2	10	60	M8	169,70	**165**
20,5	3,5	10	63	M10	195,10	**205**
25,0	3,8	10	67	M12	224,90	**250**
31,0	4,2	12	71	M16	266,80	**310**

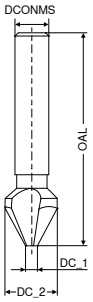
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

→ v_c Page 70

Countersink 60°, factory standard-C

▲ with 3 cutting edges for countersinking and deburring in high-tensile steels, grey cast iron, aluminium alloys containing silicon and corrosion resistant steels

N





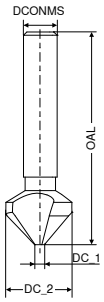
◁ 60°
Solid carbide

DC_2 z9	DC_1	DCONMS h9	OAL	U1 Article no. 30 160 ...	
mm	mm	mm	mm	EUR	
12,5	3,2	8	56	173,10	**125**
16,0	4,0	10	63	241,40	**160**
20,0	5,0	10	67	277,80	**200**
25,0	6,3	10	71	307,50	**250**

Countersink 90°, factory standard-C

▲ with 3 cutting edges for countersinking and deburring in high-tensile steels, grey cast iron, alumínium alloys containing silicon and corrosion resistant steels
▲ from Ø 12,4 mm with solid carbide head

N





◁ 90°
Solid carbide

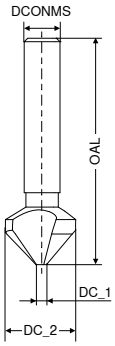
DC_2 z9	DC_1	DCONMS h9	OAL	DIN ISO 7721	DIN 7991	U1 Article no. 30 115 ...	
mm	mm	mm	mm			EUR	
10,4	2,5	8	46	M5		129,00	**100**
12,4	2,8	8	56		M6	137,80	**124**
15,0	3,2	10	60	M8		144,40	**150**
16,5	3,2	10	60		M8	169,70	**165**
20,5	3,5	10	63		M10	180,80	**205**
25,0	3,8	10	67		M12	203,80	**250**
31,0	4,2	12	71		M16	289,90	**310**

Countersink 90° with irregular pitch, DIN 335-C

- ▲ all sizes with 3 cutting edges and highly irregular pitch, resulting in smooth running, excellent roundness and chatter reduction giving the highest surface quality
- ▲ special Ti50 coating
- ▲ for very high tool life in almost all materials
- ▲ greatly reduced axial and radial forces
- ▲ for countersinking to DIN ISO 7721 and DIN 7991

N

Ti50





4

90°
HSS

DC_2 z9	DC_1	DCONMS	OAL	DIN ISO 7721	DIN 7991	U1 Article no. 30 140 ... EUR		
mm	mm	mm	mm					
4,3	1,3	4	40	M2		21,73	043	
6,0	1,5	5	45	M3		23,21	060	
6,3	1,5	5	45		M3	23,52	063	
8,0	2,0	6	50	M4		25,54	080	
8,3	2,0	6	50		M4	26,07	083	
10,0	2,5	6	50	M5		26,50	100	
10,4	2,5	6	50		M5	26,71	104	1)
11,5	2,8	8	56	M6		30,42	115	
12,4	2,8	8	56		M6	31,79	124	
15,0	3,2	10	60	M8		35,82	150	
16,5	3,2	10	60		M8	36,77	165	1)
19,0	3,5	10	63	M10		40,49	190	
20,5	3,5	10	63		M10	45,68	205	
23,0	3,8	10	67	M12		49,91	230	
25,0	3,8	10	67		M12	55,11	250	1)
31,0	4,2	12	71		M16	67,51	310	

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

1) included in the set

→ v_c Page 70

Countersink 90° with irregular pitch, DIN 335-C – Set

Scope of supply:

Countersinks Ø 10,4 / 16,5 / 25,0 mm in storage case

N

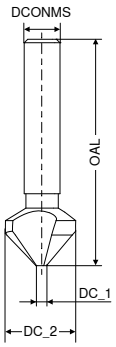


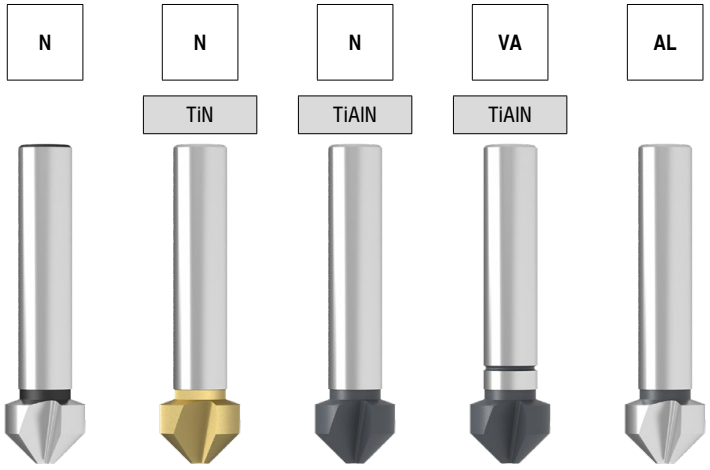
Ti50

U1
Article no.
30 140 ...
EUR
113,40 **999**

Countersink 90°, DIN 335-C

- 3 cutting edges to avoid burrs and chatter marks when countersinking and deburring in virtually all materials. Particularly suitable for DIN screws according to DIN ISO 7721 and 7991, as the countersink diameters are matched to the heads of these screws.
- the TiN version makes high cutting rates possible; very long tool life and very good friction resistance properties in order to avoid material sticking.
- TiAlN version shows considerably improved performance compared to TiN version. Particularly suitable for all abrasive materials (cast iron, AlSi) and/or at high temperature.





DC_2 z9	DC_1	DCONMS	OAL	DIN ISO 7721	DIN 7991	U1 Article no. 30 100 ...		U1 Article no. 30 110 ...		U1 Article no. 30 130 ...		U1 Article no. 30 132 ...		U1 Article no. 30 102 ...	
mm	mm	mm	mm			EUR		EUR		EUR		EUR		EUR	
4,3	1,3	4	40	M2		6,98	043								
5,0	1,5	4	40	M2,5		7,22	050	14,09	050	18,97	050				
6,0	1,5	5	45	M3		7,34	060								
6,3	1,5	5	45		M3	7,34	063 1)	14,09	063 1)	19,07	063	15,37	063	10,58	063
7,0	1,8	6	50	M3,5		7,75	070								
8,0	2,0	6	50	M4		8,01	080	16,32	080	20,03	080				
8,3	2,0	6	50		M4	8,30	083 1)	16,32	083 1)	20,13	083	18,12	083	11,34	083
9,4	2,2	6	50			9,09	094								
10,0	2,5	6	50	M5		9,66	100	17,70	100	21,52	100				
10,4	2,5	6	50		M5	10,08	104 1)	19,50	104 1)	21,73	104	20,13	104	12,93	104
11,5	2,8	8	56	M6		10,46	115								
12,4	2,8	8	56		M6	10,70	124 1)	21,40	124 1)	27,87	124	22,15	124	13,46	124
13,4	2,9	8	56			11,55	134								
15,0	3,2	10	60	M8		12,72	150	24,48	150	35,29	150	28,08	150	15,58	150
16,5	3,2	10	60		M8	13,78	165 1)	25,97	165 1)	36,88	165	29,78	165	16,42	165
19,0	3,5	10	63	M10		17,27	190								
20,5	3,5	10	63		M10	18,01	205 1)	36,57	205 1)	47,58	205	35,29	205	22,89	205
23,0	3,8	10	67	M12		22,46	230								
25,0	3,8	10	67		M12	23,95	250	50,13	250	68,24	250	46,21	250	30,52	250
31,0	4,2	12	71		M16	36,57	310	64,65	310	93,15	310	68,78	310		
31,0	4,2	12	67		M16									48,86	310

1) included in the set

Countersink 90°, DIN 335-C – set

Scope of supply:

Countersinks Ø 6,3; 8,3; 10,4; 12,4; 16,5; 20,5 in case

N

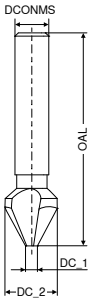


TiN

U1 Article no. 30 100 ...		U1 Article no. 30 110 ...	
EUR		EUR	
71,64	999	136,80	999

Countersink 60°, DIN 334-C

▲ 3 cutting edges for countersinking and deburring in virtually all materials





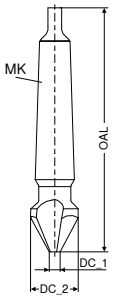
60°
HSS

DC_2 z9	DC_1	DCONMS h9	OAL	U1 Article no. 30 150 ...	
mm	mm	mm	mm	EUR	
6,3	1,6	5	45	8,04	**063** 1)
8,0	2,0	6	50	8,17	**080** 1)
10,0	2,5	6	52	10,31	**100** 1)
12,5	3,2	8	56	10,58	**125** 1)
16,0	4,0	10	63	13,35	**160** 1)
20,0	5,0	10	67	18,65	**200** 1)
25,0	6,3	10	71	25,01	**250**

1) included in the set

Countersink 60°, DIN 334-D

▲ 3 cutting edges for countersinking and deburring in virtually all materials





MK
60°
HSS

DC_2 z9	DC_1	OAL	MK	U1 Article no. 30 155 ...	
mm	mm	mm		EUR	
16,0	4,0	90	1	29,99	**160**
20,0	5,0	106	2	37,51	**200**
25,0	6,3	112	2	41,12	**250**
31,5	10,0	118	2	42,82	**315**
40,0	12,5	150	3	71,00	**400**
50,0	16,0	160	3	91,35	**500**
63,0	20,0	190	4	144,10	**630**
80,0	25,0	200	4	237,40	**800**

Countersink 60°, DIN 334-C – set

Scope of supply:

Countersinks Ø 6,3; 8,0; 10,0; 12,5; 16,0; 20,0 in case

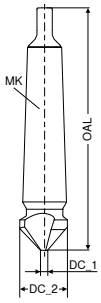


U1 Article no. 30 150 ...	
EUR	
78,21	**999**

Countersink 90°, DIN 335-C

▲ 3 cutting edges to avoid burrs and chatter marks when countersinking and deburring in virtually all materials. Particularly suitable for DIN screws according to DIN ISO 7721 and 7991, as the countersink diameters are matched to the heads of these screws.

N



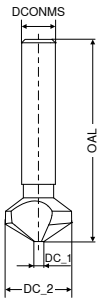


MK
90°
HSS

DC_2 z9	DC_1	OAL	MK	U1 Article no. 30 105 ...	
mm	mm	mm		EUR	
16,5	3,2	85	1	30,31	**165**
19,0	3,2	100	2	39,31	**190**
20,5	3,5	100	2	40,70	**205**
23,0	3,8	106	2	40,70	**230**
25,0	3,8	106	2	42,07	**250**
26,0	3,8	106	2	42,07	**260**
28,0	4,0	112	2	45,04	**280**
30,0	4,2	112	2	45,04	**300**
31,0	4,2	112	2	48,33	**310**
34,0	4,5	118	2	44,94	**340**
37,0	4,8	118	2	55,11	**370**
40,0	10,0	140	3	66,77	**400**
50,0	14,0	150	3	80,01	**500**
63,0	16,0	180	4	127,20	**630**
80,0	22,0	190	4	206,70	**800**

Countersink 120°, factory standard-C

▲ 3 cutting edges for countersinking and deburring in virtually all materials



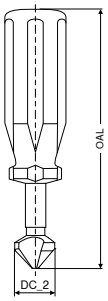


120°
HSS

DC_2 z9	DC_1	DCONMS h9	OAL	U1 Article no. 30 170 ...	
mm	mm	mm	mm	EUR	
6,3	1,5	5	45	10,00	**063**
8,3	2,0	6	50	10,00	**083**
10,4	2,5	6	50	11,13	**104**
12,4	2,8	8	56	11,87	**124**
16,5	3,2	10	60	17,27	**165**
20,5	3,5	10	60	23,74	**205**
25,0	3,8	10	63	29,04	**250**

Hand deburring tool 90°

- 3 cutting edges and non-slip plastic handle
- for countersinking and deburring on all materials





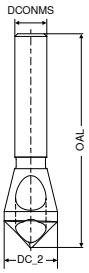
90°
HSS

DC_2	OAL	U1 Article no. 30 125 ...	
mm	mm	EUR	
12,4	135	14,84	124
15,0	135	17,48	150
16,5	135	18,01	165
20,5	135	21,40	205
25,0	135	25,97	250

Deburring countersink 90°, factory standard-A

- with angled hole to avoid burrs and chattermarks when countersinking and deburring in soft long-chipping materials, e.g. aluminium, plastics etc.

TiN





90°
HSS-E



90°
HSS-E

DC_2	D_{min} - D_{max}	DCONMS h9	OAL	U1 Article no. 30 120 ...		U1 Article no. 30 121 ...	
mm	mm	mm	mm	EUR		EUR	
6,3	1 - 4	6,3	45	16,74	040 [1]	25,85	040 [1]
10,0	2 - 5	6,0	45	10,30	050	15,48	050
14,0	5 - 10	8,0	48	12,72	101	20,66	101
21,0	10 - 15	10,0	65	21,83	150	30,10	150
28,0	15 - 20	12,0	85	44,09	200	61,36	200
35,0	20 - 25	15,0	102	61,36	250	90,50	250

1) can be used in both directions

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values for REAMAX TS

	Grade / coating	HM-DBG-P / Ti700				HM-DBG-P / Ti700				
	Article no. / type	40 585 ... / 75H.65 – ASG3000				40 521 ..., 40 571 ... / 75J.65, 75H.65 – ASG0106				
	Nominal Ø in mm	18–21,999	22–31,799	31,8–51,999	52–65	18–21,999	22–31,799	31,8–51,999	52–65	
	Reaming allowance Ø	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	
	Number of teeth	6	6	8	10	6	6	8	10	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.2	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.3	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.4	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.5	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.6	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.7	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.8	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.9	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.10	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.11							80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.12							60–100	60–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.13							60–100	60–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.14							40–60	40–60	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.15							40–60	40–60	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.16							40–60	40–60	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
2.1							45–60	40–50	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.2							45–60	40–50	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.3							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.4							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.5							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.6							45–60	40–50	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.7							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
3.1	150–220	120–150	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.2	150–220	120–150	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.3	175–300	150–180	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.4	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
3.5	150–250	120–160	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.6	150–250	120–160	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.7	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
3.8	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11												
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data standard values for REAMAX TS

	Grade / coating	HM-TiN / CWN10				HM-DBC / CWN10			
	Article no. / type	40 535 ... / 75H.71 – ASG3000				40 526 ..., 40 580 ... / 75J.17, 75H.17 – ASG0706			
	Nominal Ø in mm	18–21,999	22–31,799	31,8–51,999	52–65	18–21,999	22–31,799	31,8–51,999	52–65
	Reaming allowance Ø	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50
	Number of teeth	6	6	8	10	6	6	8	10
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.2	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.3	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.4	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.5	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.6	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.7	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.8	30–45	30–45	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.9	30–45	30–45	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.10	30–45	30–45	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1												
3.2												
3.3												
3.4												
3.5												
3.6												
3.7												
3.8												
4.1							**150–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.2							**150–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.3							**200–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.4							**200–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.5							**200–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.6	**80–150**	**80–120**	0,70–1,10	0,90–1,40	1,20–1,90	1,70–2,60						
4.7	**120–200**	**120–150**	0,70–1,10	0,90–1,40	1,20–1,90	1,70–2,60						
4.8												
4.9												
4.10												
4.11	**120–200**	**120–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40						
4.12	**80–150**	**80–120**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40						
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for REAMAX TS

	Grade / coating	DST / CWC10				DST / CWC10				
	Article no. / type	40 539 ... / 75H.93 – ASG3000				40 597 ... / 75J.93 – ASG4000				
	Nominal Ø in mm	18–21,999	22–31,799	31,8–51,999	52–65	18–21,999	22–31,799	31,8–51,999	52–65	
	Reaming allowance Ø	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	
	Number of teeth	6	6	8	10	6	6	8	10	
Index	v_c m/min		f	f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.2	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.3	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.4	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.5	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.6	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.7	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.8												
1.9	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.10	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.11	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.12	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1												
3.2												
3.3	**175–300**	**150–180**	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40	225–300	180–240	1,20–1,60	1,50–2,00	2,00–2,70	2,90–4,10
3.4	**120–150**	**100–120**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	120–150	100–120	1,20–1,60	1,50–2,00	2,00–2,70	2,90–4,10
3.5	**150–250**	**120–200**	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.6	**150–250**	**120–200**	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.7	**120–180**	**120–150**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
3.8	**120–180**	**120–150**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
4.1												
4.2												
4.3												
4.4												
4.5												
4.6	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.7	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.8												
4.9												
4.10												
4.11	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.12	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data standard values for REAMAX TS

	Grade / coating		DST / CWC10			
	Article no. / type		40 544 ... / 75J.93 – ASG3000			
	Nominal Ø in mm		18–21,999	22–31,799	31,8–51,999	52–65
	Reaming allowance Ø		0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50
	Number of teeth		6	6	8	10
Index	v_c m/min		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
	3xD	5xD				
1.1	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.2	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.3	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.4	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.5	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.6	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.7	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.8						
1.9	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.10	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.11	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.12	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.13						
1.14						
1.15						
1.16						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1						
3.2						
3.3	175–300	150–180	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40
3.4	120–150	100–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
3.5	150–250	120–200	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40
3.6	150–250	120–200	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40
3.7	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
3.8	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
4.1						
4.2						
4.3						
4.4						
4.5						
4.6	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.7	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.8						
4.9						
4.10						
4.11	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.12	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for REAMAX

	Grade / coating	HM-TiN / CWN 10			HM-DBC		
	Article no. / type	40 505 ... / 640.71 – ASG3000			40 570 ... / 640.27 – ASG0706		
	Nominal Ø in mm	12–21,999	22–32,000	32,001–40	12–21,999	22–32,000	32,001–40
	Reaming allowance Ø	0,10–0,30	0,20–0,40	0,20–0,40	0,10–0,30	0,20–0,40	0,20–0,40
	Number of teeth	6	8	8	6	8	8
Index	v_c m/min		f	f	v_c m/min		f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.
1.1	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.2	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.3	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.4	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.5	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.6	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.7	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00					
1.8	30–45	30–45	0,60–0,80	1,00–1,40	1,00–1,40					
1.9	30–45	30–45	0,60–0,80	1,00–1,40	1,00–1,40					
1.10	30–45	30–45	0,60–0,80	1,00–1,40	1,00–1,40					
1.11										
1.12										
1.13										
1.14										
1.15										
1.16										
2.1										
2.2										
2.3										
2.4										
2.5										
2.6										
2.7										
3.1										
3.2										
3.3										
3.4										
3.5										
3.6										
3.7										
3.8										
4.1						**150–300**	**150–300**	1,00–1,40	1,70–2,40	1,70–2,40
4.2						**150–300**	**150–300**	1,00–1,40	1,70–2,40	1,70–2,40
4.3						**200–300**	**150–300**	1,00–1,40	1,70–2,40	1,70–2,40
4.4						**200–300**	**150–300**	1,00–1,40	1,70–2,40	1,70–2,40
4.5						**200–300**	**150–300**	1,00–1,40	1,70–2,40	1,70–2,40
4.6	**80–150**	**80–120**	0,80–1,20	1,40–2,00	1,40–2,00					
4.7	**120–200**	**120–150**	1,00–1,40	1,70–2,40	1,70–2,40					
4.8										
4.9										
4.10										
4.11	**120–200**	**120–200**	1,00–1,40	1,70–2,40	1,70–2,40					
4.12	**120–200**	**120–200**	1,00–1,40	1,70–2,40	1,70–2,40					
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data standard values for REAMAX

	Grade / coating	DST / CWC 10				DST / CWC 10				
	Article no. / type	40 525 ... / 640.93 – ASG3000				40 536 ... / 640.93 – ASG4000				
	Nominal Ø in mm	12–21,999	22–32,000	32,001–40		12–21,999	22–32,000	32,001–40		
	Reaming allowance Ø	0,10–0,30	0,20–0,40	0,20–0,40		0,10–0,30	0,20–0,40	0,20–0,40		
	Number of teeth	6	8	8		6	8	8		
Index	v_c m/min		f	f	f	v_c m/min		f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.2	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.3	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.4	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.5	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.6	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.7	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.8										
1.9	80–120	80–120	0,90–1,20	1,50–2,00	1,50–2,00	80–120	80–120	1,10–1,40	1,80–2,40	1,80–2,40
1.10	80–120	80–120	0,90–1,20	1,50–2,00	1,50–2,00	80–120	80–120	1,10–1,40	1,80–2,40	1,80–2,40
1.11	80–120	80–120	0,90–1,20	1,50–2,00	1,50–2,00	80–120	80–120	1,10–1,40	1,80–2,40	1,80–2,40
1.12										
1.13										
1.14										
1.15										
1.16										
2.1										
2.2										
2.3										
2.4										
2.5										
2.6										
2.7										
3.1										
3.2										
3.3	175–300	150–180	1,00–1,40	1,80–2,40	1,80–2,40	175–300	150–180	1,20–1,60	1,50–2,00	2,00–2,70
3.4	150–250	120–160	1,00–1,40	1,80–2,40	1,80–2,40	120–180	120–150	1,20–1,60	1,50–2,00	2,00–2,70
3.5	150–250	120–160	1,00–1,40	1,80–2,40	1,80–2,40					
3.6	150–250	120–160	1,00–1,40	1,80–2,40	1,80–2,40					
3.7	120–180	120–150	0,90–1,20	1,50–2,00	1,50–2,00	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30
3.8	120–180	120–150	0,90–1,20	1,50–2,00	1,50–2,00	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30
4.1										
4.2										
4.3										
4.4										
4.5										
4.6	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.7	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.8										
4.9										
4.10										
4.11	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.12	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for REAMAX

	Grade / coating	HM-DBG-P / Ti700			HM-DBG-P / Ti700				
	Article no. / type	40 560 ... / 640.65 – ASG3000			40 551 ... / 640.65 – ASG0106				
	Nominal Ø in mm	12–21,999	22–32,000	32,001–40	12–21,999	22–32,000	32,001–40		
	Reaming allowance Ø	0,10–0,30	0,20–0,40	0,20–0,40	0,10–0,30	0,20–0,40	0,20–0,40		
	Number of teeth	6	8	8	6	8	8		
Index	v_c m/min		f	f	f	v_c m/min		f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.2	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.3	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.4	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.5	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.6	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.7	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.8	80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30					
1.9	80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30					
1.10	80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30					
1.11						80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30
1.12						60–100	60–100	0,70–1,00	0,90–1,30	0,90–1,30
1.13						60–100	60–100	0,70–1,00	0,90–1,30	0,90–1,30
1.14						40–60	40–60	0,60–0,80	0,90–1,10	0,90–1,10
1.15						40–60	40–60	0,60–0,80	0,90–1,10	0,90–1,10
1.16						40–60	40–60	0,60–0,80	0,90–1,10	0,90–1,10
2.1						45–60	40–50	0,70–0,90	1,20–1,60	1,20–1,60
2.2						45–60	40–50	0,70–0,90	1,20–1,60	1,20–1,60
2.3						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
2.4						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
2.5						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
2.6						45–60	40–50	0,70–0,90	1,20–1,60	1,20–1,60
2.7						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
3.1	200–250	160–200	1,00–1,40	1,30–1,90	1,30–1,90					
3.2	200–250	160–200	1,00–1,40	1,30–1,90	1,30–1,90					
3.3	225–300	180–240	1,00–1,40	1,30–1,90	1,30–1,90					
3.4	120–150	100–120	0,90–1,20	1,20–1,60	1,20–1,60					
3.5	150–250	120–200	0,90–1,20	1,20–1,60	1,20–1,60					
3.6	150–250	120–200	0,90–1,20	1,20–1,60	1,20–1,60					
3.7	120–150	100–120	0,90–1,20	1,20–1,60	1,20–1,60					
3.8	120–150	100–120	0,90–1,20	1,20–1,60	1,20–1,60					
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12										
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1						40–60	40–60	0,40–0,80	0,60–1,00	0,60–1,00
6.2						40–60	40–60	0,40–0,80	0,60–1,00	0,60–1,00
6.3						30–50	30–50	0,40–0,80	0,60–1,00	0,60–1,00
6.4						30–50	30–50	0,40–0,80	0,60–1,00	0,60–1,00
6.5										

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data for MultiChange exchange head reamers

	Coating	CWC 10			TiAlN			TiAlN		
	Article no.	40 210 ... / 40 211 ...			40 220 ... / 40 221 ...			40 230 ... / 40 231 ...		
	Nominal Ø in mm	8,0–12,59	12,6–29,99	30,0–30,20	8,0–12,59	12,6–29,99	30,0–30,20	8,0–12,59	12,6–18,59	18,6–30,20
	Reaming allowance Ø	0,15–0,3	0,2–0,4	0,2–0,4	0,15–0,3	0,15–0,3	0,15–0,3	0,15–0,4	0,2–0,5	0,2–0,5
	Number of teeth	4/6	6	8	4/6	6	8	4/6	6	8
Index	v_c m/min	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.2	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.3	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.4	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.5	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.6	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.7	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.8	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.9	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.10	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.11	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.12	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.13	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.14	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.15	80–140	0,60–1,00	0,90–1,50	1,20–2,00						
1.16	80–140	0,60–1,00	0,90–1,50	1,20–2,00						
2.1	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.2	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.3	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.4	10–30				0,32–0,60	0,48–0,90	0,64–1,20			
2.5	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.6	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.7	10–20				0,32–0,60	0,48–0,90	0,64–1,20			
3.1	80–120							0,40–0,80	0,90–1,50	0,90–2,40
3.2	80–120							0,40–0,80	0,90–1,50	0,90–2,40
3.3	80–120							0,40–0,80	0,90–1,50	0,90–2,40
3.4	60–100							0,32–0,48	0,60–1,20	0,60–1,20
3.5	80–120							0,40–0,80	0,60–1,20	0,60–1,20
3.6	80–120							0,40–0,80	0,60–1,20	0,60–1,20
3.7	80–120							0,40–0,80	0,60–1,20	0,60–1,20
3.8	60–100							0,32–0,48	0,60–1,20	0,60–1,20
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12	80–120				0,40–1,00	0,60–1,50	0,80–2,00			
4.13										
4.14										
4.15										
4.16										
4.17	10–30				0,24–0,72	0,36–1,08	0,48–1,44			
4.18										
4.19										
5.1	10–30				0,60–1,40	0,90–1,80	1,20–2,00			
5.2	10–30				0,60–1,50	0,90–1,80	1,20–2,00			
5.3	10–30				0,60–1,60	0,90–1,80	1,20–2,00			
5.4	10–30				0,60–1,70	0,90–1,80	1,20–2,00			
5.5	10–25				0,60–1,80	0,90–1,80	1,20–2,00			
5.6	10–25				0,60–1,90	0,90–1,80	1,20–2,00			
5.7	10–20				0,20–0,48	0,30–0,72	0,40–0,96			
5.8	10–20				0,20–0,48	0,30–0,72	0,40–0,96			
5.9	10–30				0,20–0,48	0,30–0,48	0,48–1,00			
5.10	10–30				0,20–0,48	0,30–0,48	0,48–1,00			
5.11	10–30				0,20–0,48	0,30–0,48	0,48–1,00			
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for MultiChange exchange head reamers

	Coating	K10				PDC		
	Article no.	40 240 ... / 40 241 ...				40 245 ... / 40 246 ...		
	Nominal Ø in mm	8,0–12,59	12,6–29,99	30,0–30,20		8,0–12,59	12,6–29,99	30,0–30,20
	Reaming allowance Ø	0,15–0,5	0,15–0,5	0,15–0,5		0,15–0,5	0,15–0,5	0,15–0,5
	Number of teeth	4/6	6	8		4/6	6	8
Index	v_c m/min	f mm/rev.	f mm/rev.	f mm/rev.	v_c m/min	f mm/rev.	f mm/rev.	f mm/rev.
1.1								
1.2								
1.3								
1.4								
1.5								
1.6								
1.7								
1.8								
1.9								
1.10								
1.11								
1.12								
1.13								
1.14								
1.15								
1.16								
2.1								
2.2								
2.3								
2.4								
2.5								
2.6								
2.7								
3.1								
3.2								
3.3								
3.4								
3.5								
3.6								
3.7								
3.8								
4.1	**100–300**	0,40–1,20	0,60–1,80	0,80–2,40	**100–500**	0,40–1,20	0,90–2,10	1,20–2,80
4.2	**100–300**	0,40–0,80	0,60–1,20	1,20–2,00	**100–500**	0,40–1,20	0,90–2,10	1,20–2,80
4.3	**100–300**	0,40–0,80	0,60–1,20	1,20–2,00				
4.4	**100–300**	0,40–0,80	0,60–1,20	1,20–2,00				
4.5					**100–200**	0,40–1,20	0,90–2,10	1,20–2,80
4.6	**50–100**	0,40–1,00	0,60–1,50	0,80–2,00				
4.7	**50–150**	0,40–1,00	0,60–1,50	0,80–2,00				
4.8								
4.9								
4.10	**15–40**	0,48–1,00	0,72–1,50	0,96–2,00				
4.11	**15–40**	0,48–1,00	0,72–1,50	0,96–2,00				
4.12								
4.13								
4.14								
4.15					**10–40**	0,10–0,32	0,15–0,48	0,20–0,64
4.16	**25–50**	0,40–1,00	0,60–1,50	0,80–2,00	**100–250**	0,10–0,25	0,60–1,50	0,80–2,00
4.17								
4.18	**10–25**	0,60–1,00	0,90–1,50	1,20–2,00				
4.19	**10–25**	0,60–1,00	0,90–1,50	1,20–2,00				
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1								
6.2								
6.3								
6.4								
6.5								

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for Monomax

	Grade / coating	DBC						DBC			
	Article no. / type	40 648 ..., 40 649 ... / 56J.17, 56R.17 – ASG0706				40 640..., 40 641... / 56H.17, 56Q.17 – ASG0706			
	Nominal Ø in mm	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89
	Reaming allowance Ø	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40
	Number of teeth	4	6	6	6	4	6	6	6
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1												
3.2												
3.3												
3.4												
3.5												
3.6												
3.7												
3.8												
4.1	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.2	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.3	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.4	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.5	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.6												
4.7												
4.8												
4.9												
4.10												
4.11												
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for Monomax

	Grade / coating	HM-DBG-P / Ti700				HM-DBG-P / Ti700				
	Article no. / type	40 657 ... , 40 665 ... / 56H.65, 56Q.65 – ASG3000				40 652 ..., 40 653 ... / 56J.65, 56R.65 – ASG0106				
	Nominal Ø in mm	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4	6	6	6	4	6	6	6	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.2	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.3	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.4	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.5	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.6	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.7	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.8	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90						
1.9	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90						
1.10	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90						
1.11							80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.12							60–100	60–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.13							60–100	60–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.14							40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.15							40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.16							40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
2.1							45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.2							45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.3							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.4							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.5							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.6							45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.7							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
3.1	150–220	120–150	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.2	150–220	120–150	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.3	175–300	150–180	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.4	120–180	120–150	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
3.5	150–250	120–160	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.6	150–250	120–160	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.7	120–180	120–150	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
3.8	120–180	120–150	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11												
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

4

Cutting data standard values for Monomax

	Grade / coating	DST / CWC 10						DST / CWC 10					
	Article no. / type	40 625 ..., 40 626 ... / 56J.93, 56R.93 – ASG3000						40 635 ... , 40 636 ... / 56J.93, 56R.93 – ASG4000					
	Nominal Ø in mm	5,60–8,89		8,90–12,00	12,01–22,00	22,01–25,89		5,60–8,89		8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20		0,10–0,30	0,20–0,30	0,20–0,40		0,10–0,20		0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4		6	6	6		4		6	6	6	
Index	v_c m/min		f	f	f	f	v_c m/min		f	f	f	f	
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	
1.1	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.2	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.3	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.4	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.5	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.6	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.7	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.8													
1.9	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	**80–120**	**80–100**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.10	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	**80–120**	**80–100**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.11	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	**80–120**	**80–100**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.12													
1.13													
1.14													
1.15													
1.16													
2.1													
2.2													
2.3													
2.4													
2.5													
2.6													
2.7													
3.1													
3.2													
3.3	**175–300**	**150–180**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50	**175–300**	**150–180**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50	
3.4	**120–150**	**100–120**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	
3.5	**150–250**	**120–200**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50							
3.6	**150–250**	**120–200**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50							
3.7	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	
3.8	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	
4.1													
4.2													
4.3													
4.4													
4.5													
4.6	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.7	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.8													
4.9													
4.10													
4.11	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.12	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.13													
4.14													
4.15													
4.16													
4.17													
4.18													
4.19													
5.1													
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9													
5.10													
5.11													
6.1													
6.2													
6.3													
6.4													
6.5													

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

Cutting data standard values for Monomax

	Grade / coating	HM-DBG-P / Ti700				HM-TiN / CWN 10				
	Article no. / type	40 644 ..., 40 645 ... / 56H.65, 56Q.65 – ASG0106				40 605 ..., 40 606 ... / 56J.71, 56R.71 – ASG3000				
	Nominal Ø in mm	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4	6	6	6	4	6	6	6	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.2							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.3							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.4							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.5							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.6							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.7							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.8							30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.9							30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.10							30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.11	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.12	**60–100**	**60–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.13	**60–100**	**60–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.14	**40–60**	**40–60**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.15	**40–60**	**40–60**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.16	**40–60**	**40–60**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
2.1	**45–60**	**40–50**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.2	**45–60**	**40–50**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.3	**30–50**	**30–40**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.4	**30–50**	**30–40**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.5	**30–50**	**30–40**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.6	**45–60**	**40–50**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.7	**30–50**	**30–40**	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
3.1												
3.2												
3.3												
3.4												
3.5												
3.6												
3.7												
3.8												
4.1												
4.2												
4.3												
4.4												
4.5												
4.6							**80–150**	**80–120**	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.7							**120–200**	**120–150**	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.8												
4.9												
4.10												
4.11							**120–200**	**120–200**	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.12							**80–150**	**80–120**	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

4

Cutting data standard values for Fullmax

Type UNI		40 484 ... / 40 485 ... / 40 486 ... / 40 487 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.2	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.3	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.4	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.5	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.6	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.7	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.8	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.9	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.10	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.11	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.12	60–100	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.13	60–100	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.14													
1.15	40–60	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.16	40–60	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
2.1	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.2	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.3	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.4	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.5	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.6	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.7	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
3.1	120–180	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.2	120–180	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.3	200–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.4	120–150	0,50–0,60	0,10–0,20	0,50–0,70	0,10–0,20	1,00–1,30	0,20	1,00–1,30	0,20	1,30–1,60	0,20–0,30	1,50–1,80	0,30
3.5	200–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.6	200–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.7	120–150	0,50–0,60	0,10–0,20	0,50–0,70	0,10–0,20	1,00–1,30	0,20	1,00–1,30	0,20	1,30–1,60	0,20–0,30	1,50–1,80	0,30
3.8	120–150	0,50–0,60	0,10–0,20	0,50–0,70	0,10–0,20	1,00–1,30	0,20	1,00–1,30	0,20	1,30–1,60	0,20–0,30	1,50–1,80	0,30
4.1													
4.2													
4.3													
4.4													
4.5													
4.6													
4.7													
4.8													
4.9													
4.10													
4.11	150–250	0,50–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,40	0,20	1,40–1,70	0,20	1,60–1,90	0,20–0,30	1,90–2,20	0,30
4.12	100–150	0,40–0,60	0,10–0,20	0,60–0,80	0,10–0,20	1,00–1,30	0,20	1,20–1,40	0,20	1,30–1,60	0,20–0,30	1,60–1,80	0,30
4.13													
4.14													
4.15													
4.16													
4.17													
4.18													
4.19													
5.1													
5.2													
5.3													
5.4	40–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.5	40–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.6													
5.7													
5.8	40–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.9	30–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.10	30–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.11	30–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
6.1	40–60	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
6.2	40–60	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
6.3	30–50	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
6.4	30–50	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
6.5													

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

Cutting data standard values for Fullmax

Type K		40 477 ... / 40 478 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		6		6		8		8		8		8	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
3.1	200–250	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.2	200–250	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.3	225–300	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.4	120–150	0,60–0,90	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,60	0,20	1,20–1,60	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
3.5	225–300	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.6	225–300	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.7	120–150	0,60–0,90	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,60	0,20	1,20–1,60	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
3.8	120–150	0,60–0,90	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,60	0,20	1,20–1,60	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30

Type VA		40 401 ... / 40 402 ... / 40 403 ... / 40 404 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
2.1	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.2	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.3	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.4	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.5	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.6	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.7	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30

Type ALU		40 471 ... / 40 472 ... / 40 473 ... / 40 474 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
4.1	200–300	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
4.2	200–300	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
4.3	200–300	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
4.4	200–250	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
4.5	200–250	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30

Type H		40 475 ... / 40 476 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
6.1	40–60	0,20–0,30	0,10–0,20	0,20–0,30	0,10–0,20	0,40–0,60	0,20	0,50–0,60	0,20	0,50–0,70	0,20	0,60–0,80	0,20
6.2	40–60	0,20–0,30	0,10–0,20	0,20–0,30	0,10–0,20	0,40–0,60	0,20	0,50–0,60	0,20	0,50–0,70	0,20	0,60–0,80	0,20
6.3	30–50	0,20–0,30	0,10	0,20–0,30	0,10	0,40–0,60	0,10	0,50–0,60	0,10	0,50–0,70	0,20	0,60–0,80	0,20
6.4	30–50	0,20–0,30	0,10	0,20–0,30	0,10	0,40–0,60	0,10	0,50–0,60	0,10	0,50–0,70	0,20	0,60–0,80	0,20

4

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

Cutting data standard values for solid carbide reamers

	40 430 ...			40 420 ... / 40 421 ... / 40 430 ... / 40 431 ... / 40 410 ... / 40 400 ...							
	uncoated	to Ø 0,94 mm		uncoated	TiAlN	to Ø 5 mm		to Ø 8 mm		to Ø 10 mm	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	v_c m/min	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1											
1.2	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.3											
1.4	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.5	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.6	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.7	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.8	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.9	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.10	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.11											
1.12											
1.13	6–8	0,1–0,15	0,03–0,05	8–12	12–20	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.14											
1.15											
1.16											
2.1											
2.2											
2.3											
2.4											
2.5											
2.6											
2.7											
3.1	10–15	0,1–0,15	0,03–0,05	12–20	20–35	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.2											
3.3	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.4	8–10	0,1–0,15	0,03–0,05	10–15	15–20	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.5											
3.6	10–15	0,1–0,15	0,03–0,05	12–20	20–35	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.7											
3.8											
4.1											
4.2	10–30	0,12–0,16	0,03–0,05	20–60		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.3											
4.4	10–15	0,12–0,16	0,03–0,05	20–30		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.5											
4.6	10–30	0,12–0,16	0,03–0,05	20–80		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.7	10–25	0,12–0,16	0,03–0,05	25–60		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.8											
4.9	8–15	0,12–0,16	0,03–0,05	15–30		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.10											
4.11											
4.12	10–25	0,12–0,16	0,03–0,05	20–50		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.13											
4.14											
4.15	6–10	0,12–0,16	0,03–0,05	10–15		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.16	6–10	0,06–0,1	0,03–0,05	15–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
4.17	5–10	0,06–0,1	0,03–0,05	10–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
4.18	5–8	0,06–0,1	0,03–0,05	7–12		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
4.19	5–8										
5.1											
5.2	8–12	0,06–0,1	0,03–0,05	10–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.3											
5.4											
5.5				8–10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.6	5–8	0,06–0,1	0,03–0,05								
5.7				6–10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.8	3–5	0,06–0,1	0,03–0,05	5–8		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.9	5–8	0,06–0,1	0,03–0,05	6–10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.10											
5.11	3–5	0,06–0,1	0,03–0,05	6–8		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
6.1											
6.2											
6.3											
6.4											
6.5											

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for solid carbide reamers

	40 420 ... / 40 421 ... / 40 430 ... / 40 431 ... / 40 410 ... / 40 400 ...											
	uncoated	TiAlN	to Ø 12 mm		to Ø 15 mm		to Ø 20 mm		to Ø 25 mm		to Ø 30 mm	
Index	v_c m/min	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1												
1.2	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.3												
1.4	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.5	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.6	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.7	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.8	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.9	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.10	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.11												
1.12												
1.13	8–12	12–20	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1												
3.2	12–20	20–35	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.3	12–15	20–30	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.4	10–15	15–20	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.5												
3.6												
3.7	12–20	20–35	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.8												
4.1												
4.2	20–60		0,15–0,25	0,15–0,2	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.3												
4.4	20–30		0,15–0,25	0,15–0,2	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.5												
4.6	20–80		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.7	25–60		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.8												
4.9	15–30		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.10												
4.11												
4.12												
4.13	20–50		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.14												
4.15	10–15		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.16	15–20		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
4.17	10–20		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
4.18	7–12		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
4.19												
5.1												
5.2	10–20		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.3												
5.4												
5.5	8–10		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.6												
5.7	6–10		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.8	5–8		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.9	6–10		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.10												
5.11	6–8		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data for HSS-E reamers

		40 110 ... / 40 115 ... / 40 139 ... / 40 140 ... 40 145 ... / 40 150 ... / 40 155 ... / 40 160 ...									
		to Ø 5 mm		to Ø 8 mm		to Ø 12 mm		to Ø 15 mm		to Ø 20 mm	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1	18	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.2	15	0,1–0,15	0,1	0,2–0,3	0,2–0,3	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.3											
1.4	12	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.5											
1.6											
1.7											
1.8	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.9	14	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.10	12	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.11	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.12											
1.13											
1.14											
1.15											
1.16											
2.1	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
2.2	8	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
2.3											
2.4											
2.5											
2.6											
2.7											
3.1	14	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.2											
3.3	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.4	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.5	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.6	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.7	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.8	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
4.1	20	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.2											
4.3											
4.4	18	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.5	16	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.6	20	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.7											
4.8											
4.9											
4.10											
4.11											
4.12											
4.13	14	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.14											
4.15	10	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.16	22	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.17											
4.18											
4.19											
5.1	6	0,1–0,15	0,1	0,2	0,2	0,25	0,2	0,3	0,2	0,4	0,3
5.2											
5.3											
5.4											
5.5	5	0,1–0,15	0,1	0,2	0,2	0,25	0,25	0,3	0,2	0,4	0,3
5.6											
5.7											
5.8											
5.9											
5.10	3	0,1	0,1	0,1	0,2	0,12	0,2	0,15	0,2	0,2	0,2
5.11											
6.1											
6.2											
6.3											
6.4											
6.5											

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for HSS-E reamers

		40 110 ... / 40 115 ... / 40 139 ... / 40 140 ... 40 145 ... / 40 150 ... / 40 155 ... / 40 160 ...							
		to Ø 25 mm		to Ø 30 mm		to Ø 40 mm		to Ø 50 mm	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1	18	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.2	15	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.3									
1.4	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.5									
1.6									
1.7									
1.8	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.9	14	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.10	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.11	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.12									
1.13									
1.14									
1.15									
1.16									
2.1	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
2.2	8	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	14	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.2									
3.3	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.4	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.5	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.6	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.7	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.8	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
4.1	20	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.2									
4.3									
4.4	18	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.5	16	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.6	20	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.7									
4.8									
4.9									
4.10									
4.11									
4.12									
4.13	14	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.14									
4.15	10	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.16	22	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.17									
4.18									
4.19									
5.1	6	0,5	0,4	0,5	0,4	0,6	0,4	0,8	0,4
5.2									
5.3									
5.4									
5.5	5	0,5	0,4	0,5	0,4	0,6	0,4	0,8	0,4
5.6									
5.7									
5.8									
5.9									
5.10	3	0,25	0,3	0,25	0,3	0,3	0,4	0,3	0,4
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

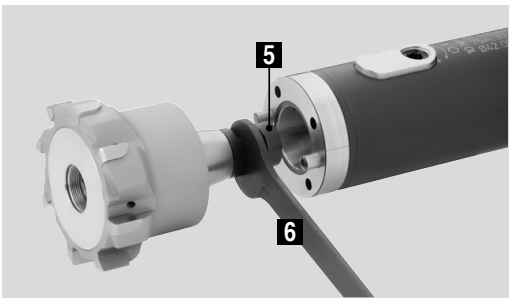
4

Cutting data for countersinks with irregular pitch

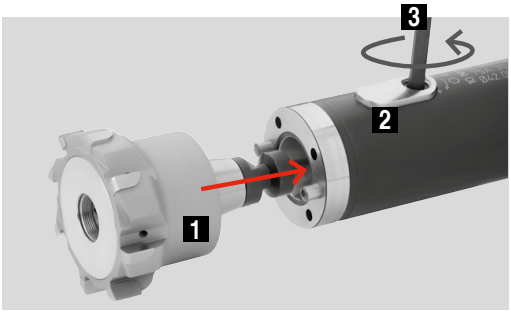
		30 116 ... TPX76S						30 140 ... Ti50					
		Ø 4,3–8,0 mm	Ø 8,00–12,4 mm	Ø 12,40–16,5 mm	Ø 16,5–20,5 mm	Ø 20,5–25,0 mm	Ø 25,0–31,0 mm	Ø 4,3–8,0 mm	Ø 8,0–12,4 mm	Ø 12,4–16,5 mm	Ø 16,5–20,5 mm	Ø 20,5–25,0 mm	Ø 25,0–31,0 mm
Index	v_c m/min	f in mm/rev.						v_c m/min	f in mm/rev.				
1.1	**60**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**36**	0,08	0,10	0,12	0,14	0,18	0,22
1.2	**60**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**36**	0,08	0,10	0,12	0,14	0,18	0,22
1.3	**60**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.4	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.5	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.6	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.7	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**30**	0,06	0,08	0,1	0,12	0,14	0,18
1.8	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**30**	0,06	0,08	0,1	0,12	0,14	0,18
1.9	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.10	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.11	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.12	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**30**	0,06	0,08	0,1	0,12	0,14	0,18
1.13	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	8	0,04	0,05	0,06	0,08	0,10	0,12
1.14	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	12	0,04	0,05	0,06	0,08	0,10	0,12
1.15	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	12	0,04	0,05	0,06	0,08	0,10	0,12
1.16	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	12	0,04	0,05	0,06	0,08	0,10	0,12
2.1	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.2	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.3	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.4	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.5	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.6	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.7	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
3.1	**50**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.2	**45**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.3	**45**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.4	**45**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**12**	0,1	0,12	0,14	0,18	0,2	0,25
3.5	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.6	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.7	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.8	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
4.1	**80**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**	42	0,08	0,1	0,12	0,14	0,18	0,22
4.2	**80**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**	42	0,08	0,1	0,12	0,14	0,18	0,22
4.3	**80**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**	42	0,08	0,1	0,12	0,14	0,18	0,22
4.4	**60**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**							
4.5	**60**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**							
4.6	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.7	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.8	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.9	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.10	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.11	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.12	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.13	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,3**	42	0,12	0,14	0,18	0,20	0,24	0,30
4.14	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,12	0,14	0,18	0,20	0,24	0,30
4.15	**25**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**							
4.16														
4.17	**25**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**							
4.18	**15**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,12**							
4.19	**15**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,12**							
5.1	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.2	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.3	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.4	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.5	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.6	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.7	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.8	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.9	25	0,05	0,06	0,07	0,08	0,09	0,12							
5.10	15	0,05	0,06	0,07	0,08	0,09	0,12							
5.11	15	0,05	0,06	0,07	0,08	0,09	0,12							
6.1	12	0,05	0,06	0,07	0,08	0,09	0,12							
6.2	8	0,05	0,06	0,07	0,08	0,09	0,12							
6.3	8	0,05	0,06	0,07	0,08	0,09	0,12							
6.4	8	0,05	0,06	0,07	0,08	0,09	0,12							
6.5														

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

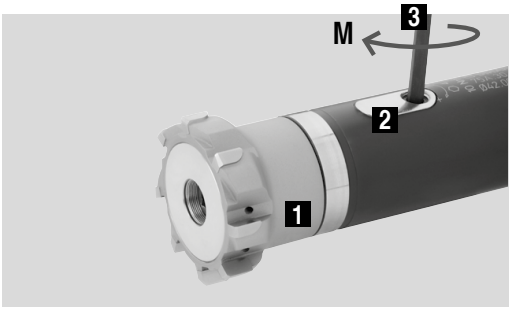
REAMAX TS – Assembly instructions



Clean the Morse taper adapter/face contact → grease-free.
Screw the pull stud (5) into the reaming head and tighten using the open-ended spanner (6).

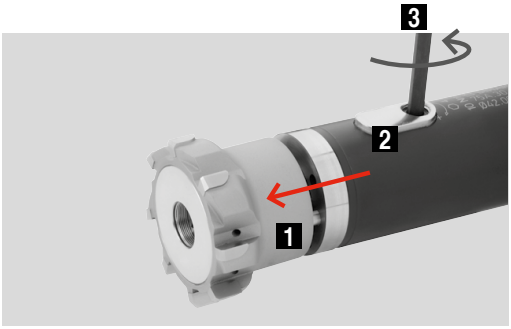


Use key (3) to open jaws (2), but do not fully release, and insert reaming head (1).

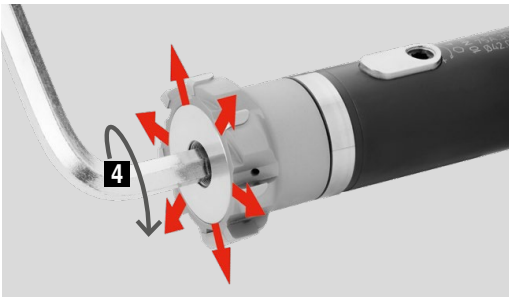


Use the key (3) to close the jaws (2), observe the recommended tightening torque. When inserting the reaming head (1), this is pulled into its final position when the jaws (2) are closed.

x Range	Tightening torque (M)
18,000 – 19,999	1,5 Nm
20,000 – 21,999	2,5 Nm
22,000 – 26,999	4 Nm
27,000 – 34,999	5 Nm
35,000 – 41,999	6 Nm
42,000 – 51,999	10 Nm
52,000 – 70,000	13 Nm



When removing the reamer head (1), this is pressed out of its position by the jaws (2) and can thus be easily removed from the holder:
Use key (3) to open the jaws (2) but do not fully release, and remove reamer head (1).



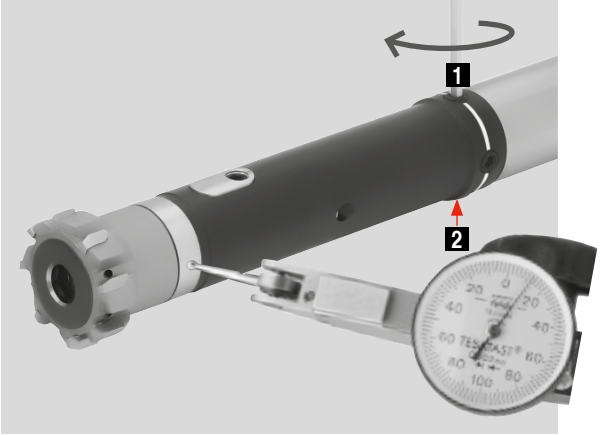
Adjustment for wear compensation:
The smallest drilling tolerances up to IT 4 can be achieved through adjustment with the hex key (4).

REAMAX TS – Operating instructions

Aligning the DAH Zero holder

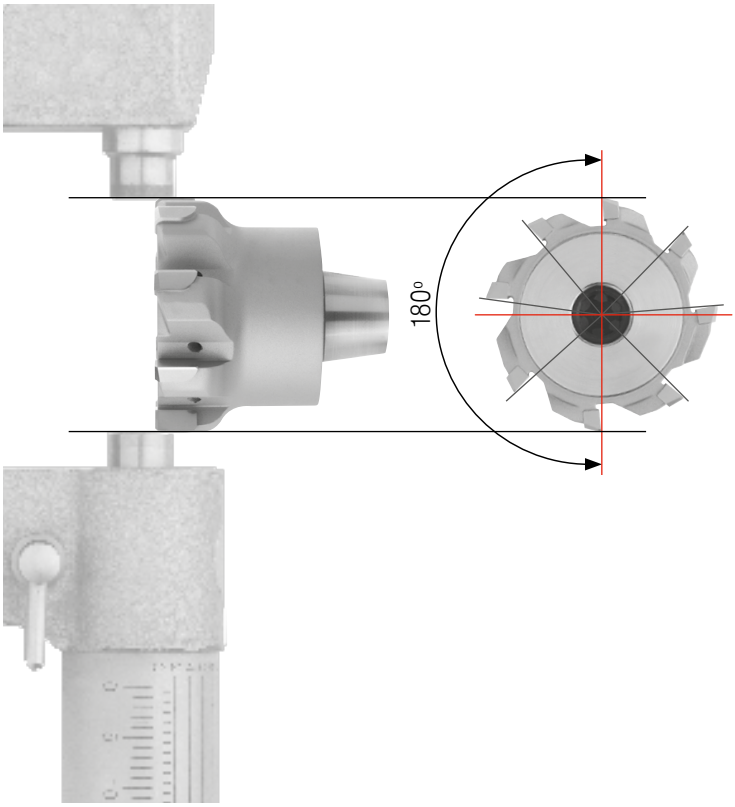
The tool is recommended for radial alignment of max. 20 µm.

1. Loosen all adjustment screws and pre-load with 1 Nm (new tools are already supplied like this).
2. Place dial gauge with µm display on the ground bezel diameter.
3. Turn the tool to determine the point with the largest runout error using the dial gauge.
4. Adjust the corresponding adjustment screw with the hex key clockwise (1) until half the runout error has been corrected. In doing so, over-tighten by approx. 5 µm.
5. Release the opposite adjustment screw (2) by the over-tightened amount.
6. Adjust all 4 adjustment screws until the runout is < 2 µm.

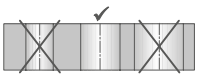


Please note:
- the runout must be checked and if necessary re-aligned after an adapter changeover, change of application, after any adjustment for wear compensation and before every re-commissioning, using adjustment steps 1 to 6
- adjustment screws must always be tightened during usage with at least 1 Nm
- the max. re-adjustment torque is 4,5 Nm

Caution!
- uneven angle distribution!
- there are 2 cutting edges 180° opposite each other = measuring teeth
- measure the diameter at the front on the cutting edge (due to back taper, see diagram)
- avoid damage to the cutting edge

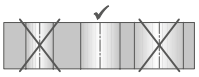


Problems / possible causes / solutions



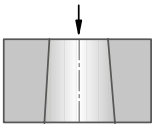
Hole too large

- runout error for reamer in the spindle → use DAH compensation system and correct runout
- inaccurate alignment, reamer back-cuts → correct alignment and use DPS floating holder
- built-up edge → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant
- reamer too large → have reamer adapted



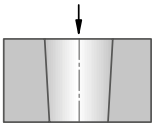
Hole too small

- worn reamer → have reamer adjusted, replaced or repaired
- reaming allowance too small → increase reaming allowance
- cutting force too high → reduce feed or select other lead geometry (ASG)
- reamer too small → have reamer adjusted, replaced or repaired



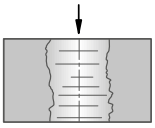
Conical hole, tapered backwards

- inaccurate alignment → correct alignment and use DPS floating holder
- misalignment between headstock and turret → correct turret and use DPS floating holder



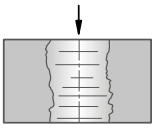
Conical hole, tapered forwards

- poor alignment, cutting edges push initially → correct alignment and use DPS floating holder



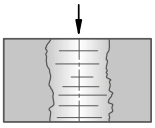
Hole is not round

- reamer runout error too large → correct the runout with DAH compensation system
- alignment error → correct alignment error and use DPS floating holder
- asymmetric initial cutting through angled entry surface → countersink hole
- workpiece tensioning → correct clamping of the workpieces
- poor pre-machining → optimise pre-machining
- feed too high → reduce feed



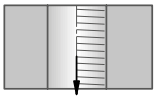
Hole exhibits chatter marks

- cutting speed v_c too high → reduce cutting speed
- OAL to DC ratio too high→ reduce the speed of entry, pilot the bore or select other lead geometry (ASG)



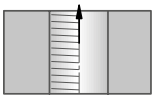
Non clean-up

- built-up edge → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant
- cutting edge worn→ have cutting edge repaired or replace the tool
- reamer runout error → correct the runout with DAH compensation system
- no or insufficient cooling, chips are getting trapped → use thro' coolant supply and increase coolant pressure
- unsuitable coolant → increase the oil content of the coolant
- incorrect cutting data→ use data according to catalogue recommendation



Grooves in the hole "feed marking"

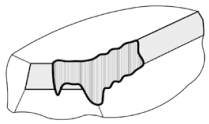
- faulty cutting edge (edge breakage) → have reamer replaced or repaired
- built-up edges → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant



Grooves in the hole "retraction marking"

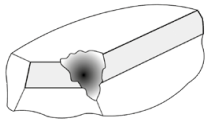
- cutting edges moved too far out of the hole → move no more than lead length + 2 mm out of the hole
- material springs back → do not retract at high speed but with increased (2-3 times) feed rate

Types of wear



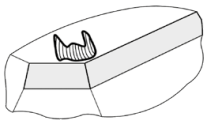
Wear on clearance face

Reduce the cutting speed and select a more wear resistant cutting material or coating.



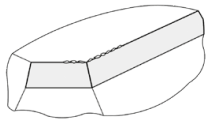
Cutting edge breakage

Reduce feed and reaming allowance. In the case of interrupted holes, use coated carbide instead of DST.



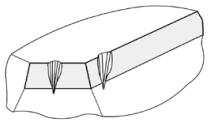
Cratering

Reduce the cutting speed and use a positive cutting edge geometry.



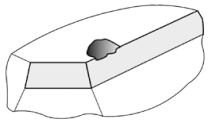
Edge breakages

Increase the cutting speed and use larger rake angle.



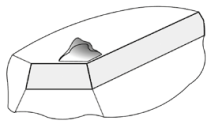
Notch wear

Reduce the cutting speed and select a more wear resistant cutting material or coating.



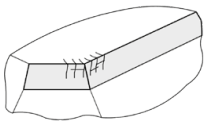
Fatigue fracture

Reduce feed, increase reamer stability.



Built-up edge

Use positive cutting edge geometry, increase the oil content of the coolant, reduce the cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material.



Cracks at right angles to the cutting edge

Use sufficient coolant and thro' coolant, reduce the cutting speed.

Tolerance classes covered with 1/100 reamer

The most common tolerance is H7, so most reamers configured for an H7 fit tolerance.
With the 1/100 reamers, increments of 0,01 mm can be covered, but are also suitable for various other dimensions.
For example, a 1/100 reamer diameter 8,02 mm can be used for a 8,0 fit F7.
Other fit sizes shown in the table.

Tolerance zone	Nominal Ø in mm											
	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0
A9				4,29	5,29	6,29	7,30	8,30	9,30	10,30	11,32	12,32
A11	1,31	2,31	3,31	4,32	5,32	6,32	7,35	8,35	9,35	10,35	11,37	12,37
B8				4,15	5,15	6,15	7,16	8,16	9,16	10,16		
B9				4,16	5,16	6,16	7,17	8,17	9,17	10,17	11,18	12,18
B10	1,17	2,17	3,17	4,17	5,17	6,17	7,19	8,19	9,19	10,19	11,20	12,20
B11	1,18	2,18	3,18	4,19	5,19	6,19	7,22	8,22	9,22	10,22	11,23	12,23
C8				4,08	5,08	6,08	7,09	8,09	9,09	10,09	11,11	12,11
C9	1,07	2,07	3,07	4,09	5,09	6,09	7,10	8,10	9,10	10,10	11,12	12,12
C10	1,09	2,09	3,09	4,10	5,10	6,10	7,12	8,12	9,12	10,12	11,14	12,14
C11	1,10	2,10	3,10	4,12	5,12	6,12	7,15	8,15	9,15	10,15	11,18	12,18
D7											11,06	12,06
D8				4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,06	12,06
D9				4,05	5,05	6,05	7,06	8,06	9,06	10,06	11,08	12,08
D10	1,05	2,05	3,05	4,06	5,06	6,06	7,08	8,08	9,08	10,08	11,10	12,10
D11	1,06	2,06	3,06	4,08	5,08	6,08	7,10	8,10	9,10	10,10	11,13	12,13
E7							7,03	8,03	9,03	10,03	11,04	12,04
E8	1,02	2,02	3,02	4,03	5,03	6,03	7,04	8,04	9,04	10,04	11,05	12,05
E9	1,03	2,03	3,03	4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,06	12,06
F7	1,01	2,01	3,01				7,02	8,02	9,02	10,02	11,02	12,02
F8	1,01	2,01	3,01	4,02	5,02	6,02	7,02	8,02	9,02	10,02	11,03	12,03
F9	1,02	2,02	3,02	4,03	5,03	6,03	7,03	8,03	9,03	10,03	11,04	12,04
F10				4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,07	12,07
G7				4,01	5,01	6,01	7,01	8,01	9,01	10,01		
H7										10,01	11,01	12,01
H8				4,01	5,01	6,01	7,01	8,01	9,01	10,01	11,02	12,02
H9	1,01	2,01	3,01	4,02	5,02	6,02	7,02	8,02	9,02	10,02	11,03	12,03
H10	1,03	2,03	3,03	4,03	5,03	6,03	7,04	8,04	9,04	10,04	11,05	12,05
H11	1,04	2,04	3,04	4,05	5,05	6,05	7,06	8,06	9,06	10,06	11,08	12,08
H12	1,07	2,07	3,07	4,08	5,08	6,08	7,10	8,10	9,10	10,10	11,13	12,13
H13	1,11	2,11	3,11	4,14	5,14	6,14	7,18	8,18	9,18	10,18	11,22	12,22
J6				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
J7				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
J8	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS7				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS8	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS9	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,01	12,01
K8	0,99	1,99	2,99				6,99	7,99	8,99	9,99	10,99	11,99
M6							6,99	7,99	8,99	9,99	10,99	11,99
M7							6,99	7,99	8,99	9,99	10,99	11,99
M8	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,99	11,99
N6				3,99	4,99	5,99						
N7	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,99	11,99
N8	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,98	11,98
N9	0,98	1,98	2,98	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,98	11,98
N10	0,98	1,98	2,98	3,98	4,94	5,98	6,98	7,98	8,98	9,98	10,98	11,98
N11	0,98	1,98	2,98	3,98	4,94	5,98	6,98	7,98	8,98	9,98	10,97	11,97
P6	0,99	1,99	2,99								10,98	11,98
P7	0,99	1,99	2,99				6,98	7,98	8,98	9,98	10,98	11,98
P8	0,99	1,99	2,99	3,98	4,98	5,98					10,97	11,97
R6							6,98	7,98	8,98	9,98		
R7				3,98	4,98	5,98	6,98	7,98	8,98	9,98	10,97	11,97
S6				3,98	4,98	5,98					10,97	11,97
S7	0,98	1,98	2,98	3,98	4,98	5,98	6,97	7,97	8,97	9,97	10,97	11,97
U6							6,97	7,97	8,97	9,97		
U7				3,97	4,97	5,97	6,97	7,97	8,97	9,97		
X7				3,97	4,97	5,97						
X8	0,97	1,97	2,97				6,96	7,96	8,96	9,96	10,95	11,95
X9	0,97	1,97	2,97	3,96	4,96	5,96	6,95	7,95	8,95	9,95		
Z7	0,97	1,97	2,97	3,96	4,96	5,96	6,96	7,96	8,96	9,96	10,95	11,95
Z8	0,97	1,97	2,97	3,96	4,96	5,96	6,95	7,95	8,95	9,95	10,94	11,94
Z9				3,95	4,95	5,95						
Z10	0,96	1,96	2,96	3,95	4,95	5,95	6,94	7,94	8,94	9,94	10,93	11,93
ZA7	0,96	1,96	2,96	3,95	4,95	5,95	6,94	7,94	8,94	9,94		
ZA8							6,94	7,94	8,94	9,94	10,93	11,93
ZB8	0,95	1,95	2,95	3,94	4,94	5,94					10,90	11,90
ZB9	0,95	1,95	2,95	3,94	4,94	5,94	6,92	7,92	8,92	9,92	10,90	11,90

Coatings

AlTiN
- ▲ AlTiN nanolayer coating
- ▲ maximum application temperature: 1100 °C

Ti700
- ▲ TiAlN multilayer coating
- ▲ maximum application temperature: 1100 °C

DBC
DLC
- ▲ diamond-like carbon coating
- ▲ specially for machining non-ferrous metals
- ▲ maximum application temperature: 400 °C

DBG-P
TiAlN
- ▲ TiAlN multilayer coating
- ▲ maximum application temperature: 900 °C

Ti50
- ▲ TiN multilayer coating
- ▲ maximum application temperature: 400 °C

TiN
CWN10
- ▲ TiN coating
- ▲ maximum application temperature: 450 °C

TPX76S
- ▲ TiN-TiAlN-ZrN Monolayer coating
- ▲ maximum application temperature: 800 °C

Type

AMZ
- ▲ carbide, TiAlN-coated
- ▲ ISO | P10 | K10 | **N10** | S10
- ▲ the coated carbide grade for aluminium machining

CWN15
- ▲ carbide, TiN-coated
- ▲ ISO | **K15**
- ▲ special carbide grade for abrasive aluminium alloys

DST
CWC10
- ▲ cermet, uncoated
- ▲ ISO | **P15** | **M10** | K10
- ▲ the uncoated cermet grade for finish machining stainless and hardened steel
- ▲ particularly wear resistant thanks to high heat resistance

CWN 2135
- ▲ carbide, TiCN-TiNB-coated
- ▲ ISO | P35 | **M30** | S35
- ▲ the turning grade for general stainless machining

CWK10
- ▲ carbide, uncoated
- ▲ ISO | **K10**
- ▲ the uncoated carbide grade for universal application

DCX3110
- ▲ carbide, TiCN-Al_2O_3-coated
- ▲ ISO | P05 | **K10**
- ▲ the wear-resistant grade for machining cast iron materials at high cutting speeds in a continuous cut

CWK15
- ▲ carbide, uncoated
- ▲ ISO | **K15** | **N15**
- ▲ the uncoated carbide grade for machining aluminium and other non-ferrous metals

HCR1135
- ▲ carbide, TiCN-Al_2O_3-coated
- ▲ ISO | **P35** | M25 | S25
- ▲ the tough alternative for heavily interrupted cut and unstable conditions

TiN
CWN10
- ▲ carbide, TiN-coated
- ▲ ISO | **K10**
- ▲ the carbide grade for machining steels, stainless steels and non-ferrous metals

HCX1125
- ▲ carbide, TiCN-Al_2O_3-coated
- ▲ ISO | P25 | M20 | **K30**
- ▲ the first choice for universal machining of steels



New products for machining technicians

NEW BluFlex 2



It gets even better

As well as its unbeatable, innovative and highly precise characteristics, the BluFlex 2 system also boasts a modern high contrast OLED display. The MicroKom BluFlex 2 app and the Bluetooth-capable precision adjustment head ensure incredibly simple handling.

NEW hi.flex



The hi.flex system distinguishes itself with its high flexibility. With just a single adjustable head, a variety of boring bars and intelligently designed adapter solutions, it covers the entire diameter range from 6 to 365 mm.



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling 5

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder	3
Contents Overview Accessories	4
Product programme	5–48
Technical Information	
Cutting Data	49–53
Maximum Speeds and Scale Accuracy	54
Maximum overhang length LTA	55
Coatings	55

KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

F	Fine Machining
M	Medium Machining
R	Rough Machining

	Smooth cut
	Irregular cutting depth
	Interrupted cut

	Central internal coolant
	Axial coolant (Form AD)
	Coolant supply either via the flange or centrally

ABS	**KOMET ABS** – modular coupling system for rotating and stationary tools
STM	Modular SpinTools interface
ER 32	System-independent ER 32 interface

Micron-precise display resolution: 0.001 mm in diameter

Universal ABS interface

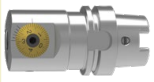
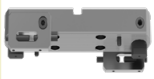


Modern, high contrast OLED display on the precision adjustment head itself

Absolute position measuring system

Additional Bluetooth Low Energy interface for easy display on any conventional smartphone

Toolfinder

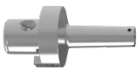
		System		Diameter range per head in mm	Digital	Analogue	ABS Modular	STM Modular	ER 32 Modular	Monoblock	Through spindle	Comments	Pages
Machining	Finishing	BluFlex 2 – precision adjustment head	 6,0–125 mm	6,0–125	✓		✓				✓	Through spindle larger head diameters	5–8
		hi.flex – precision adjustment head	 6,0–125 mm	6,0–125		✓	✓				✓	Through spindle larger head diameters	5–8
		Micro Boring Head	 0,3–19,1 mm	0,3–7,1 | 0,3–19,1	✓	✓							12+13
		Fine boring head	 14,7–24,1 mm	14,7–17,1 | 16,7–20,1 | 19,7–24,1		✓					✓		14+15
		Multi-Head – Fine boring head	 3,0–320 mm	3,0–320		✓		✓		✓	✓	Through spindle larger head diameters	16+17
		Single point boring head	 3,0–88,1 mm	3,0–88,1	✓	✓		✓	✓		✓	Through spindle larger head diameters	18–26
		Single point finish boring heads	 23,9–116,1 mm	23,9–31,1 | 30,9–40,1 | 39,9–51,1 | 50,9–67,1 | 66,9–87,1 | 86,9–116,1	✓	✓		✓			✓		27–29
		Vario-Head – boring and fine boring head	 3–152 mm	3–152	✓			✓					30+31
		Single point finish boring heads	 86–402 mm	86–402		✓		✓			✓		32+33
		Console tool with baseplate	 150–655 mm	150–205 | 200–255 | 250–305 | 300–355 | 350–405 | 150–205 | 200–255 | 250–305 | 300–355 | 350–405		✓					✓	also available with roughing head	
		Console tool with slide	 650–2205 mm	650–1105 | 1100–1655 | 1650–2205		✓					✓	also available with roughing head	
	Roughing - Finishing	Twin edged rough / fine boring head	 29,5–115,5 mm	29,5–40,1 | 39,5–50,5 | 49,5–66,5 | 65,5–87,5 | 86,5–115,5		✓		✓			✓		34+35
	Roughing	Twin rough boring head	 23,5–153,0 mm	23,5–30,5 | 29,5–40,1 | 39,5–50,5 | 49,5–66,5 | 65,5–87,5 | 86,5–115,5 | 114,5–153,0		✓		✓			✓		36–38

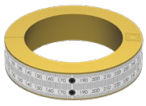
This article can be found in our online shop at cuttingtools.ceratizit.com

Overview of base adapters and accessories

System			DIN 69871	MAS-BT	HSK-A	Cylindrical shank
Base adapter		ABS	ABS base adapters can be found in → **Chapter 16, Adapters.**			
Base adapter		STM	40	41	42	43

Accessories

Extension		STM	46
Reduction		STM	44+45
Collet Chuck		STM	39
Shell mill adapter		STM	39

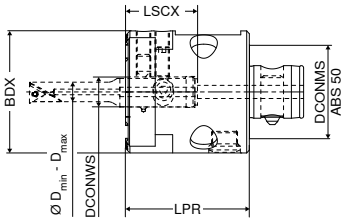
General		
Balancing rings		24
Insert		9–11 47+48

MicroKom – BluFlex 2 – precision spindle head

▲ Via the App, the MicroKom BluFlex 2 display in the head can also be transferred to a standard smartphone (62 840 16097)

Scope of supply:
incl. Battery

ABS





D_{min} - D_{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	BDX mm	LPR mm	LSCX mm	without Bluetooth NEW W4 Article no. 62 820 ... EUR		with Bluetooth NEW W4 Article no. 62 840 ... EUR	
6 - 125	M0430100	ABS 50	16	28	65	71	38	2.208,00	16097		
6 - 125	M0430000	ABS 50	16	28	65	71	38			2.208,00	16097

Spare parts

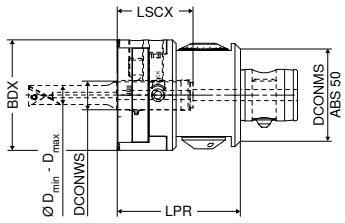
for Article no.		XX Clamping screw Article no. 62 950 ... EUR		W7 Clamping screw Article no. 62 950 ... EUR		W7 Clamping screw Article no. 62 950 ... EUR		W7 Clamping sleeve Article no. 62 950 ... EUR		W7 Battery cover Article no. 62 950 ... EUR	
62 820 16097	M8x1x12/SW4	5,93	13989	M8x1x20/SW4	1,57	13700	M5x14/SW4	2,28	18600	6,56	18500	8,75	18400
62 840 16097	M8x1x12/SW4	5,93	13989	M8x1x20/SW4	1,57	13700	M5x14/SW4	2,28	18600	6,56	18500	8,75	18400

Suitable ABS adapters can be found in → **Chapter 16, Adapters.**

MicroKom – hi.flex – precision adjustment head

- **For boring bars Ø 16 mm and bridges**
- With internal coolant supply
- LSCX = Boring depth

ABS





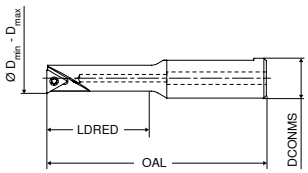
D_{min} - D_{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	BDX mm	LPR mm	LSCX mm	NEW W4 Article no. 62 800 ... EUR	
6 - 125	M0501000	ABS 50	16	28	60	67	39,7	1.112,00	**16097**

	XX Clamping screw		W7 Clamping screw		W7 Clamping screw	
Spare parts	**Article no. 62 950 ...**		**Article no. 62 950 ...**		**Article no. 62 950 ...**	
for Article no.		**EUR**		**EUR**		**EUR**
62 800 16097	M8x1x12/SW4	5,93 **13989**	M8x8/SW4	1,57 **14700**	M8x1x20/SW4	1,57 **13700**

Suitable ABS adapters can be found in → **Chapter 16, Adapters.**

MicroKom – Steel boring bar for hi.flex, BluFlex 2

▲ With internal coolant supply





D_{min} - D_{max} mm	KOMET no.	OAL mm	LDRED mm	DCONMS $_{h6}$ mm	Insert	NEW W4 Article no. 62 850 ... EUR	
6 - 8	B0520100	71,7	21,0	16	WO.. 02T0	119,60	00600
8 - 12	B0520120	77,4	28,0	16	TO.. 06T1	123,60	00800
10 - 14	B0520140	81,8	34,0	16	TO.. 0902	118,40	01000
12 - 18	B0520160	88,2	42,0	16	TO.. 0902	128,80	01200
14 - 18	B0520180	94,4	50,0	16	TO.. 0902	127,40	01400
18 - 25	B0520220	100,0	60,0	16	TO.. 0902	135,20	01800
22 - 26	B0520260	108,0	68,5	16	TO.. 1403	154,80	02200

Suitable inserts can be found on → **Page 9–11**.



Spare parts	Article no. 62 950 ... EUR	
Insert		
TO.. 06T1	2,71	12800
TO.. 0902	2,36	12000
TO.. 1403	2,36	12600
WO.. 02T0	2,36	11800

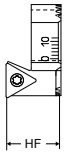
MicroKom – Insert holder for serrated body hi.flex, BluFlex 2

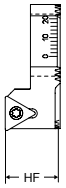
▲ With internal coolant supply

Scope of supply:

▲ without inserts

▲ incl. mounting screws







for	KOMET no.	HF mm	Insert	NEW W4 Article no. 62 863 ... EUR	
62 861 06300	M0520101	13,5	TO.. 06T1	137,80	04400
62 861 06300 / 62 860 12500	M0520151	13,5	TO.. 0902	140,40	12500

Suitable inserts can be found on → **Page 10+11**.



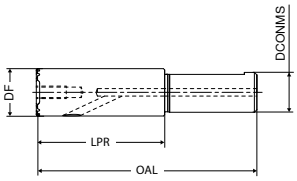
Spare parts	Article no. 62 950 ... EUR	
for Article no.		
62 863 04400	2,71	09700
62 863 12500	2,36	09900

MicroKom – Serrated body for hi.flex, BluFlex 2

▲ With internal coolant supply

Scope of supply:

without insert holder





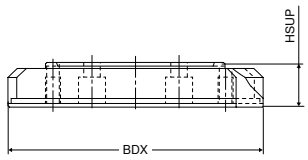
D_{min} - D_{max} mm	KOMET no.	DCONMS mm	OAL mm	LPR mm	DF mm	NEW W4 Article no. 62 861 ... EUR	
25 - 63	M0590100	16	88,5	65	19	140,40	06300





Spare parts	Article no. 62 950 ... EUR		Article no. 62 950 ... EUR	
for Article no.				
62 861 06300	0,87	00000	1,57	19100

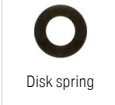
MicroKom – Bridge for hi.flex, BluFlex 2





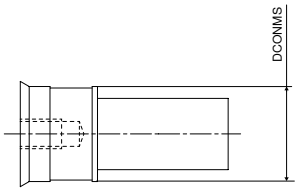
D_{min} - D_{max} mm	KOMET no.	BDX mm	HSUP mm	WT kg	NEW W4 Article no. 62 860 ... EUR	
90 - 125	M0580101	85	12	0,147	193,80	12500





Spare parts	Article no. 62 950 ... EUR		Article no. 62 950 ... EUR	
for Article no.				
62 860 12500	0,87	00000	1,57	19100

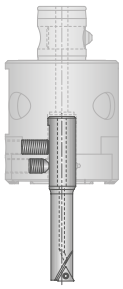
MicroKom – Filling piece for hi.flex, BluFlex 2

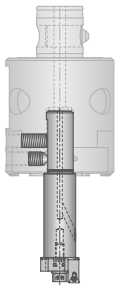


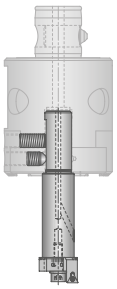


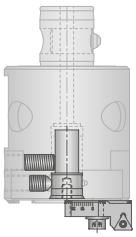
DCONMS	KOMET no.	NEW W4 Article no. 62 862 ... EUR	
mm			
16	M0590501	18,72	09300

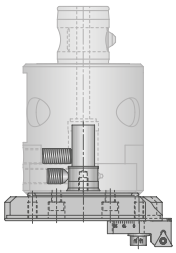
Overview of diameters available







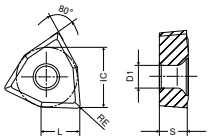




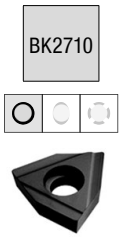
Ø 6–25	Ø 25–44	Ø 44–63	Ø 63–93	Ø 90–125
Boring Bar	Serrated body	Serrated body	Filling piece	Filling piece
62 850 ...	62 861 06300	62 861 06300	62 862 09300	62 862 09300
	+	+	+	+
	Insert holder	Insert holder	Insert holder	Bridge
	62 863 04400	62 863 12500	62 863 12500	62 860 12500
				+
				Insert holder
				62 863 12500

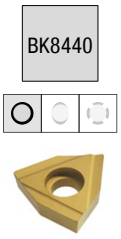
WOHX

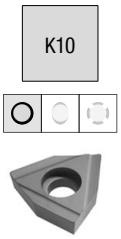
Designation	L	S	D1	IC
	mm	mm	mm	mm
WOHX 02T0..	2,6	1,20	2	4



WOHX





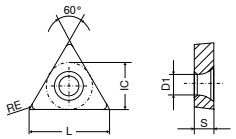


ISO	KOMET no.	RE	F WOHX NEW X2 Article no. 62 600 ... EUR		F WOHX NEW X2 Article no. 62 600 ... EUR		F WOHX NEW X2 Article no. 62 600 ... EUR	
		mm						
02T001	W0004120.018440	0,1			18,10	00102		
02T001	W0004120.012710	0,1	18,10	10102				
02T001	W0004120.0121	0,1					14,87	20102
Steel			●		●			
Stainless steel			●		●			
Cast iron			●					
Non ferrous metals							●	
Heat resistant alloys							●	
Hardened materials								

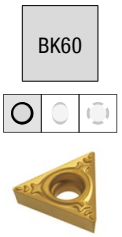
→ v_c Page 50

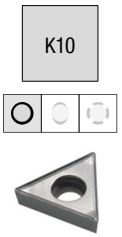
TOGX

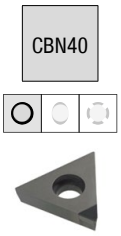
Designation	L	S	D1	IC
	mm	mm	mm	mm
TOGX 06T1..	6,64	1,80	2,2	4,0
TOGX 0902..	9,12	2,50	2,8	5,6
TOGX 1403..	13,62	3,00	3,8	8,2



TOGX







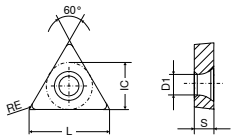
ISO	KOMET no.	RE	F TOGX NEW X2 Article no. 62 601 ... EUR		F TOGX NEW X2 Article no. 62 601 ... EUR		F TOGX NEW Y0 Article no. 62 601 ... EUR	
		mm						
06T102	W5704120.0223	0,2			14,04	**50206**		
06T102	W5704140.0260	0,2	14,04	**90206**				
06T102	W3004990.0240	0,2					60,46	**60206**
090204	W5714120.0423	0,4			15,39	**50409**		
090204	W5714140.0460	0,4	15,39	**70409**				
090204	W3014990.0440	0,4					67,08	**60409**
140304	W5726120.0423	0,4			24,86	**50414**		
140304	W5726140.0460	0,4	21,74	**70414**				

Steel	●		
Stainless steel			
Cast iron			
Non ferrous metals		●	
Heat resistant alloys		●	
Hardened materials			●

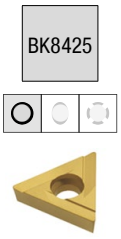
→ v_c Page 50

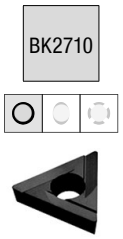
TOHX

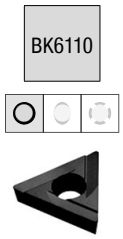
Designation	L	S	D1	IC
	mm	mm	mm	mm
TOHX 06T1..	6,50	1,80	2,2	4,0
TOHX 0902..	9,12	2,50	2,8	5,6
TOHX 1403..	13,62	3,00	3,8	8,2

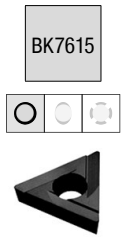


TOHX









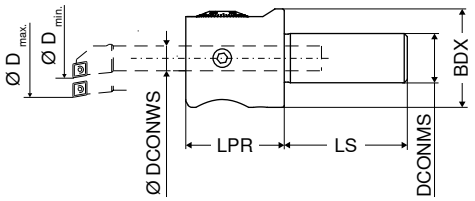
ISO	KOMET no.	RE							
		mm	F TOHX NEW X2 Article no. 62 602 ... EUR		F TOHX NEW X2 Article no. 62 602 ... EUR		F TOHX NEW X2 Article no. 62 602 ... EUR		F TOHX NEW X2 Article no. 62 602 ... EUR	
06T103	W3004060.032710	0,3			14,46	**10606**				
06T103	W3004060.036110	0,3					15,39	**40606**		
06T103	W3004420.038425	0,3	13,83	**30606**						
06T103	W3004060.037615	0,3							17,06	**80606**
090204	W3014060.046110	0,4					17,06	**40409**		
090204	W3014060.042710	0,4			16,43	**10409**				
090204	W3014060.047615	0,4							18,62	**80409**
140304	W3026060.046110	0,4					19,03	**40414**		

Steel	●	●	○	
Stainless steel	●	●		
Cast iron	●	●	●	●
Non ferrous metals				
Heat resistant alloys				
Hardened materials				

→ v_c Page 50

SpinTools – Micro-Boring Head

▲ max. speed 30,000 U/min





D_{min} - D_{max} mm	BDX mm	DCONWS mm	DCONMS mm	LPR mm	LS mm	Digital W4 Article no. 62 386 ... EUR		Analogue W4 Article no. 62 382 ... EUR	
0,3 - 7,1	25	4	10	25	25	1.184,00	**025**	992,00	**025**
0,3 - 19,1	32	7	16	32	40	1.226,00	**032**	1.029,00	**032**

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

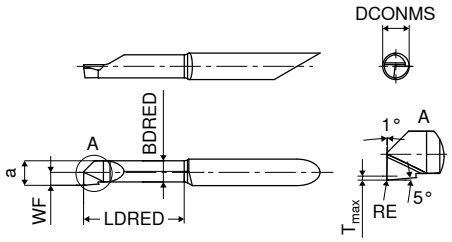
Scope of supply:
incl. AAA Battery



W4 Article no. 62 309 ... EUR	
245,90	**000**

Spare parts		W7  Clamping screw ST Article no. 62 950 ...			W7  Locking screw Article no. 62 950 ...	
for Article no.		EUR			EUR	
62 382 025 / 62 386 025	M5x4	1,21	**214**	M4x8	1,03	**228**
62 382 032 / 62 386 032	M6x5	1,21	**215**	M6x10	1,03	**229**

SpinTools – Solid carbide boring bar



TiN

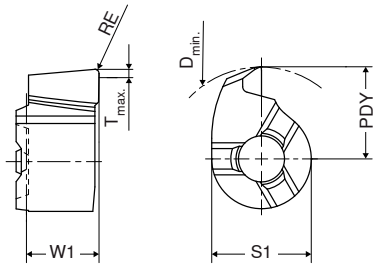


D_{min} - D_{max}	DCONMS	LDRED	RE	a	BDRED	WF	$T_{max.}$	W4 Article no. 62 383 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR	
0,3 - 0,7	4	1,2		0,25	0,15	0,15	0,03	45,51	**003**
0,6 - 1,1	4	2,5		0,55	0,46	0,30	0,05	45,51	**006**
1,0 - 2,3	4	4,0	0,05	0,95	0,65	0,50	0,10	45,85	**010**
2,2 - 3,3	4	6,0	0,05	2,00	1,55	1,10	0,20	38,79	**022**
3,2 - 4,3	4	10,2	0,05	3,00	2,55	1,60	0,20	39,68	**032**
3,9 - 7,1	4	15,2	0,05	3,70	3,45	1,95	0,30	42,54	**039**
5,2 - 6,3	7	20,3	0,05	5,00	4,25	2,60	0,50	59,40	**052**
6,2 - 7,3	7	20,3	0,05	6,00	5,25	3,10	0,50	59,40	**062**
6,9 - 12,1	7	25,4	0,20	6,70	6,25	3,45	0,50	53,79	**069**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c Page 53

SpinTools – Carbide inserts



TiN



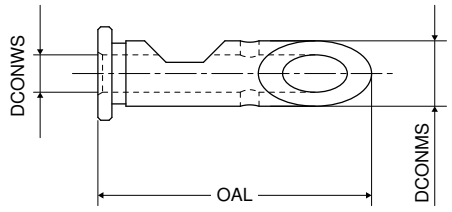
D_{min} - D_{max}	RE	PDY	S1	W1	$T_{max.}$	W4 Article no. 62 384 ...	
mm	mm	mm	mm	mm	mm	EUR	
6,9 - 8,1	0,2	3,45	4,8	3,5	1	21,49	**069**
7,9 - 9,1	0,2	3,95	4,8	3,5	1	21,49	**079**
8,9 - 10,1	0,2	4,45	4,8	3,5	1	21,49	**089**
9,9 - 12,1	0,2	4,95	7,0	3,9	1	22,81	**099**
11,9 - 14,1	0,2	5,95	7,0	3,9	1	22,81	**119**
13,9 - 19,1	0,2	6,95	7,0	3,9	1	22,81	**139**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c Page 53

5

SpinTools – Adapter



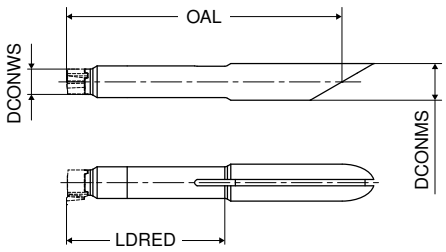


DCONMS	DCONWS	OAL	W4 Article no. 62 335 ...	
mm	mm	mm	EUR	
7	4	30	71,96	**407**

SpinTools – Toolholder for carbide inserts

▲ with thro' coolant

▲ appropriate inserts for article no. 62 384 ... can be found in the table above





DCONMS	LDRED	DCONWS	OAL	W4 Article no. 62 385 ...	
mm	mm	mm	mm	EUR	
7	30	4,8	56	195,00	**330**
7	35	7,0	61	206,70	**350**

Spare parts	W7 Article no. 62 950 ...		Y7 Article no. 80 950 ...	
for Article no.	EUR		EUR	
62 385 330	5,73	**007**	10,22	**124**
62 385 350	5,73	**094**	11,24	**126**

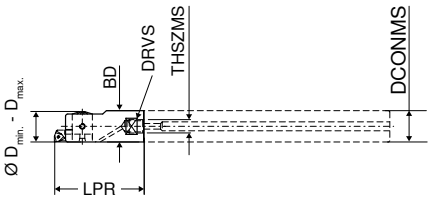

TORX® Screws


Key D

SpinTools – Precision boring head

▲ With internal coolant supply

Scope of supply:
Fine boring head without shank, without insert holder





BD	D_{min} - D_{max}	THSZMS	DCONMS	LPR	DRVS	W4 Article no. 62 304 ...	
mm	mm		mm	mm	mm	EUR	
14	14,7 - 17,1	M6	14	40	12	838,20	**017**
16	16,7 - 20,1	M10	16	40	14	838,20	**020**
19	19,7 - 24,1	M10	18	40	16	838,20	**024**


TORX® Screws


Key D

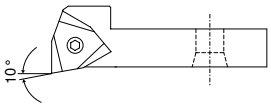

Clamping screw ST

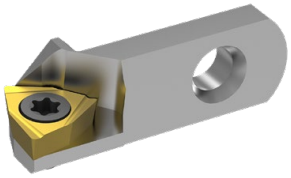
Spare parts		W7 Article no. 62 950 ...		Y7 Article no. 80 950 ...		W7 Article no. 62 950 ...	
for Article no.		EUR		EUR		EUR	
62 304 017	M2,5x6	3,22	**022**	T07	7,80 **109**	M3x2	2,03 **017**
62 304 020	M2,5x6	3,22	**022**	T07	7,80 **109**	M3x2,5	2,03 **018**
62 304 024	M2,5x6	3,22	**022**	T07	7,80 **109**	M3x4	2,03 **019**

Information on the working length can be found on → **Page 55.**

SpinTools – Insert holder, 90°

Scope of supply:
without insert





for boring head	Insert	W4 Article no. 62 317 ...	
		EUR	
62 304 ...	WC.. 0201..	146,20	**024**

Suitable inserts can be found on → **Page 47.**


TORX® Screws

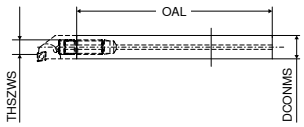

Key D

Spare parts		W7 Article no. 62 950 ...		Y7 Article no. 80 950 ...	
Insert		EUR		EUR	
WC.. 0201..	M2x3,7	3,22	**021**	T06	8,44 **108**

SpinTools – High-speed carbide boring bars

- with threaded mounting stud made of high quality steel
- with thro' coolant
- Shank clamping length 35 mm
- Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head



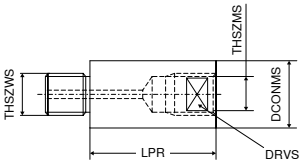


DCONMS h6	OAL	THSZWS	W4 Article no. 62 353 ...	
mm	mm		EUR	
14	110	M6	372,00	014
16	120	M10	416,50	016
18	100	M10	440,90	018
18	180	M10	785,30	218
18	140	M10	607,30	118

Information on the working length can be found on → **Page 55.**

SpinTools – Shank extensions (tempered steel)

- with thro' coolant





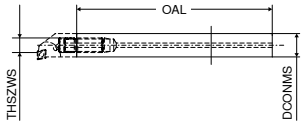
DCONMS h9	LPR	THSZWS	THSZMS	DRVS	W4 Article no. 62 349 ...	
mm	mm			mm	EUR	
16	32	M10	M10	14	66,77	732
16	64	M10	M10	14	75,56	764

5

SpinTools – High Speed Steel Extension

- with thro' coolant
- Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head



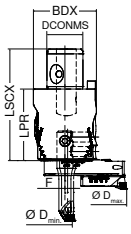


DCONMS h6	OAL	THSZWS	W4 Article no. 62 329 ...	
mm	mm		EUR	
14	60	M6	83,62	660
16	70	M10	87,64	770
18	80	M10	96,44	880

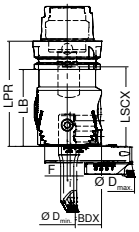
SpinTools – Multi-Head – boring and fine boring head

- **For boring bars Ø 16 mm and bridges**
- With internal coolant supply
- LSCX = Boring depth

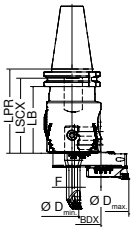
Scope of supply:
without boring bar, bridge and insert holder



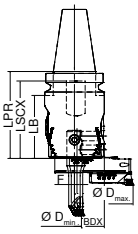
STM Modular



HSK-A 63



SK 40



MAS-BT 40


STM Modular

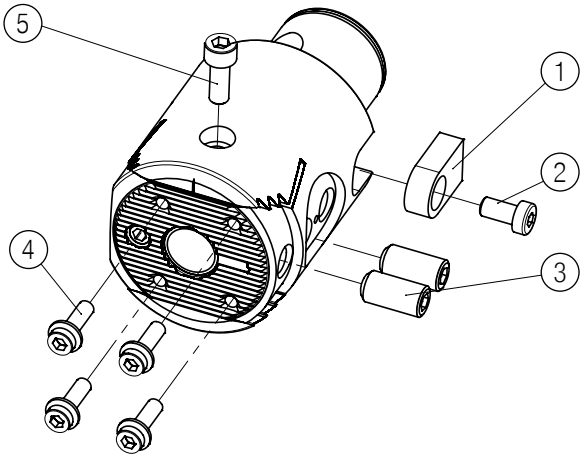

HSK-A


SK


MAS-BT

D_{min} - D_{max}	Adapter	DCONMS	BDX	LPR	LB	LSCX	F	W4 Article no. 62 372 ...		W4 Article no. 62 373 ...		W4 Article no. 62 373 ...		W4 Article no. 62 373 ...	
mm		mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
3 - 320	STM 36	36	63	71,6		111,6	0 - 2,7	1.184,00	653						
3 - 320	HSK-A 63		63	96,6	70,6	73,0	0 - 2,7			1.449,00	653				
3 - 320	SK 40		63	91,6	72,5	81,6	0 - 2,7					1.449,00	153		
3 - 320	BT 40		63	91,6	69,0	81,6	0 - 2,7							1.449,00	453

Suitable base adapters can be found on → **page onwards 40.**



1. *Drive dogs*
2. *Carrier screw*
3. *Clamping screw*
4. *Flange screw*
5. *Clamping screw MH*


Driver


Clamping screw MH


Flange screw

Spare parts		W7 Article no. 62 950 ...			W7 Article no. 62 950 ...			W7 Article no. 62 950 ...	
D_{min} - D_{max}		EUR			EUR			EUR	
3 - 320	16x26,5x8	39,63	040	M6x16	1,81	226	M5x16	2,94	225


Clamping screw


Screw for drivers

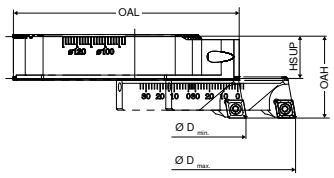
Spare parts					W7 Article no. 62 950 ...			W7 Article no. 62 950 ...	
D_{min} - D_{max}					EUR			EUR	
3 - 320				M6x16	1,03	227	M6x12	1,21	167

SpinTools – Bridge for Multi-Head

- Ø adjustable
- With internal coolant supply

Scope of supply:

- without tool holder
- including fixation screws



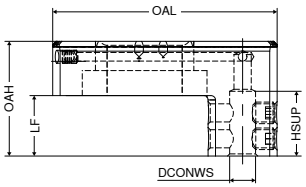


D_{min} - D_{max}	OAL	HSUP	OAH	W4 Article no. 62 376 ...	
mm	mm	mm	mm	EUR	
86 - 164	80	15	29	274,50	**164**
162 - 320	158	15	29	411,20	**320**

Insert holders can be found on → **Page 19.**

SpinTools – Axial groving holder for UltraMini

- With internal coolant supply





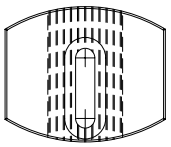
DCONWS	OAL	OAH	HSUP	LF	WT	W4 Article no. 62 358 ...	
mm	mm	mm	mm	mm	kg	EUR	
6	52	26,58	15	14	0,092	246,90	**006**
7	52	26,58	15	14	0,091	246,90	**007**
8	52	26,58	20	14	0,088	246,90	**008**

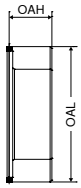
Suitable inserts for axial grooving can be found in
→ **Chapter 12, Miniature Turning Tools**

SpinTools – Counterweight

Scope of supply:

Including fixation screw







for	OAL	OAH	W4 Article no. 62 378 ...	
	mm	mm	EUR	
62 376 ...	38	12	78,00	**320**

W7



Clamping screw ST

Spare parts DCONWS	Article no. 62 950 ...	
	EUR	
6	1,21	**214**
7	1,21	**214**
8	1,21	**214**

SpinTools – Multi-Head – Boring and Fine Boring Head Set

- suitable for Ø 3 – Ø 320 mm

Scope of supply:

- **1 Tool Kit**
- **1 Multi-Head-Boring- and Fine Boring Head (depending on selection)**
- **4 Boring bars**
  - 62 345 015 Ø 9.75 – Ø 15.1 mm
  - 62 345 020 Ø 14.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 25.1 mm
  - 62 345 029 Ø 24.75 – Ø 30.1 mm
- **2 Boring tools, adjustable**
  - 62 375 048 Ø 29.75 – Ø 48.1 mm
  - 62 375 088 Ø 47.75 – Ø 88.1 mm
- **incl. insert holder**
  - 62 377 048 CC.. 0602
  - 62 377 088 CC.. 0602
- **1 Bridge**
  - 62 376 164 Ø 86 – Ø 164 mm
- **1 Torx-Key – T7**
- **1 6-adjustment key – SW5**

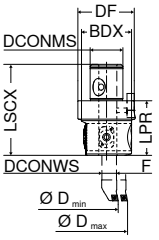


D_{min} - D_{max}	Adapter	STM Modular W4 Article no. 62 374 ...		HSK-A W4 Article no. 62 379 ...		SK W4 Article no. 62 379 ...		MAS-BT W4 Article no. 62 379 ...	
mm		EUR		EUR		EUR		EUR	
9,75 - 164	STM 36	2.048,00	**999**						
9,75 - 164	HSK-A 63			2.281,00	**996**				
9,75 - 164	SK 40					2.281,00	**990**		
9,75 - 164	BT 40							2.281,00	**993**

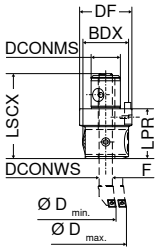
SpinTools – Single point boring heads – Modular system

▲ LSCX = Boring depth
▲ With internal coolant supply

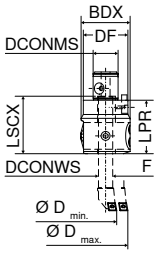
STM



Digital with collar



with flange



without flange



Digital with collar STM Modular



with flange STM Modular



without flange STM Modular

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	DCONWS mm	LPR mm	LSCX mm	F mm	WT kg	W4 Article no. 62 326 ... EUR		W4 Article no. 62 332 ... EUR		W4 Article no. 62 332 ... EUR	
3,0 - 88,1	STM 28	28	55	50	16	60	62	0 - 2,7	0,98					950,60	**553**
3,0 - 88,1	STM 36	36	55	63	16	60	101	0 - 2,7	1,26			950,60	**653**		
3,0 - 88,1	STM 36	36	55	63	16	60	106	0 - 2,7	0,43	1.021,00	**036**				

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery



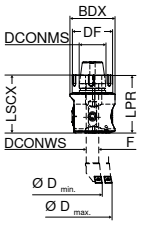
W4
Article no. 62 309 ...
EUR
245,90 **000**

Spare parts for Article no.		W7 Clamping screw Article no. 62 950 ... EUR		W7 Screw for drivers Article no. 62 950 ... EUR		W7 Driver Article no. 62 950 ... EUR		W7 Clamping screw ST Article no. 62 950 ... EUR	
62 332 553	M10x16	1,21	**047**	M5x10	1,21	**166**	12x20x6	31,26	**039**	M10x8	1,21	**046**
62 332 653	M10x16	1,21	**047**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x8	1,21	**046**
62 326 036	M10x16	1,21	**047**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x8	1,21	**046**

SpinTools – Single point boring heads

- Interface for use on ER32 collet chucks
- LSCX = Recess depth of boring bar
- with thro' coolant supply
- Suitable for Ø 3.0 – Ø 88.1 mm

ER 32





ER 32

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	DCONWS mm	LPR mm	LSCX mm	F mm	W4 Article no. 62 332 ...	EUR	
3,0 - 88,1	ER 32	32	55	49,5	16	60	86,5	0 - 2,7		946,10	**732**



Clamping screw

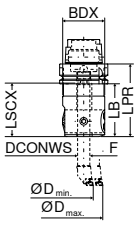


Clamping screw ST

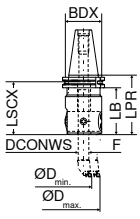
Spare parts		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
for Article no.							
62 332 732	M10x16		1,21	**047**	M10x8	1,21	**046**

SpinTools – Single Point Boring Head – Monoblock

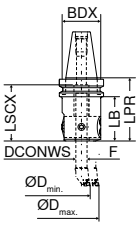
- LSCX = Boring depth
- With internal coolant supply



HSK-A 63



SK 40



MAS-BT 40



HSK-A



SK



MAS-BT

D_{min} - D_{max} mm	Adapter	BDX mm	DCONWS mm	LPR mm	LB mm	LSCX mm	F mm	WT kg	W4 Article no. 62 333 ...	EUR		W4 Article no. 62 333 ...	EUR		W4 Article no. 62 333 ...	EUR	
3,0 - 88,1	HSK-A 63	55	16	95	69	70	0 - 2,7	1,66		1.207,00	**653**						
3,0 - 88,1	SK 40	55	16	90	70	80	0 - 2,7	1,83					1.207,00	**153**			
3,0 - 88,1	BT 40	55	16	90	63	80	0 - 2,7	1,90								1.207,00	**453**



Clamping screw

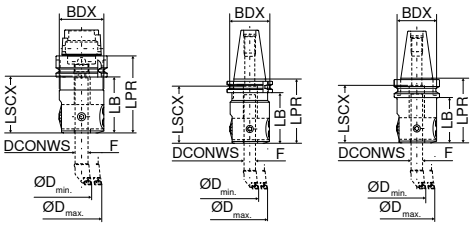


Clamping screw ST

Spare parts		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
for Article no.							
62 333 653	M10x16		1,21	**047**	M10x8	1,21	**046**
62 333 153	M10x16		1,21	**047**	M10x8	1,21	**046**
62 333 453	M10x16		1,21	**047**	M10x8	1,21	**046**

SpinTools – Single Point Boring Head – Monoblock

▲ LSCX = Boring depth
▲ With internal coolant supply



HSK-A 63 | SK 40 | MAS-BT 40



Digital HSK-A | Digital SK | Digital MAS-BT

D_{min} - D_{max} mm	Adapter	BDX mm	DCONWS mm	LPR mm	LB mm	LSCX mm	F mm	W4 Article no. 62 363 ...	EUR		W4 Article no. 62 363 ...	EUR		W4 Article no. 62 363 ...	EUR	
3,0 - 88,1	HSK-A 63	55	16	95	70	70	0 - 2,7		1.460,00	**688**						
3,0 - 88,1	SK 40	55	16	90	71	80	0 - 2,7					1.460,00	**188**			
3,0 - 88,1	BT 40	55	16	90	59	80	0 - 2,7								1.460,00	**488**

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery



W4 Article no. 62 309 ...	EUR	
	245,90	**000**



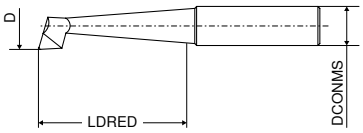
Clamping screw



Clamping screw ST

Spare parts		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
for Article no.							
62 363 488 / 62 363 188	M10x16		1,21	**047**	M10x8	1,21	**046**

SpinTools – Boring tools with carbide cutting edge





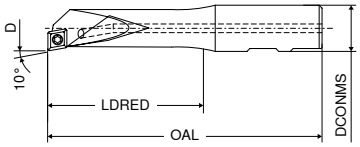
D_{min} - D_{max} mm	LDRED mm	DCONMS h6 mm	W4 Article no. 62 346 ... EUR	
3,0 - 8,0	20	10	128,20	008
4,0 - 9,0	23	10	128,20	009
5,0 - 10,0	25	10	128,20	010
6,0 - 11,0	25	10	128,20	011
7,0 - 12,0	31	10	128,20	012

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c Page 52

SpinTools – Steel boring bars

▲ With internal coolant supply





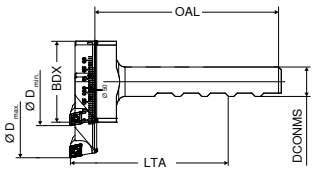
D_{min} - D_{max} mm	OAL mm	LDRED mm	DCONMS h6 mm	Insert	W4 Article no. 62 345 ... EUR	
9,75 - 15,1	75	30	16	CC.. 0602	169,50	015
11,75 - 17,1	80	37	16	CC.. 0602	169,50	017
13,75 - 19,1	85	43	16	CC.. 0602	169,50	019
14,75 - 20,1	90	51	16	CC.. 0602	169,50	020
15,75 - 21,1	95	57	16	CC.. 0602	169,50	021
17,75 - 23,1	100	67	16	CC.. 0602	169,50	023
19,75 - 25,1	105	72	16	CC.. 0602	195,00	024
19,75 - 25,1	105	72	16	CC.. 09T3	195,00	025
21,75 - 27,1	110	77	16	CC.. 09T3	195,00	027
24,75 - 30,1	115	82	16	CC.. 0602	195,00	029
24,75 - 30,1	115	82	16	CC.. 09T3	195,00	030
27,75 - 33,1	115	82	16	CC.. 09T3	204,60	033
31,75 - 37,1	115	82	16	CC.. 09T3	204,60	037
34,75 - 40,1	115	82	16	CC.. 09T3	204,60	040
38,75 - 44,1	115	82	16	CC.. 09T3	218,30	044
42,75 - 48,1	115	82	16	CC.. 09T3	229,90	048
47,75 - 53,1	115	82	16	CC.. 09T3	256,50	053

Suitable inserts can be found on → **Page 48.**

SpinTools – Adjustable boring bar bridge

▲ With internal coolant supply

Scope of supply:
without insert holder



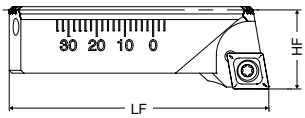


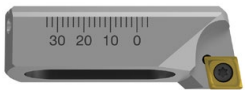
D_{min} - D_{max} mm	OAL mm	BDX mm	LTA mm	DCONMS mm	W4 Article no. 62 375 ... EUR	
29,75 - 48,1	103	25	85	16	113,40	048
47,75 - 88,1	101	44	85	16	131,50	088

SpinTools – Tool holder for boring bar and bridge Multi-Head

▲ With internal coolant supply

Scope of supply:
▲ without inserts
▲ incl. mounting screws





for	LF mm	HF mm	Insert	W4 Article no. 62 377 ... EUR	
62 375 048	28,2	12	CC.. 0602	200,30	048
62 375 088 / 62 376 ...	46,0	14	CC.. 0602	220,50	088
62 375 088 / 62 376 ...	46,0	14	CC.. 09T3	229,90	089

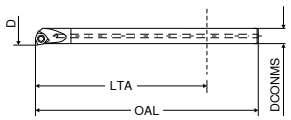
Suitable inserts can be found on → **Page 48.**

Spare parts for Article no.	W7 TORX® Screws Article no. 62 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		W7 Flange screw Article no. 62 950 ... EUR	
62 377 048	3,22	022	7,80	109	2,94	225
62 377 088	3,22	022	7,80	109	2,94	225
62 377 089	3,91	023	9,28	113	2,94	225

5

SpinTools – Boring bars with carbide shank

▲ With internal coolant supply
▲ LTA = max. overhang





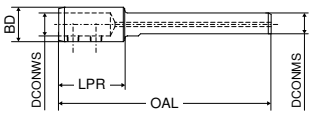
D_{min} - D_{max}	DCONMS $_{h6}$	OAL	LTA	Insert	W4 Article no. 62 341 ...	
mm	mm	mm	mm		EUR	
5,8 - 11,2	5	80	45	WC.. 0201..	248,00	011
7,8 - 13,2	6	100	60	WC.. 0201..	248,00	013

Suitable inserts can be found on → **Page 47.**

Spare parts	W7 Article no. 62 950 ...		Y7 Article no. 80 950 ...	
	TORX® Screws		Key D	
Insert	EUR		EUR	
WC.. 0201..	3,22	021	8,44	108

SpinTools – Boring tool extensions

▲ with thro' coolant





DCONWS	DCONMS	BD	OAL	LPR	W4 Article no. 62 337 ...	
mm	mm	mm	mm	mm	EUR	
10	16	16	128		165,40	128
16	16	24	148	44	188,70	148

W7



Clamping screw

Spare parts	Article no. 62 950 ...	
for Article no.	EUR	
62 337 128	4,17	048
62 337 148	4,85	049

SpinTools – Reduction sleeves

▲ for boring bars and boring tools



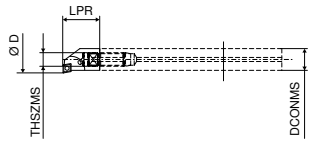


DCONMS	DCONWS	OAL	W4 Article no. 62 335 ...	
mm	mm	mm	EUR	
16	4	37	78,00	104
16	5	37	78,00	105
16	6	37	78,00	106
16	8	37	78,00	108
16	9	37	78,00	109
16	10	37	78,00	110
16	11	37	78,00	111
16	12	37	78,00	112
16	13	37	78,00	113
16	14	37	78,00	114

SpinTools – High-speed boring head

- for overturning holder and high speed carbide shank
- With internal coolant supply
- $D_{max.}$ = using a head with fine adjustment 0 – 2,7 mm

Scope of supply:
Boring head without boring shank, without inserts





D_{min} - D_{max} mm	LPR mm	THSZMS	DCONMS $_{h6}$ mm	Insert	W4 Article no. 62 361 ... EUR	
8,75 - 14,1	18	M5	8	CC.. 0602	117,60	**014**
9,75 - 15,1	18	M5	9	CC.. 0602	117,60	**015**
10,75 - 16,1	23	M6	10	CC.. 0602	117,60	**016**
11,75 - 17,1	23	M6	11	CC.. 0602	117,60	**017**
12,75 - 18,1	23	M6	12	CC.. 0602	117,60	**018**
13,75 - 19,1	23	M6	13	CC.. 0602	117,60	**019**
14,75 - 20,1	23	M6	14	CC.. 0602	117,60	**020**
15,75 - 21,1	23	M6	14	CC.. 0602	117,60	**021**
16,75 - 22,1	27	M10	16	CC.. 0602	117,60	**022**
17,75 - 23,1	27	M10	16	CC.. 0602	117,60	**023**
19,75 - 25,1	27	M10	16	CC.. 0602	117,60	**025**
21,75 - 27,1	27	M10	16	CC.. 0602	119,80	**027**
24,75 - 30,1	27	M10	16	CC.. 0602	119,80	**030**
27,75 - 33,1	27	M10	16	CC.. 0602	119,80	**033**
31,75 - 37,1	27	M10	16	CC.. 0602	128,20	**037**
34,75 - 40,1	27	M10	16	CC.. 0602	138,80	**040**

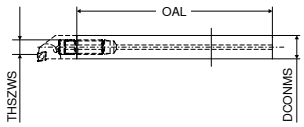
Suitable inserts can be found on → **Page 48.**

Spare parts	W7 Article no. 62 950 ... EUR		Y7 Article no. 80 950 ... EUR	
	 TORX® Screws		Key D	
Insert				
CC.. 0602	3,22	**022**	7,80	**109**

SpinTools – High-speed carbide boring bars

- with threaded mounting stud made of high quality steel
- with thro' coolant
- Shank clamping length 35 mm
- Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head





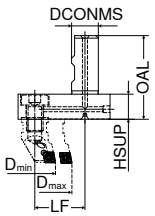
DCONMS $_{h6}$ mm	OAL mm	THSZWS	W4 Article no. 62 353 ... EUR	
8	73	M5	244,80	**008**
9	80	M5	256,50	**009**
10	82	M6	274,50	**010**
11	89	M6	288,30	**011**
12	96	M6	301,00	**012**
13	103	M6	308,40	**013**
14	110	M6	372,00	**014**
16	120	M10	416,50	**016**

Information on the working length can be found on → **Page 55.**

SpinTools – Over turning holder for boring head

- With internal coolant supply

Scope of supply:
without boring head and insert

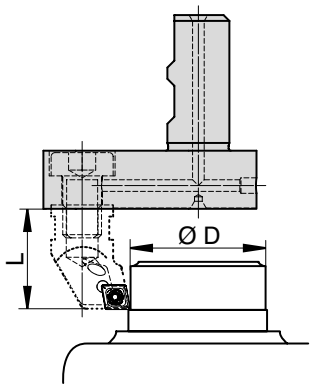




D_{min} - D_{max} mm	DCONMS $_{h6}$ mm	LF mm	HSUP mm	OAL mm	W4 Article no. 62 404 ... EUR	
5,3 - 28,6	16	20	15	50	274,50	**028**
25,3 - 48,6	16	30	15	50	321,20	**048**

Help me choose the correct over-turning adapter

- ▲ for the combination of overturning with high speed boring heads
- ▲ the length L can be extended with shank extensions



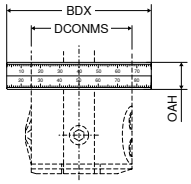
Boring range Ø $D_{min.}$ – Ø $D_{max.}$ mm	Tool holder 62 404 ...	L mm	Boring Head 62 361 ...	Pages
5,3 – 10,6	028	27	040	23
8,3 – 13,6	028	27	037	
12,3 – 17,6	028	27	033	
15,3 – 20,6	028	27	030	
18,3 – 23,6	028	27	027	
20,3 – 25,6	028	27	025	
22,3 – 27,6	028	27	023	
23,3 – 28,6	028	27	022	
25,3 – 30,6	048	27	040	
28,3 – 33,6	048	27	037	
32,3 – 37,6	048	27	033	
35,3 – 40,6	048	27	030	
38,3 – 43,6	048	27	027	
40,3 – 45,6	048	27	025	
42,3 – 47,6	048	27	023	
43,3 – 48,6	048	27	022	

SpinTools – Balancing rings

- ▲ For balancing the tools without dynamic balancing machine

Scope of supply:

CD-ROM with application data and setting values





DCONMS	BDX	OAH	WT	W4 Article no. 62 300 ... EUR	
mm	mm	mm	kg		
32	50	16	0,08	251,20	**032**
40	58	16	0,09	272,40	**040**
50	70	16	0,13	290,40	**050**
55	75	16	0,14	301,00	**055**
63	84	16	0,16	311,60	**063**

W7



Clamping screw

Spare parts DCONMS	Article no. 62 950 ... EUR	
32 - 63	6,47	**009**

SpinTools – Single point boring heads Set 1

- suitable for Ø 3 – Ø 88.1 mm
- supplied with Ø 9.75 – Ø 30.1 or Ø 9.75 – Ø 40.1 mm
- with thro' coolant

Scope of supply:

- **1 Tool Kit**
- **1 single point boring head (depending on selection)**
- **4 Boring bars (SK40- and MAS-BT-Set)**
  - 62 345 015 Ø 9,75 – Ø 15,1 mm
  - 62 345 020 Ø 14,75 – Ø 20,1 mm
  - 62 345 024 Ø 19,75 – Ø 25,1 mm
  - 62 345 029 Ø 24,75 – Ø 30,1 mm
- **8 Boring bars (Modular-Set)**
  - 62 345 015 Ø 9,75 – Ø 15,1 mm
  - 62 345 019 Ø 13,75 – Ø 19,1 mm
  - 62 345 023 Ø 17,75 – Ø 23,1 mm
  - 62 345 027 Ø 21,75 – Ø 27,1 mm
  - 62 345 030 Ø 24,75 – Ø 30,1 mm
  - 62 345 033 Ø 27,75 – Ø 33,1 mm
  - 62 345 037 Ø 31,75 – Ø 37,1 mm
  - 62 345 040 Ø 34,75 – Ø 40,1 mm
- **1 6-adjustment key – SW5**
- **1 Torx-Key – T7**



D_{min} - D_{max} mm	Adapter	STM Modular W4 Article no. 62 334 ... EUR		SK W4 Article no. 62 345 ... EUR		MAS-BT W4 Article no. 62 345 ... EUR	
9,75 - 40,1	STM 36	1.959,00	999				
9,75 - 30,1	SK 40			1.546,00	990		
9,75 - 30,1	BT 40					1.546,00	993

SpinTools – Single point boring heads Set 2

- suitable for Ø 3 – Ø 88.1 mm
- Supplied with Ø 9.75 – Ø 88.1 mm
- with thro' coolant

Scope of supply:

- **1 Tool Kit**
- **1 Fine boring head (depending on selection) (depending on selection)**
- **4 Boring bars**
  - 62 345 015 Ø 9.75 – Ø 15.1 mm
  - 62 345 020 Ø 14.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 25.1 mm
  - 62 345 029 Ø 24.75 – Ø 30.1 mm
- **2 Boring tools, adjustable**
  - 62 375 048 Ø 29.75 – Ø 48.1 mm
  - 62 375 088 Ø 47.75 – Ø 88.1 mm
- **incl. insert holder**
  - 62 377 048 CC.. 0602
  - 62 377 088 CC.. 0602
- **1 Torx key – T7**
- **1 6-adjustment key – SW5**



D_{min} - D_{max} mm	Adapter	STM Modular W4 Article no. 62 334 ... EUR		HSK-A W4 Article no. 62 345 ... EUR		SK W4 Article no. 62 345 ... EUR		MAS-BT W4 Article no. 62 345 ... EUR	
9,75 - 88,1	STM 36	2.124,00	997						
9,75 - 88,1	HSK-A 63			2.385,00	997				
9,75 - 88,1	SK 40					2.385,00	998		
9,75 - 88,1	BT 40							2.385,00	999

SpinTools – Single point boring heads ER32 Set

- Suitable for Ø 3.0 – Ø 88.1 mm
- Scope of supply Ø 9.75 – Ø 30.1 mm
- with thro' coolant supply

Scope of supply:

- **1 tool kit**
- **1 single point boring head (62332732)**
- **4 boring bars**
  - 62 345 015 Ø 9.75 – Ø 15.1 mm
  - 62 345 020 Ø 14.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 25.1 mm
  - 62 345 029 Ø 24.75 – Ø 30.1 mm
- **1 Torx Key – T7**
- **1 Allen Key – SW5**



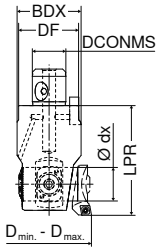
D_{min} - D_{max} mm	Adapter	W4 Article no. 62 332 ...	
		EUR	
9,75 - 30,1	ER 32	1.259,00	999

SpinTools – Single point finish boring heads

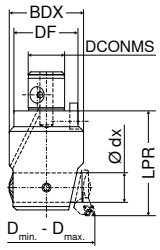
▲ With internal coolant supply

Scope of supply:
without insert holder and inserts

STM



Digital



Analogue





5

D_{min} - D_{max} mm	D_{min} - D_{max} extended mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	Ø dx mm	WT kg	Digital STM Modular W4 Article no. 62 308 ... EUR		Analogue STM Modular W4 Article no. 62 303 ... EUR	
23,9 - 31,1	29,9 - 37,1	STM 11	11	20	20	40	11	0,08	732,30	**031**	621,00	**031**
30,9 - 40,1	37,9 - 47,1	STM 14	14	25	25	45	13	0,15	732,30	**040**	621,00	**040**
39,9 - 51,1	47,9 - 59,1	STM 18	18	32	32	65	17	0,38	749,20	**051**	642,20	**051**
50,9 - 67,1	64,9 - 81,1	STM 22	22	42	40	72	22	0,70	776,80	**067**	671,90	**067**
66,9 - 87,1	84,9 - 105,1	STM 28	28	55	50	82	30	1,32	821,30	**087**	723,80	**087**
86,9 - 116,1	104,9 - 134,1 (124,9 - 154,1)	STM 36	36	72	63	105	30	3,15	930,50	**116**	849,90	**116**

For optimal stability when fine boring the main insert holder ranges are preferred over the extended range.

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery

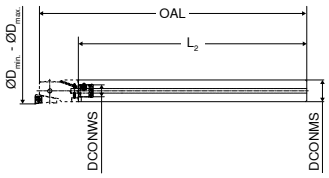


W4 Article no. 62 309 ... EUR	
245,90	**000**

Spare parts for Article no.		W7 Screw for drivers Article no. 62 950 ... EUR		W7 Driver Article no. 62 950 ... EUR		W7 Fillister-head screw Article no. 62 950 ... EUR		W7 Clamping screw ST Article no. 62 950 ... EUR	
62 303 031 / 62 308 031	M2x2,5	0,69	**162**	5x8,5x3	20,99	**035**	M4x6	6,47	**287**	M4x3	1,21	**213**
62 303 040 / 62 308 040	M2,5x6	0,69	**163**	6x10,3x4	21,83	**036**	M5x8	6,47	**288**	M5x4	1,21	**214**
62 303 051 / 62 308 051	M3x8	0,95	**164**	8x15x5	23,42	**037**	M6x10	6,47	**289**	M6x5	1,21	**215**
62 303 067 / 62 308 067	M4x10	0,95	**165**	10x18,1x6	26,60	**038**	M8x12	6,47	**290**	M8x6	1,21	**216**
62 303 087 / 62 308 087	M5x10	1,21	**166**	12x20x6	31,26	**039**	M10x16	6,47	**291**	M10x10	1,21	**217**
62 303 116 / 62 308 116	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x16	6,47	**291**	M10x18	1,21	**218**

SpinTools – High-speed carbide boring tools

▲ for single point finish boring heads Article no. 62 303 ..., 62 308 ...
▲ with thro' coolant



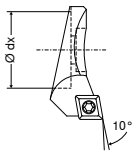


D_{min} - D_{max} mm	DCONWS mm	DCONMS h5 mm	OAL mm	L_2 mm	WT kg	W4 Article no. 62 354 ... EUR	
23,9 - 31,1	11	20	250	210	0,81	1.255,00	**020**
30,9 - 40,1	14	25	306	261	1,54	1.716,00	**025**
39,9 - 51,1	18	32	380	315	3,03	2.686,00	**032**

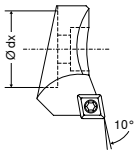
SpinTools – Insert holder, 90° and 95°

▲ for single point finish boring heads Article no. 62 303 ..., 62 308 ...

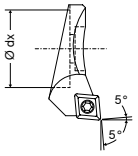
Scope of supply:
incl. Torx clamping screw for inserts, without fixing bolt for holder



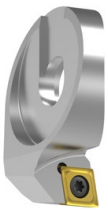
90°



Extended 90°



95°



90°



90° extended



95°

Ø dx mm	Insert	W4 Article no. 62 318 ... EUR		W4 Article no. 62 318 ... EUR		W4 Article no. 62 320 ... EUR	
11	CC.. 0602	128,20	**031**	154,80	**037**	143,10	**031**
13	CC.. 0602	143,10	**040**	169,50	**047**	155,80	**040**
17	CC.. 0602	155,80	**051**	186,50	**059**	171,70	**051**
22	CC.. 0602	169,50	**067**	202,40	**081**	178,10	**067**
30	CC.. 0602	185,40	**087**	218,30	**105**		
30	CC.. 09T3	185,40	**116**	218,30	**134**	202,40	**087**
30	CC.. 09T3			255,40	**154**		

Suitable inserts can be found on → **Page 48.**



TORX® Screws



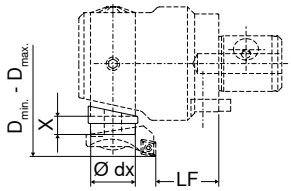
Key D

Spare parts		W7 Article no. 62 950 ... EUR			Y7 Article no. 80 950 ... EUR	
Insert						
CC.. 0602	M2,5x6	3,22	**022**	T07	7,80	**109**
CC.. 09T3	M4x9	3,91	**023**	T15	9,28	**113**

SpinTools – Reverse adapter for back boring

▲ For insert holder article no. 62 318 ... / 62 320 ...

Scope of supply:
Adapter including fixing bolt





X mm	Ø dx mm	LF mm	Ø D_{min} - D_{max} mm	W4 Article no. 62 321 ... EUR	
6,5	11	13,0	37 - 44	199,30	044
8,0	11	13,0	40 - 47	199,30	051
6,5	13	12,6	44 - 53	199,30	053
10,0	13	12,6	51 - 60	199,30	060
6,5	17	31,3	53 - 64	199,30	064
10,0	17	31,3	60 - 71	199,30	071
6,5	22	31,2	68 - 80	206,70	080
12,0	22	31,2	75 - 91	206,70	091
10,0	30	29,0	87 - 107	214,00	107

Note left hand direction of spindle rotation when in use

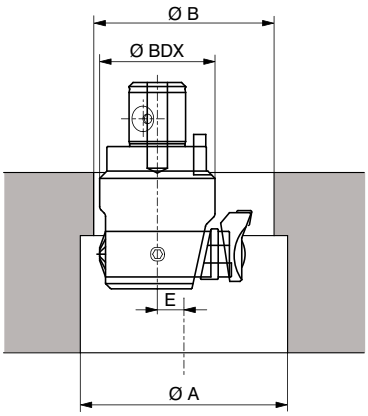
W7



Fillister-head screw

Spare parts for Article no.	Article no. 62 950 ... EUR	
62 321 044	6,72	278
62 321 051	6,87	279
62 321 053	6,72	280
62 321 060	6,87	281
62 321 064	6,72	282
62 321 071	6,87	283
62 321 080	6,72	284
62 321 091	6,87	285
62 321 107	7,80	286

Minimum diameter (Ø B) during retraction for back boring



Minimum diameter (Ø B) of the entry bore

$$Ø B = \frac{Ø BDX + Ø A}{2} + 1^*$$

Minimum offset (E) for starting

$$E = \frac{Ø A - Ø B}{2} + 0{,}5^*$$

*Safety margin

Example:
Boring head = 62 303 031
Insert Holder= 62 318 031
Reverse adapter = 62 321 044
Ø BDX = 20 mm
Ø A ≙ Amin. = 37 mm
*Safety margin = 1 mm

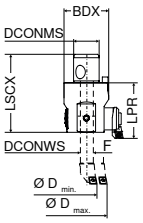
$$Ø B = \frac{20 + 37}{2} = 28{,}5 + 1 = 29{,}5 \text{ mm}$$

5

SpinTools – Vario-Head – boring and fine boring head

- For boring bars with a diameter of 16 mm and insert holders
- with thro' coolant supply
- LSCX = Recess depth of boring bar

Scope of supply:
Without boring bar and insert holder
Incl. coolant insert





Digital
STM Modular

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DCONWS mm	LPR mm	LSCX mm	F mm	W4 Article no. 62 364 ...	EUR	
3 - 125	STM 36	36	63	16	76,5	110	0 - 6,5		1.146,00	**101**

SpinTools – Digital Stick

- suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery



	W4 Article no. 62 309 ...	EUR	
		245,90	**000**



Coolant insert



Clamping screw VH



Grubscrew

Spare parts for Article no.	W4 Article no. 62 366 ...	EUR		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
62 364 101		81,85	**002**	M10X12	0,99	**341**	M5X16	0,99	**340**



Cylindrical screw



Clamping screw

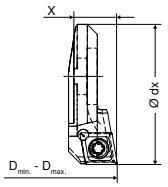
Spare parts for Article no.	W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
62 364 101	M10x25	3,30	**343**	M10X18	0,99	**342**

SpinTools – Insert holder, 90°

▲ for Vario-Head boring and fine boring head 62 364 101

Scope of supply:

incl. Torx clamping screw for inserts, without fixing bolt for holder

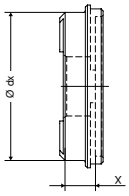




X mm	Ø dx mm	Insert	Ø D_{min} - D_{max} mm	D_{min} - D_{max} extended mm	90° W4 Article no. 62 365 ... EUR	
13,05	30	CC.. 09T3	87,75 - 101,1	101,1 - 105,75	181,60	**101**
22,05	30	CC.. 09T3	105,75 - 119,1	119,1 - 125,75	216,80	**119**
32,05	30	CC.. 09T3	125,75 - 139,1	139,1 - 152	254,00	**139**

SpinTools – Spacer

▲ For insert holder article no. 62 365 ...





X mm	Ø dx mm	W4 Article no. 62 366 ... EUR	
6,5	30	207,00	**001**

5

SpinTools – Vario Digital single point boring head (set)

▲ Suitable for Ø 3 – Ø 152 mm
▲ supplied with Ø 9.75 – Ø 101.1 mm
▲ with thro' coolant supply

Scope of supply:

- ▲ **1 tool kit**
- ▲ **1 single point finish boring head**
  - 62 364 101
- ▲ **2 boring bars**
  - 62 345 015 Ø 9.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 30.1 mm
- ▲ **Boring bars, adjustable**
  - 62 375 048 Ø 29.75 – Ø 48.1 mm
  - 62 377 088 Ø 47.75 – Ø 88.1 mm
- ▲ **3 insert holders**
  - 62 377 048 Ø 29.75 – Ø 48.1 mm
  - 62 375 088 Ø 47.75 – Ø 88.1 mm
  - 62 365 101 Ø 87.75 – Ø 101.1 mm
- ▲ **1 coolant insert 62 366 002**
- ▲ **1 digital display unit 62 309 000**
- ▲ **4 Allen keys – SW2.5/4/5/8**
- ▲ **2 Torx keys – T7/15**



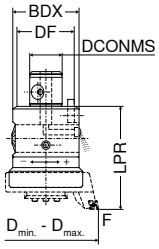
D_{min} - D_{max} mm	Adapter	STM Modular W4 Article no. 62 364 ... EUR	
9,75 - 101,1	STM 36	2.141,00	**999**

SpinTools – Single point finish boring heads

▲ With internal coolant supply
▲ extremely stable connection between insert holder and boring head

Scope of supply:
Boring head, without insert holder, pressure plate and support

STM





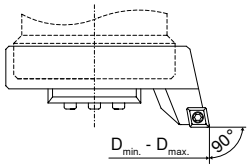
D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	F mm	WT kg	STM Modular W4 Article no. 62 305 ... EUR	
86 - 402	STM 36	36	72	63	120	± 1,25	2,94	1.881,00	**302**

Spare parts		W7 Article no. 62 950 ... EUR		W7 Article no. 62 950 ... EUR		W7 Article no. 62 950 ... EUR		W7 Article no. 62 950 ... EUR	
		Cylindrical screw		Screw for drivers		Driver		Clamping screw ST	
for Article no.									
62 305 302	M8x45	3,64	**292**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M8x60	6,87	**011**

SpinTools – Tool holder

▲ for single point finish boring heads
▲ Approach angle 90°

Scope of supply:
incl. cover plate and support





Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 438 ... EUR	
86 - 138	CC.. 09T3	408,00	**138**
86 - 138	CC.. 1204	383,70	**238**
136 - 220	CC.. 09T3	486,40	**220**
136 - 220	CC.. 1204	456,80	**320**
188 - 302	CC.. 09T3	610,40	**302**
242 - 402	CC.. 09T3	685,70	**402**

Suitable inserts can be found on → **Page 48.**

Spare parts – insert holder

		W7			Y7		W7		W7	
		 TORX® Screws			 Key D		 Pressure plate		 Support	
Spare parts		**Article no. 62 950 ...**			**Article no. 80 950 ...**		**Article no. 62 950 ...**		**Article no. 62 950 ...**	
for Article no.		EUR			EUR		EUR		EUR	
62 438 138	M4x9	3,91	023	T15	9,28	113	71,32	152	52,88	149
62 438 238	M5x10	4,32	232	T20	9,95	114	71,32	152	52,88	149
62 438 220	M4x9	3,91	023	T15	9,28	113	80,54	153	59,66	150
62 438 320	M5x10	4,32	232	T20	9,95	114	80,54	153	59,66	150
62 438 302	M4x9	3,91	023	T15	9,28	113	80,54	153	59,66	150
62 438 402	M4x9	3,91	023	T15	9,28	113	80,54	153	59,66	150

5

SpinTools – Boring set

- suitable for Ø 86 – Ø 402 mm
- supplied with Ø 86 – Ø 302 mm
- with thro' coolant

Scope of supply:

- **1 Case**
- **1 single point finish boring head**
  - 62 305 302
- **3 insert holders**
  - 62 438 138 Ø 86 – Ø 138 mm
  - 62 438 220 Ø 136 – Ø 220 mm
  - 62 438 302 Ø 188 – Ø 302 mm
- **2 pressure plates and 2 supports**
  - 62 950 149
  - 62 950 150
  - 62 950 152
  - 62 950 153
- **1 Allen Key – SW5**
- **1 Torx Key – T15**



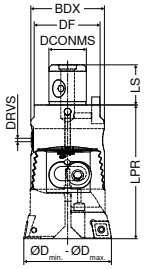
		STM Modular W4
D_{min} - D_{max} mm	Adapter	**Article no. 62 439 ...**
		EUR
86 - 302	STM 36	2.580,00 **999**

SpinTools – Twin edged Rough / Finish Boring Head

▲ Adjustable tools with through coolant
▲ each line on the adjustment scale equivalent to 0.01 mm on diameter

Scope of supply:
Boring head with spindle adjustment, carrier, stop pin, 2 screws, 2 lock washers

STM





D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	LS mm	DRVS mm	WT kg	STM Modular W4 Article no. 62 380 ... EUR	
29,5 - 40,1	STM 14	14	25	25	55	16	2,5	0,12	473,70	**040**
39,5 - 50,5	STM 18	18	32	32	65	20	2,5	0,24	493,90	**050**
49,5 - 66,5	STM 22	22	42	40	82	24	3,0	0,48	535,20	**066**
65,5 - 87,5	STM 28	28	55	50	100	30	3,0	0,94	595,60	**087**
86,5 - 115,5	STM 36	36	72	63	125	40	3,0	1,89	716,40	**115**


W7
Fillister-head screw


W7
Spring ring


W7
Location Pin

Spare parts for Article no.		Article no. 62 950 ... EUR			Article no. 62 950 ... EUR		Article no. 62 950 ... EUR	
62 380 040	M5x12	2,29	**293**	Ø 5,3/9,3	0,69	**312**	6,72	**231**
62 380 050	M6x16	2,29	**294**	Ø 6.4/10,2	0,69	**313**	6,72	**231**
62 380 066	M8x20	2,29	**295**	Ø 8,4/14,0	0,69	**314**	7,13	**234**
62 380 087	M10x25	2,56	**296**	Ø 10,5/17,0	0,69	**315**	7,13	**234**
62 380 115	M12x25	2,84	**297**	Ø 13,0/21,0	0,69	**316**	7,13	**234**


W7
Screw for drivers

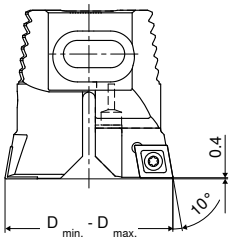

W7
Driver

Spare parts for Article no.		Article no. 62 950 ... EUR			Article no. 62 950 ... EUR	
62 380 040	M2,5x6	0,69	**163**	6x10,3x4	21,83	**036**
62 380 050	M3x8	0,95	**164**	8x15x5	23,42	**037**
62 380 066	M4x10	0,95	**165**	10x18,1x6	26,60	**038**
62 380 087	M5x10	1,21	**166**	12x20x6	31,26	**039**
62 380 115	M6x12	1,21	**167**	16x26,5x8	39,63	**040**

SpinTools – Pair of Roughing / Finishing Insert Holders, 90°

- ▲ the insert holder for the finishing process is set back axially by 0.4 mm
- ▲ the insert holder for the finishing process is moved by the adjustable spindle
- ▲ the finishing insert must be mounted in the holder without radial adjustment screw
- ▲ machining allowance for the finishing insert holder approximately 0.3 mm in diameter

Scope of supply:
pair of insert holders, 1 adjusting screw, 2 WSP-clamping screws, 1 Grub screw





5

Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 381 ... EUR	
29,5 - 40,1	CC.. 0602	363,50	**040**
39,5 - 50,5	CC.. 09T3	389,00	**050**
49,5 - 66,5	CC.. 09T3	441,90	**066**
65,5 - 87,5	CC.. 1204	575,40	**087**
86,5 - 115,5	CC.. 1204	896,60	**115**

Suitable inserts can be found on → **Page 48.**

		W7  TORX® Screws		Y7 Key D		W7  Adjustment screw		W7  Adjustment screw	
Spare parts for Article no.		**Article no. 62 950 ...** EUR		**Article no. 80 950 ...** EUR		**Article no. 62 950 ...** EUR		**Article no. 62 950 ...** EUR	
62 381 040	M2,5x6	3,22	**022**	T07	7,80	**109**	M3x8 - SW1,5	4,92	**015**	M4x0,5x9,5	5,23	**239**
62 381 050	M4x9	3,91	**023**	T15	9,28	**113**	M3x8 - SW1,5	4,92	**015**	M4x0,5x13	5,52	**240**
62 381 066	M4x9	3,91	**023**	T15	9,28	**113**	M3x8 - SW1,5	4,92	**015**	M6x14	1,21	**241**
62 381 087	M5x10	4,32	**232**	T20	9,95	**114**	M3x8 - SW1,5	4,92	**015**	M6x20	1,21	**242**
62 381 115	M5x10	4,32	**232**	T20	9,95	**114**	M3x8 - SW1,5	4,92	**015**	M6x30	1,33	**333**

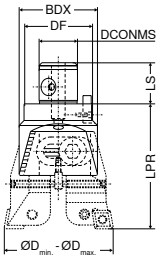
SpinTools – Boring heads for roughing with 2 cutting edges

▲ With internal coolant supply

Scope of supply:

Boring head, Drive dogs, Mounting screws and Spring rings

STM





D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	LS mm	WT kg	STM Modular W4 Article no. 62 295 ...	EUR	
23,5 - 30,5	STM 11	11	20	20	40	13	0,05		269,20	**030**
29,5 - 40,1	STM 14	14	25	25	45	16	0,09		289,30	**040**
39,5 - 50,5	STM 18	18	32	32	65	20	0,25		312,60	**050**
49,5 - 66,5	STM 22	22	42	40	72	24	0,38		352,90	**066**
65,5 - 87,5	STM 28	28	55	50	82	30	0,59		413,30	**087**
86,5 - 115,5	STM 36	36	72	63	105	40	1,23		538,40	**115**
114,5 - 153,0	STM 36	36	94	94	140	40	2,80		926,20	**153**

Spare parts

for Article no.

W7



Fillister-head screw

	Article no. 62 950 ...	EUR	
M4x8		2,29	**298**
M5x12		2,29	**293**
M6x16		2,29	**294**
M8x20		2,29	**295**
M10x25		2,56	**296**
M12x25		2,84	**297**
M16x35		7,54	**299**

W7



Spring ring

	Article no. 62 950 ...	EUR	
Ø 4,3/7,3		0,69	**311**
Ø 5,3/9,3		0,69	**312**
Ø 6.4/10,2		0,69	**313**
Ø 8,4/14,0		0,69	**314**
Ø 10,5/17,0		0,69	**315**
Ø 13,0/21,0		0,69	**316**
Ø 17,0/34,0		1,21	**317**

W7



Location Pin

Article no. 62 950 ...	EUR	
	6,72	**231**
	6,72	**231**
	6,72	**231**
	7,13	**234**
	7,13	**234**
	7,13	**234**
	7,13	**234**

Spare parts

for Article no.

W7



Screw for drivers

	Article no. 62 950 ...	EUR	
M2x2,5		0,69	**162**
M2,5x6		0,69	**163**
M3x8		0,95	**164**
M4x10		0,95	**165**
M5x10		1,21	**166**
M6x12		1,21	**167**
M6x12		1,21	**167**

W7

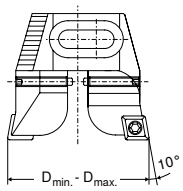


Driver

Article no. 62 950 ...	EUR	
	20,99	**035**
	21,83	**036**
	23,42	**037**
	26,60	**038**
	31,26	**039**
	39,63	**040**
	39,63	**040**

SpinTools – Pair of tool holders, standard, 90°

Scope of supply:
Adjustment screws, positioning pin, insert clamping screws

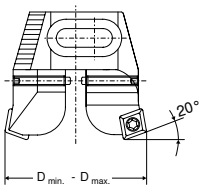




Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 296 ... EUR	
23,5 - 30,5	CC.. 0602	312,60	030
29,5 - 40,1	CC.. 0602	323,20	040
39,5 - 50,5	CC.. 09T3	346,50	050
49,5 - 66,5	CC.. 09T3	396,30	066
65,5 - 87,5	CC.. 1204	494,90	087
65,5 - 87,5	CN.. 1204	515,00	088
86,5 - 115,5	CC.. 1204	781,00	115
86,5 - 115,5	CN.. 1606	805,40	116
114,5 - 153	CC.. 1204	883,90	153
114,5 - 153	CN.. 1606	1.023,00	154

SpinTools – Pair of tool holders, standard, 70°

Scope of supply:
Adjustment screws, positioning pin, insert clamping screws





Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 299 ... EUR	
23,5 - 30,5	CC.. 0602	312,60	030
29,5 - 40,1	CC.. 0602	323,20	040
39,5 - 50,5	CC.. 09T3	346,50	050
49,5 - 66,5	CC.. 09T3	396,30	066
65,5 - 87,5	CC.. 1204	494,90	087
65,5 - 87,5	CN.. 1204	515,00	088
86,5 - 115,5	CC.. 1204	781,00	115
86,5 - 115,5	CN.. 1606	805,40	116
114,5 - 153	CN.. 1606	1.023,00	154

5

Suitable inserts can be found on → **Page 48.**

Spare parts


TORX® Screws

Key D

Adjustment screw

Ø D_{min} - D_{max}	Insert	W7 Article no. 62 950 ...	EUR		Y7 Article no. 80 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
114,5 - 153	CC.. 1204	M5x10	4,32	232	T20	9,95	114	M6x40	1,61	335
23,5 - 30,5	CC.. 0602	M2,5x6	3,22	022	T07	7,80	109	M4x0,5x7	5,12	238
29,5 - 40,1	CC.. 0602	M2,5x6	3,22	022	T07	7,80	109	M4x0,5x9,5	5,23	239
39,5 - 50,5	CC.. 09T3	M4x9	3,91	023	T15	9,28	113	M4x0,5x13	5,52	240
49,5 - 66,5	CC.. 09T3	M4x9	3,91	023	T15	9,28	113	M6x14	1,21	241
65,5 - 87,5	CC.. 1204	M5x10	4,32	232	T20	9,95	114	M6x20	1,21	242
86,5 - 115,5	CC.. 1204	M5x10	4,32	232	T20	9,95	114	M6x30	1,33	333

Spare parts


Shim


Elbow lever screw


Lever

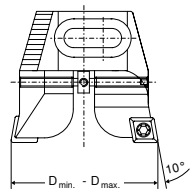

Carbide type C

Adjustment screw

Ø D_{min} - D_{max}	Insert	W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR		W7 Article no. 62 950 ...	EUR	
114,5 - 153	CN.. 1606	1,61	177		5,79	180		18,54	179		19,40	178	M8x40	1,61	334
65,5 - 87,5	CN.. 1204	1,61	096		5,79	136		16,21	125		14,52	117	M6x20	1,21	242
86,5 - 115,5	CN.. 1606	1,61	177		5,79	180		18,54	179		19,40	178	M6x30	1,33	333

SpinTools – Pair of tool holders, 'Synchro', 90°

Scope of supply:
Insert clamping screws, synchronization screw

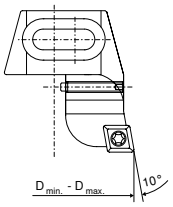




Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 297 ... EUR	
23,5 - 30,5	CC.. 0602	356,10	030
29,5 - 40,1	CC.. 0602	373,10	040
39,5 - 50,5	CC.. 09T3	398,40	050
49,5 - 66,5	CC.. 09T3	452,50	066
65,5 - 87,5	CC.. 1204	590,30	087
86,5 - 115,5	CC.. 1204	919,90	115
114,5 - 153	CC.. 1204	1.032,00	153

SpinTools – Tool holder 90°, axial offset 0.4 mm

Scope of supply:
2 adjustment screws, 1 positioning pin, insert clamping screw





Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 298 ... EUR	
23,5 - 30,5	CC.. 0602	206,70	030
29,5 - 40,1	CC.. 0602	217,30	040
39,5 - 50,5	CC.. 09T3	232,10	050
49,5 - 66,5	CC.. 09T3	266,00	066
65,5 - 87,5	CC.. 1204	343,40	087
86,5 - 115,5	CC.. 1204	536,20	115
114,5 - 153	CC.. 1204	604,00	153

Suitable inserts can be found on → **Page 48.**


TORX® Screws


Synchronization screw


Key D


Adjustment screw

Spare parts for Article no.		Article no. 62 950 ... EUR			Article no. 62 950 ... EUR			Article no. 80 950 ... EUR			Article no. 62 950 ... EUR		
62 297 030	M2,5x6	3,22	022	M4x0,5x18	39,21	207	T07	7,80	109	M4x0,5x7	5,12	238
62 297 040	M2,5x6	3,22	022	M4x0,5x23	39,84	208	T07	7,80	109	M4x0,5x9,5	5,23	239
62 297 050	M4x9	3,91	023	M4x0,5x30	40,16	209	T15	9,28	113	M4x0,5x13	5,52	240
62 297 066	M4x9	3,91	023	M6x40	41,33	210	T15	9,28	113	M6x14	1,21	241
62 297 087	M5x10	4,32	232	M6x52	42,60	211	T20	9,95	114	M6x20	1,21	242
62 297 115	M5x10	4,32	232	M6x68	43,66	212	T20	9,95	114	M6x30	1,33	333
62 297 153	M5x10	4,32	232	M6x90	42,39	220	T20	9,95	114	M6x40	1,61	335

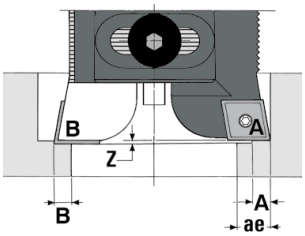

TORX® Screws


Key D


Adjustment screw

Spare parts for Article no.		Article no. 62 950 ... EUR			Article no. 80 950 ... EUR			Article no. 62 950 ... EUR	
62 298 030	M2,5x6	3,22	022	T07	7,80	109	M4x0,5x7	5,12	238
62 298 040	M2,5x6	3,22	022	T07	7,80	109	M4x0,5x9,5	5,23	239
62 298 050	M4x9	3,91	023	T15	9,28	113	M4x0,5x13	5,52	240
62 298 066	M4x9	3,91	023	T15	9,28	113	M6x14	1,21	241
62 298 087	M5x10	4,32	232	T20	9,95	114	M6x20	1,21	242
62 298 115	M5x10	4,32	232	T20	9,95	114	M6x30	1,33	333
62 298 153	M5x10	4,32	232	T20	9,95	114	M6x40	1,61	335

Asynchronous machining (divided cut)



Asynchronous boring is possible using a tool holder (A) with offset 0.4mm. This tool holder is black finished and characterized by 3 dots, and must be in the outer position (with regard to the 2 tool holders)

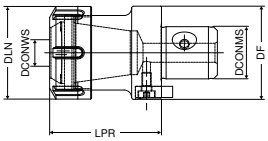
SpinTools – ER collet chuck

- ▲ for ER clamping to DIN 6499
- ▲ With internal coolant supply

Scope of supply:

axial tool length adjustment and lock nut

STM





5

DCONWS	SZID	DCONMS	DF	DLN	LPR	for collet	WT	STM Modular W4 Article no. 62 306 ... EUR	
mm		mm	mm	mm	mm		kg		
1 - 20	STM 28	28	50	50	60	470E (ER32)	0,644	324,30	032

Spare parts	Y8 Y clamping key Article no. 83 357 ...		W7 Screw for drivers Article no. 62 950 ...		W7 Driver Article no. 62 950 ...		Y8 Driver Article no. 83 950 ...		W7 Stop screw IK Article no. 62 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
62 306 032	24,12	132	1,21	166	31,26	039	7,49	121	8,84	406

Suitable collets can be found in → **Chapter 16, Adapters**

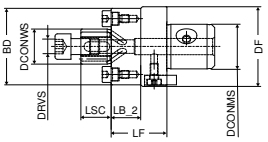
SpinTools – Shell mill adapter

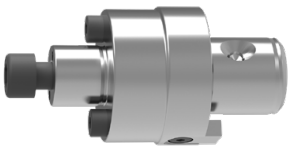
- ▲ for use on mills with parallel or transverse slot to ISO 3937
- ▲ With internal coolant supply

Scope of supply:

drive dogs, drive key and clamping bolt

STM



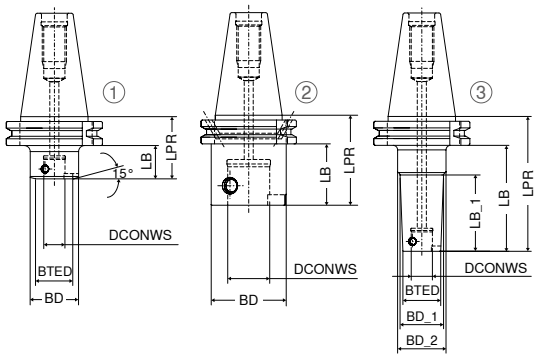


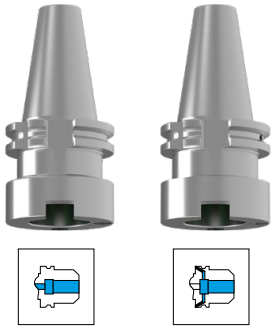
DCONWS	SZID	DCONMS	BD	DF	LSC	LB_2	LF	DRVS	WT	STM Modular W4 Article no. 62 307 ... EUR	
mm		mm	mm	mm	mm	mm	mm	mm	kg		
16	STM 22	22	38	40	17	17,1	30	6	0,363	255,40	016
22	STM 28	28	48	50	19	19,1	35	8	0,685	262,80	022

Spare parts	Y8 Parallel key Article no. 83 950 ...		W7 Screw for drivers Article no. 62 950 ...		W7 Drive dogs Article no. 62 950 ...		W7 Driver Article no. 62 950 ...		Y8 clamping screw Article no. 83 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
62 307 016	1,63	284	0,95	165	17,93	442	26,60	038	2,88	113
62 307 022	1,63	285	1,21	166	17,93	443	31,26	039	3,33	124

SpinTools – Base adapters DIN 69871

STM





	Adapter	Fig.	SZID	DCONWS	BTED	BD	BD_1	BD_2	LPR	LB	LB_1	WT	AD SK W4 Article no. 62 107 ...		AD/B SK W4 Article no. 62 108 ...	
				mm	mm	mm	mm	mm	mm	mm	mm	kg	EUR		EUR	
short	SK 30	2	STM 28	28		50			55	35,9		0,62	285,10	328		
short	SK 40	1	STM 11	11	20	32			40	20,9		0,91	278,70	111 1)		
short	SK 40	1	STM 14	14	25	32			40	20,9		0,93	278,70	114 1)		
short	SK 40	2	STM 18	18		32			40	20,9		0,89	278,70	118		
short	SK 40	2	STM 22	22		40			50	30,9		1,02	278,70	122		
short	SK 40	2	STM 28	28		50			50	30,9		1,11	278,70	128	289,30	128
short	SK 40	2	STM 36	36		63			60	40,9		1,27	257,50	136	289,30	136
short	SK 50	2	STM 28	28		50			50	30,9		2,92	329,60	428	361,40	428
short	SK 50	2	STM 36	36		63			63	43,9		3,27	329,60	436	361,40	436
long	SK 40	3	STM 11	11	20		23	32	80	60,9	40,9	1,04	312,60	211 1)		
long	SK 40	3	STM 14	14	25		28	32	80	60,9	40,9	1,07	312,60	214 1)		
long	SK 40	2	STM 18	18		32			80	60,9		1,13	312,60	218		
long	SK 40	2	STM 22	22		40			100	80,9		1,47	312,60	222		
long	SK 40	2	STM 28	28		50			100	80,9		1,84	312,60	228		
long	SK 40	2	STM 36	36		63			120	100,9		2,68	312,60	236	341,20	236
long	SK 50	2	STM 36	36		63			120	100,9		4,60	373,10	536	402,70	536

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!



O-Ring



Clamping screw ST

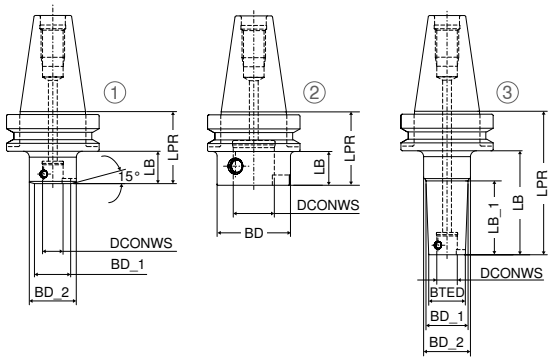
Spare parts DCONWS		W7 Article no. 62 950 ... EUR			W7 Article no. 62 950 ... EUR	
11	9x1,5	1,61	254	M4x0,5x6	7,39	026
14	12x1,5	1,61	255	M5x0,5x7,5	7,54	027
18	16x1,5	1,61	256	M6x0,75x9,5	8,07	028
22	19x2	1,61	257	M8x0,75x12	9,02	029
28	25x2	1,61	258	M10x1x14,2	10,35	030
36	33x2	1,61	259	M12x1x18	13,25	031

Suitable pull studs can be found in → **Chapter 16, Adapters**

SpinTools – Base adapters JIS B 6339 (MAS-BT)

▲ form B available upon request

STM







AD
MAS-BT

W4

	Adapter	Fig.	SZID	DCONWS	BTED	BD	BD_1	BD_2	LPR	LB	LB_1	WT	Article no. 62 112 ...	
				mm	mm	mm	mm	mm	mm	mm	mm	kg	EUR	
short	BT 30	2	STM 28	28		50			55			0,64	285,10	328
	BT 40	1	STM 11	11	20	32			50	23		1,09	278,70	111 1)
	BT 40	1	STM 14	14	25	32			50	23		1,08	278,70	114 1)
	BT 40	2	STM 18	18		32			50	23		1,06	278,70	118
	BT 40	2	STM 22	22		40			50	23		1,10	278,70	122
	BT 40	2	STM 28	28		50			50	23		1,14	278,70	128
	BT 40	2	STM 36	36		63			60	33		1,38	257,50	136
	BT 50	2	STM 28	28		50			63	25		3,75	329,60	428
	BT 50	2	STM 36	36		63			63	25		3,78	329,60	436
long	BT 40	3	STM 11	11	20		23	32	90	63	43	1,20	312,60	211 1)
	BT 40	3	STM 14	14	25		28	32	90	63	43	1,24	312,60	214 1)
	BT 40	2	STM 18	18		32			90	63		1,30	312,60	218
	BT 40	2	STM 22	22		40			100	73		1,57	312,60	222
	BT 40	2	STM 28	28		50			100	73		1,87	312,60	228
	BT 40	2	STM 36	36		63			120	93		2,78	312,60	236
	BT 50	2	STM 36	36		63			120	82		5,18	373,10	536

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!

W7



O-Ring

W7



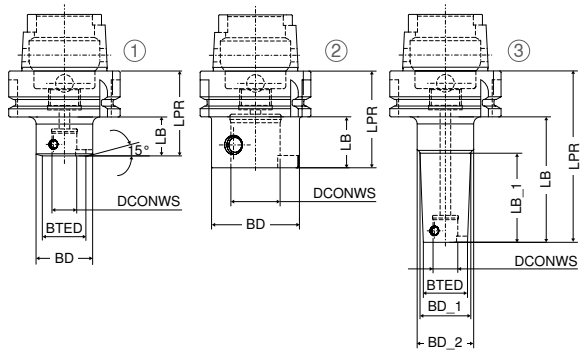
Clamping screw ST

Spare parts DCONWS		Article no. 62 950 ... EUR			Article no. 62 950 ... EUR	
11	9x1,5	1,61	254	M4x0,5x6	7,39	026
14	12x1,5	1,61	255	M5x0,5x7,5	7,54	027
18	16x1,5	1,61	256	M6x0,75x9,5	8,07	028
22	19x2	1,61	257	M8x0,75x12	9,02	029
28	25x2	1,61	258	M10x1x14,2	10,35	030
36	33x2	1,61	259	M12x1x18	13,25	031

Suitable pull studs can be found in → **Chapter 16, Adapters**

SpinTools – Base adapters HSK-A ISO 12164-1 (DIN 69893-1)

STM







AD
HSK-A

W4

	Adapter	Fig.	SZID	DCONWS	BTED	BD	BD_1	BD_2	LPR	LB	LB_1	WT	Article no. 62 122 ...	
				mm	mm	mm	mm	mm	mm	mm	mm	kg	EUR	
short	HSK-A 63	1	STM 11	11	20	32			50	24		0,77	329,60	111 1)
	HSK-A 63	1	STM 14	14	25	32			50	24		0,76	329,60	114 1)
	HSK-A 63	2	STM 18	18		32			50	24		0,74	329,60	118
	HSK-A 63	2	STM 22	22		40			50	24		0,79	329,60	122
	HSK-A 63	2	STM 28	28		50			55	24		0,91	329,60	128
	HSK-A 63	2	STM 36	36		63			65	34		1,10	298,90	136
	HSK-A 100	2	STM 28	28		50			63	34		2,32	382,60	428
	HSK-A 100	2	STM 36	36		63			70	34		2,61	382,60	436
long	HSK-A 63	3	STM 11	11	20		23	32	90	64	44	0,87	361,40	211 1)
	HSK-A 63	3	STM 14	14	25		28	32	90	64	44	0,93	361,40	214 1)
	HSK-A 63	2	STM 18	18		32			90	64		0,98	361,40	218
	HSK-A 63	2	STM 22	22		40			100	74		1,26	361,40	222
	HSK-A 63	2	STM 28	28		50			100	74		1,58	361,40	228
	HSK-A 63	2	STM 36	36		63			120	94		2,41	382,60	236
	HSK-A 100	2	STM 36	36		63			120	91		3,77	413,30	536

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!

W7



O-Ring

W7



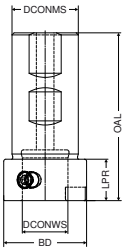
Clamping screw ST

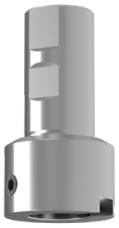
Spare parts DCONWS		Article no. 62 950 ... EUR			Article no. 62 950 ... EUR	
11	9x1,5	1,61	254	M4x0,5x6	7,39	026
14	12x1,5	1,61	255	M5x0,5x7,5	7,54	027
18	16x1,5	1,61	256	M6x0,75x9,5	8,07	028
22	19x2	1,61	257	M8x0,75x12	9,02	029
28	25x2	1,61	258	M10x1x14,2	10,35	030
36	33x2	1,61	259	M12x1x18	13,25	031

SpinTools – Adapters to DIN 1835-B

▲ with thro' coolant

STM





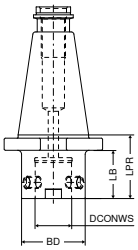
DIN 1835-B

W4

DCONMS	BD	SZID	DCONWS	LPR	OAL	WT	Article no. 62 104 ...	
mm	mm		mm	mm	mm	kg	EUR	
25	25	STM 14	14	15	72	0,24	194,00	**014**
32	32	STM 18	18	15	76	0,42	199,30	**018**
32	50	STM 28	28	35	96	0,72	241,60	**028**
32	63	STM 36	36	45	106	1,05	266,00	**036**

SpinTools – Base adapter DIN 2080

STM





short
SK

W4

Adapter	SZID	DCONWS	BD	LPR	LB	WT	Article no. 62 109 ...	
		mm	mm	mm	mm	kg	EUR	
SK 40	STM 36	36	63	60	48,4	1,52	330,60	**136**
SK 50	STM 36	36	63	63	47,8	3,33	382,60	**436**

W7



O-Ring

W7



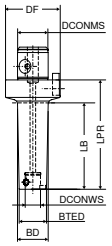
Clamping screw
ST

Spare parts DCONWS		Article no. 62 950 ...			Article no. 62 950 ...	
		EUR			EUR	
14	12x1,5	1,61	**255**	M5x0,5x7,5	7,54	**027**
18	16x1,5	1,61	**256**	M6x0,75x9,5	8,07	**028**
28	25x2	1,61	**258**	M10x1x14,2	10,35	**030**
36	33x2	1,61	**259**	M12x1x18	13,25	**031**

SpinTools – Reductions

▲ With internal coolant supply

STM





Adapter	LPR	SZID	DCONMS	DCONWS	DF	BTED	BD	LB	WT	STM Modular W4 Article no. 62 357 ... EUR	
	mm		mm	mm	mm	mm	mm	mm	kg		
STM 11	30	STM 14	14	11	25	20	23	15	0,04	153,70	**111**
STM 11	30	STM 18	18	11	32	20	23	17	0,14	153,70	**211**
STM 14	30	STM 18	18	14	32	25	28	17	0,16	153,70	**214**
STM 11	30	STM 22	22	11	40	20	23	15	0,21	157,90	**311**
STM 14	30	STM 22	22	14	40	25	28	15	0,22	157,90	**314**
STM 18	30	STM 22	22	18	40	32	37	15	0,25	157,90	**318**
STM 11	40	STM 28	28	11	50	20	23	20	0,44	165,40	**411**
STM 14	40	STM 28	28	14	50	25	28	20	0,49	165,40	**414**
STM 18	40	STM 28	28	18	50	32	37	20	0,45	165,40	**418**
STM 22	40	STM 28	28	22	50	40	46	20	0,55	165,40	**422**
STM 11	40	STM 36	36	11	63	20	22	16	0,82	177,00	**511**
STM 11	70	STM 36	36	11	63	20	23	42	0,90	190,70	**811**
STM 11	95	STM 36	36	11	63	20	23	71	0,98	206,70	**611**
STM 11	115	STM 36	36	11	63	20	23	87	1,02	227,90	**911**
STM 11	135	STM 36	36	11	63	20	23	111	1,08	248,00	**711**
STM 14	40	STM 36	36	14	63	25	27	16	0,84	177,00	**514**
STM 14	80	STM 36	36	14	63	25	28	52	1,00	201,30	**814**
STM 14	120	STM 36	36	14	63	25	28	96	1,16	226,80	**614**
STM 14	145	STM 36	36	14	63	25	28	117	1,27	248,00	**914**
STM 14	170	STM 36	36	14	63	25	28	146	1,38	269,20	**714**
STM 18	40	STM 36	36	18	63	32	37	16	0,85	177,00	**518**
STM 18	100	STM 36	36	18	63	32	38	74	1,24	214,00	**818**
STM 18	150	STM 36	36	18	63	32	38	126	1,66	237,40	**918**
STM 18	207	STM 36	36	18	63	32	38	183	2,07	312,60	**618**
STM 22	40	STM 36	36	22	63	40	46	16	0,89	177,00	**522**
STM 22	120	STM 36	36	22	63	40	48	95	1,76	232,10	**822**
STM 22	183	STM 36	36	22	63	40	48	159	2,52	289,30	**622**
STM 22	263	STM 36	36	22	63	40	48	239	3,44	413,30	**722**
STM 28	40	STM 36	36	28	63	50	58	21	1,03	177,00	**528**
STM 28	140	STM 36	36	28	63	50	60	117	2,70	242,70	**828**
STM 28	233	STM 36	36	28	63	50	60	209	4,41	393,20	**628**
STM 28	333	STM 36	36	28	63	50	60	309	6,25	538,40	**728**

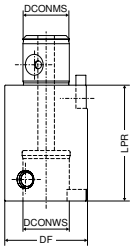
Reductions – Spare Parts

	W7			W7			W7			W7		
	 O-Ring			 Screw for drivers			 Driver			 Clamping screw ST		
Spare parts		**Article no. 62 950 ...**			**Article no. 62 950 ...**			**Article no. 62 950 ...**			**Article no. 62 950 ...**	
for Article no.		**EUR**			**EUR**			**EUR**			**EUR**	
62 357 111	9x1,5	1,61	**254**	M2,5x6	0,69	**163**	6x10,3x4	21,83	**036**	M4x0,5x6	7,39	**026**
62 357 211	9x1,5	1,61	**254**	M3x8	0,95	**164**	8x15x5	23,42	**037**	M4x0,5x6	7,39	**026**
62 357 214	12x1,5	1,61	**255**	M3x8	0,95	**164**	8x15x5	23,42	**037**	M5x0,5x7,5	7,54	**027**
62 357 311	9x1,5	1,61	**254**	M4x10	0,95	**165**	10x18,1x6	26,60	**038**	M4x0,5x6	7,39	**026**
62 357 314	12x1,5	1,61	**255**	M4x10	0,95	**165**	10x18,1x6	26,60	**038**	M5x0,5x7,5	7,54	**027**
62 357 318	16x1,5	1,61	**256**	M4x10	0,95	**165**	10x18,1x6	26,60	**038**	M6x0,75x9,5	8,07	**028**
62 357 411	9x1,5	1,61	**254**	M5x10	1,21	**166**	12x20x6	31,26	**039**	M4x0,5x6	7,39	**026**
62 357 414	12x1,5	1,61	**255**	M5x10	1,21	**166**	12x20x6	31,26	**039**	M5x0,5x7,5	7,54	**027**
62 357 418	16x1,5	1,61	**256**	M5x10	1,21	**166**	12x20x6	31,26	**039**	M6x0,75x9,5	8,07	**028**
62 357 422	19x2	1,61	**257**	M5x10	1,21	**166**	12x20x6	31,26	**039**	M8x0,75x12	9,02	**029**
62 357 511	9x1,5	1,61	**254**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M4x0,5x6	7,39	**026**
62 357 811	9x1,5	1,61	**254**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M4x0,5x6	7,39	**026**
62 357 611	9x1,5	1,61	**254**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M4x0,5x6	7,39	**026**
62 357 911	9x1,5	1,61	**254**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M4x0,5x6	7,39	**026**
62 357 711	9x1,5	1,61	**254**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M4x0,5x6	7,39	**026**
62 357 514	12x1,5	1,61	**255**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M5x0,5x7,5	7,54	**027**
62 357 814	12x1,5	1,61	**255**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M5x0,5x7,5	7,54	**027**
62 357 614	12x1,5	1,61	**255**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M5x0,5x7,5	7,54	**027**
62 357 914	12x1,5	1,61	**255**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M5x0,5x7,5	7,54	**027**
62 357 714	12x1,5	1,61	**255**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M5x0,5x7,5	7,54	**027**
62 357 518	16x1,5	1,61	**256**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M6x0,75x9,5	8,07	**028**
62 357 818	16x1,5	1,61	**256**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M6x0,75x9,5	8,07	**028**
62 357 918	16x1,5	1,61	**256**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M6x0,75x9,5	8,07	**028**
62 357 618	16x1,5	1,61	**256**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M6x0,75x9,5	8,07	**028**
62 357 522	19x2	1,61	**257**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M8x0,75x12	9,02	**029**
62 357 822	19x2	1,61	**257**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M8x0,75x12	9,02	**029**
62 357 622	19x2	1,61	**257**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M8x0,75x12	9,02	**029**
62 357 722	19x2	1,61	**257**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M8x0,75x12	9,02	**029**
62 357 528	25x2	1,61	**258**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x1x14,2	10,35	**030**
62 357 828	25x2	1,61	**258**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x1x14,2	10,35	**030**
62 357 628	25x2	1,61	**258**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x1x14,2	10,35	**030**
62 357 728	25x2	1,61	**258**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M10x1x14,2	10,35	**030**

SpinTools – Extensions

▲ With internal coolant supply

STM





Adapter	LPR	SZID	DCONWS	DF	DCONMS	WT	STM Modular W4 Article no. 62 351 ... EUR	
	mm		mm	mm	mm	kg		
STM 11	25	STM 11	11	20	11	0,06	145,20	**111**
STM 11	35	STM 11	11	20	11	0,09	145,20	**211**
STM 14	30	STM 14	14	25	14	0,11	145,20	**114**
STM 14	45	STM 14	14	25	14	0,17	145,20	**214**
STM 18	40	STM 18	18	32	18	0,23	154,80	**118**
STM 18	60	STM 18	18	32	18	0,35	154,80	**218**
STM 22	50	STM 22	22	40	22	0,45	165,40	**122**
STM 22	80	STM 22	22	40	22	0,73	165,40	**222**
STM 28	50	STM 28	28	50	28	0,71	165,40	**128**
STM 28	75	STM 28	28	50	28	1,07	177,00	**228**
STM 28	100	STM 28	28	50	28	1,44	186,50	**328**
STM 36	60	STM 36	36	63	36	1,33	177,00	**136**
STM 36	90	STM 36	36	63	36	2,02	196,00	**236**
STM 36	120	STM 36	36	63	36	2,72	218,30	**336**



O-Ring



Screw for drivers



Driver

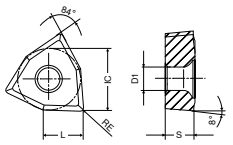


Clamping screw ST

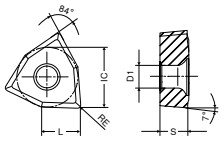
Spare parts DCONWS		W7 Article no. 62 950 ... EUR			W7 Article no. 62 950 ... EUR			W7 Article no. 62 950 ... EUR			W7 Article no. 62 950 ... EUR	
11	9x1,5	1,61	**254**	M2x2,5	0,69	**162**	5x8,5x3	20,99	**035**	M4x0,5x6	7,39	**026**
14	12x1,5	1,61	**255**	M2,5x6	0,69	**163**	6x10,3x4	21,83	**036**	M5x0,5x7,5	7,54	**027**
18	16x1,5	1,61	**256**	M3x8	0,95	**164**	8x15x5	23,42	**037**	M6x0,75x9,5	8,07	**028**
22	19x2	1,61	**257**	M4x10	0,95	**165**	10x18,1x6	26,60	**038**	M8x0,75x12	9,02	**029**
28	25x2	1,61	**258**	M5x10	1,21	**166**	12x20x6	31,26	**039**	M10x1x14,2	10,35	**030**
36	33x2	1,61	**259**	M6x12	1,21	**167**	16x26,5x8	39,63	**040**	M12x1x18	13,25	**031**

WCMT / WCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
WCGT 0201..	2,71	1,59	2,1	3,97
WCMT 0201..	4,34	1,59	2,1	3,97

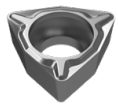
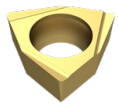


WCMT



WCGT

WCMT / WCGT

		CWC06		CWN10		CWP25	
							
		F		F		F	
		CERMET					
		WCMT		WCGT		WCGT	
		X2		X2		X2	
ISO	RE	**Article no. 70 294 ...**		**Article no. 70 295 ...**		**Article no. 70 295 ...**	
	mm	EUR		EUR		EUR	
020102	0,2	11,56	**850**	59,12	**850**	26,37	**500**
020104	0,4			59,12	**852**		

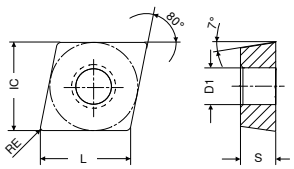
Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○	●	
hardened materials		●	

→ v_c Page 52

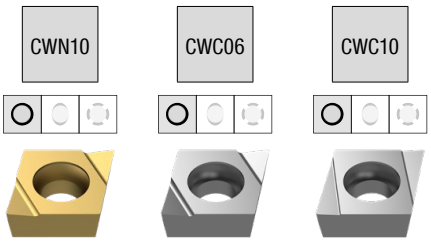
Additional inserts can be found in → **Chapter 9, Turning Tools**

CCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
CCGT 06..	6,4	2,38	2,8	6,35
CCGT 09..	9,7	3,97	4,4	9,52



CCGT



ISO	RE	F	F	F
			CERMET	CERMET
		CCGT	CCGT	CCGT
		X2	X2	X2
		Article no. 70 296 ...	Article no. 70 296 ...	Article no. 70 300 ...
	mm	EUR	EUR	EUR
060202L	0,2	39,88 300	25,62 850	12,86 903
060204L	0,4	39,88 302	25,62 852	12,86 905
09T302L	0,2	43,13 304	27,89 854	16,64 911
09T304L	0,4	43,13 306	27,89 856	16,64 913

Steel	●	●	●
Stainless steel	●	○	●
Cast iron	●	●	●
Non ferrous metals	●	●	
Heat resistant alloys	●	○	
hardened materials	●		

→ v_c Page 52

Additional inserts can be found in → **Chapter 9, Turning Tools**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

5

Cutting data standard values for precision adjustment heads

Fine machining with depth of cut a_p = 0.1 - 0.2 mm

	Insert								Tool diameter	● 1st choice ○ suitable		
	BK8440	BK8425	BK2710	K10	BK60	BK6110	BK7615	CBN40	Ø 6-125	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	f (mm/U)			
1.1	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,12	●	○	
1.2	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,12	●	○	
1.3	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.4	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.5	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.6	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.7	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.8	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.9	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.10	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.11	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.12	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.13	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.14	**60–120**	**60–120**	**60–120**		**60–120**	60-120			0,02-0,08	○	●	
1.15	**60–120**	**60–150**	**60–150**		**60–150**	60-150			0,03-0,10	○	●	
1.16	**100–150**	**100–150**	**100–150**		**100–150**	100-150			0,03-0,10	○	●	
2.1	**100–150**	**100–150**	**100–150**						0,01-0,10	●		
2.2	**100–150**	**100–150**	**100–150**						0,01-0,10	●		
2.3	**100–150**	**100–150**	**100–150**						0,01-0,10	●		
2.4	**100–120**	**100–120**	**100–120**						0,01-0,10	●		
2.5	**100–140**	**100–140**	**100–140**						0,01-0,10	●		
2.6	**100–140**	**100–140**	**100–140**						0,01-0,10	●		
2.7	**80–100**	**80–100**	**80–100**						0,01-0,10	●		
3.1		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.2		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.3		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.4		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.5		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.6		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.7		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.8		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
4.1				**0–500**					0,02-0,12	●		
4.2				**0–500**					0,02-0,12	●		
4.3				**0–500**					0,02-0,12	●		
4.4				**0–500**					0,02-0,12	●		
4.5				**0–500**					0,02-0,12	●		
4.6				**0–500**					0,02-0,12	●		
4.7				**0–500**					0,02-0,12	●		
4.8												
4.9												
4.10												
4.11				**0–500**					0,02-0,12	●		
4.12				**0–500**					0,02-0,12	●		
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5				**20–50**					0,01-0,08	●		
5.6												
5.7				**20–50**					0,01-0,08	●		
5.8												
5.9				**15–30**					0,01-0,08	●		
5.10				**15–30**					0,01-0,08	●		
5.11				**15–30**					0,01-0,08	●		
6.1								**80**	0,04-0,08		●	
6.2								**60**	0,04-0,08		●	
6.3								**60**	0,04-0,08		●	
6.4											●	
6.5												

Cutting data values for rough boring heads

Depth of cut a_p = 2.5 – 7 mm

	Insert					Tool Ø (mm)				● 1st choice ○ suitable		
	CTCP125 (HCX1125)	CTCP115 (HCX1115)	CTCP135 (HCR1135)	CTC2135 (CWN2135)	H10T (CWK15)	Ø 23,5–40,5	Ø 40,5–66,5	Ø 66,5–87,5	Ø 87,5–153	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	f (mm/U)	f (mm/U)	f (mm/U)	f (mm/U)			
1.1	**180–240**	**150–190**	**160–200**	160–210		0,3–0,4	0,4–0,5	0,5–0,7	0,6–0,8	●	○	○
1.2	**230–280**	**170–220**	**170–220**	180–230		0,3–0,4	0,4–0,5	0,5–0,7	0,6–0,8	●	○	○
1.3	**240–290**	**170–210**	**150–190**	150–190		0,3–0,4	0,4–0,5	0,5–0,7	0,6–0,8	●	○	○
1.4	**180–250**	**160–200**	**160–200**	150–190		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	●	○	○
1.5	**200–240**	**170–230**	**140–190**	140–190		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●	○	○
1.6	**190–240**	**160–240**	**150–210**	150–210		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●	○	○
1.7	**180–280**	**130–190**	**150–190**	150–200		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	●	○	○
1.8	**150–210**	**130–180**	**130–170**	130–170		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	○	●	
1.9	**140–200**	**150–210**	**150–180**	160–190		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	○	●	
1.10	**170–220**	**160–200**	**130–180**	130–170		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.11	**160–220**	**150–200**	**120–160**	130–170		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.12	**170–240**	**170–210**	**140–190**	160–190		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.13	**160–230**	**130–190**	**120–170**	120–180		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.14	**150–190**	**150–200**	**110–150**	120–170		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.15	**150–210**	**130–200**	**100–140**	100–150		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.16	**150–190**	**130–200**	**100–140**	100–150		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
2.1	200–280		140–200	**140–220**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.2	200–260		140–190	**160–240**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.3	190–260		110–190	**130–200**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.4	190–240		100–180	**120–190**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.5			80–150	**100–160**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.6			55–75	**90–120**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.7			55–75	**90–120**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
3.1	130–160	150–220			120–160	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.2	120–170	130–220			90–140	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.3	130–180	200–360			130–170	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.4	100–180	180–220			90–130	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.5	150–200	160–350			140–200	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.6	130–160	160–260			120–160	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.7	150–200	180–350			140–200	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.8	130–180	180–350			120–160	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
4.1					**300–2500**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.2					**200–2500**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.3					**400–2000**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.4					**400–1600**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.5					**200–1000**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.6					**150–300**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.7					**250–600**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.8					**150–400**							
4.9					**150–400**							
4.10					**150–400**							
4.11					**150–300**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.12					**130–350**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.13					**100–200**							
4.14					**80–160**							
4.15					**60–150**							
4.16												
4.17												
4.18					**60–140**					●		
4.19												
5.1			20–40	**20–40**						●		
5.2		15–40	20–40	**20–40**						●		
5.3		15–40	8–25	**15–35**						●		
5.4		15–40	8–25	**15–35**						●		
5.5		15–30	4–15	**8–25**						●		
5.6		15–30	4–15	**4–15**						●		
5.7		15–30	4–15	**4–15**						●		
5.8		15–30	4–12	**4–15**						●		
5.9			80–130	**80–130**	60–120					●		
5.10			15–35	**15–35**	30–80					●		
5.11			15–35	**15–35**	30–80					●		
6.1						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.2						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.3						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.4						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.5												

5

Cutting data values for fine and rough boring heads

Fine machining with depth of cut a_p = 0.1 – 0.4 mm

	Insert			Boring tools with carbide cutting edge	Tool diameter		● 1st choice ○ suitable		
	CWN10 CWP25	CWC06	CWC10	K10	Ø 3–200	Ø 200–655	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	f (mm/U)	f (mm/U)			
1.1	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.2	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.3	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.4	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.5	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.6	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.7	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.8	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	○	●	
1.9	150–220	**200–300**	**80–150**	150–200	0,05–0,16	0,08–0,2	○	●	
1.10	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	○	●	
1.11	150–220	**200–250**	**100–250**	80–120	0,05–0,16	0,08–0,2	○	●	
1.12	150–220	**200–250**	**80–200**	80–120	0,05–0,16	0,08–0,2	○	●	
1.13	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
1.14	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
1.15	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
1.16	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
2.1	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.2	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.3	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.4	80–120	80–120	**100–120**	60–80	0,05–0,16	0,08–0,2	●		
2.5	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.6	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.7	80–100	80–100	**100–140**	40–60	0,05–0,16	0,08–0,2	●		
3.1	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.2	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.3	140–180	**140–180**	**100–150**	120–150	0,05–0,16	0,08–0,2	○	●	
3.4	120–160	**120–160**	**100–150**	100–130	0,05–0,16	0,08–0,2	○	●	
3.5	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.6	120–160	**120–160**	**100–150**	100–130	0,05–0,16	0,08–0,2	○	●	
3.7	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.8	120–160	**120–160**	**100–150**	100–130	0,05–0,16	0,08–0,2	○	●	
4.1	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.2	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.3	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.4	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.5	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.6	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.7	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.8						0,08–0,2			
4.9						0,08–0,2			
4.10						0,08–0,2			
4.11	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.12	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1	30–80*								
5.2	30–80*								
5.3	30–80*								
5.4	30–80*								
5.5	30–80*								
5.6	30–80*								
5.7	30–80*								
5.8	30–80*								
5.9	30–80*								
5.10	30–80*								
5.11	30–80*								
6.1	120–220*				0,05–0,16	0,05–0,16		●	
6.2	70–180*				0,05–0,16	0,05–0,16		●	
6.3	50–150*				0,05–0,16	0,05–0,16		●	
6.4	40–120*				0,05–0,16	0,05–0,16		●	
6.5									

Correction factor (Kf v_c) for the cutting speed (v_c) depending on overhang:

Kf v_c = 1,0 to 4xD
Kf v_c = 0,8 to 5xD
Kf v_c = 0,6 to 6xD

* Only CWN10

Cutting data values for Micro boring heads

	Boring bars / inserts		● 1st choice ○ suitable		
	TiN		Emulsion	Compressed air	MMS
Index	v_c m/min	f (mm/U)			
1.1	**190**	**0,02**	●		
1.2	**210**	**0,02**	●		
1.3	**190**	**0,02**	●		
1.4	**170**	**0,02**	●		
1.5	**180**	**0,02**	●		
1.6	**180**	**0,02**	●		
1.7	**170**	**0,02**	●		
1.8	**170**	**0,02**	●		
1.9	**110**	**0,02**	●		
1.10	**120**	**0,02**	●		
1.11	**100**	**0,02**	●		
1.12	**160**	**0,02**	●		
1.13	**140**	**0,02**	●		
1.14	**60**	**0,02**	●		
1.15	**100**	**0,02**	●		
1.16	**110**	**0,02**	●		
2.1	**80**	**0,02**	●		
2.2	**85**	**0,02**	●		
2.3	**75**	**0,02**	●		
2.4	**70**	**0,02**	●		
2.5	**75**	**0,02**	●		
2.6	**75**	**0,02**	●		
2.7	**70**	**0,02**	●		
3.1	**200**	**0,02**	●		
3.2	**150**	**0,02**	●		
3.3	**120**	**0,02**	●		
3.4	**110**	**0,02**	●		
3.5	**180**	**0,02**	●		
3.6	**150**	**0,02**	●		
3.7	**180**	**0,02**	●		
3.8	**150**	**0,02**	●		
4.1	**300**	**0,02**	●		
4.2	**240**	**0,02**	●		
4.3	**240**	**0,02**	●		
4.4	**180**	**0,02**	●		
4.5	**180**	**0,02**	●		
4.6	**290**	**0,02**	●		
4.7	**290**	**0,02**	●		
4.8	**240**	**0,02**	●		
4.9	**230**	**0,02**	●		
4.10	**210**	**0,02**	●		
4.11	**290**	**0,02**	●		
4.12	**290**	**0,02**	●		
4.13	**300**	**0,02**	●		
4.14	**280**	**0,02**	●		
4.15	**250**	**0,02**	●		
4.16	**220**	**0,02**	●		
4.17	**300**	**0,02**	●		
4.18	**60**	**0,02**	●		
4.19	**60**	**0,02**	●		
5.1	**60**	**0,02**	●		
5.2	**40**	**0,02**	●		
5.3	**30**	**0,02**	●		
5.4	**20**	**0,02**	●		
5.5	**20**	**0,02**	●		
5.6	**20**	**0,02**	●		
5.7	**20**	**0,02**	●		
5.8	**20**	**0,02**	●		
5.9	**30**	**0,02**	●		
5.10	**40**	**0,02**	●		
5.11	**25**	**0,02**	●		
6.1	120	0,02	●		
6.2	110	0,02	●		
6.3	95	0,02	●		
6.4	70	0,02	●		
6.5	50	0,02	●		

Maximum Speeds and Scale Accuracy

Maximum speeds for fine boring heads Ø 3–88.1 mm

Boring range	Offset X = ≤ 0,5 mm n_{max} in $1/_{min}$	Offset X = > 0,5 mm n_{max} in $1/_{min}$
Ø 3–20 mm	16000	6000
Ø 20–48 mm	12000	4000
Ø 48–88 mm	8000	2000



Maximum speeds for rough boring heads Ø 23.5–153 mm

Boring range	Maximum speed n_{max} in $1/_{min}$
Ø 24–31 mm	12000
Ø 31–40 mm	10000
Ø 40–51 mm	8000
Ø 51–68 mm	6500
Ø 67–87 mm	5000
Ø 87–116 mm	4000
Ø 116–153 mm	3000



The specified maximum speeds refer to an overhang length of up to 4xD.

For longer overhangs the maximum speeds should be reduced as follows:

5xD = 80 % n_{max}
6xD = 60 % n_{max}

> 6xD n_{max} identify with caution

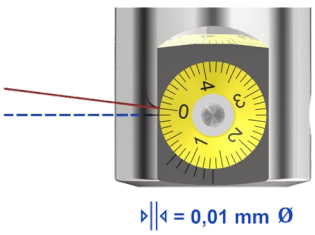
Maximum spindle speed for single point boring heads Ø 24–154 mm

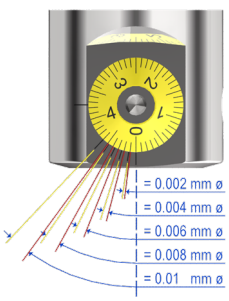
Boring range	Maximum speed with unbalanced system n_{max} in $1/_{min}$	Maximum speed with Balanced System n_{max} in $1/_{min}$
Ø 24–31 mm	9000	12000
Ø 31–40 mm	7500	10000
Ø 40–51 mm	5250	8000
Ø 51–67 mm	4000	6500
Ø 67– 87 mm	3000	5000
Ø 87–116 mm	2500	4000
Ø 116–153 mm	1750	3000



Large scale with 0.002 mm adjustment

How it works:

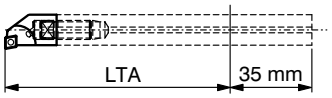




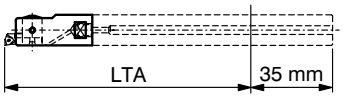
Maximum overhang length LTA

▲ Clamping length 35 mm

Boring bar		High Speed Boring Head 62 361 ...																Fine boring head 62 304 ...		
62 353 ...		014	015	016	017	018	019	020	021	022	023	025	027	030	033	037	040	017	020	024
008	LTA mm	**56**																		
009			**63**																	
010				**70**																
011					**77**															
012						**84**														
013							**91**													
014								**98**	**98**									**115**		
016										**112**	**112**	**112**	**112**	**112**	**112**	**112**	**112**		**125**	
018																				**105**
118																				**145**
218																				**185**



High Speed Boring Head 62 361 ...



Fine boring head 62 304 ...

5

Coatings

K10

- ▲ Carbide, uncoated
- ▲ ISO | **K10**
- ▲ Uncoated carbide grade for machining grey cast iron or non-ferrous metals, depending on the cutting edge geometry

BK2710

- ▲ Carbide, TiAlN-coated
- ▲ ISO | P10 | M10 | **K10**
- ▲ Extremely wear-resistant carbide grade for machining stainless steels, structural steels and tool steels as well as cast iron materials

BK8440

- ▲ Carbide, TiCN-TiN-coated
- ▲ ISO | **P35** | M10
- ▲ Very tough carbide grade for medium cutting speeds and interrupted cut

BK7615

- ▲ Carbide, TiCN-Al_2O_3-coated
- ▲ ISO | **K15**
- ▲ Highly productive grade with extreme edge stability for wet and dry machining of all cast iron materials

TiN

- ▲ TiN coating
- ▲ Maximum application temperature: 450°C

CWN10

- ▲ Carbide, TiN-coated
- ▲ ISO | **K10**
- ▲ The carbide grade for machining steels, stainless steels and non-ferrous metals

CWC10

- ▲ Cermet, uncoated
- ▲ ISO | **P15** | **M10** | K10
- ▲ The uncoated cermet grade for finish machining stainless and hardened steel
- ▲ Particularly wear resistant thanks to high heat resistance

BK60

- ▲ Carbide, TiC-TiCN-TiN-coated
- ▲ ISO | P25 | **M10**
- ▲ Multi-layer coating for long service life even in the upper cutting speed range

CBN40

- ▲ Cubic boron nitride, uncoated
- ▲ ISO | **H05**
- ▲ Uncoated cutting material made of cubic boron nitride for machining hardened steels over 45 HRC, heat-resistant nickel-based or cobalt-based alloys

BK8425

- ▲ Carbide, TiAlN/TiN-coated
- ▲ ISO | **P25** | **M25** | **K25**
- ▲ Universal grade with greater wear resistance thanks to innovative PVD multi-layer coating

BK6110

- ▲ Carbide, TiCN-TiN-Al_2O_3-coated
- ▲ ISO | P10 | **K10**
- ▲ Wear-resistant carbide for machining cast iron and steel materials

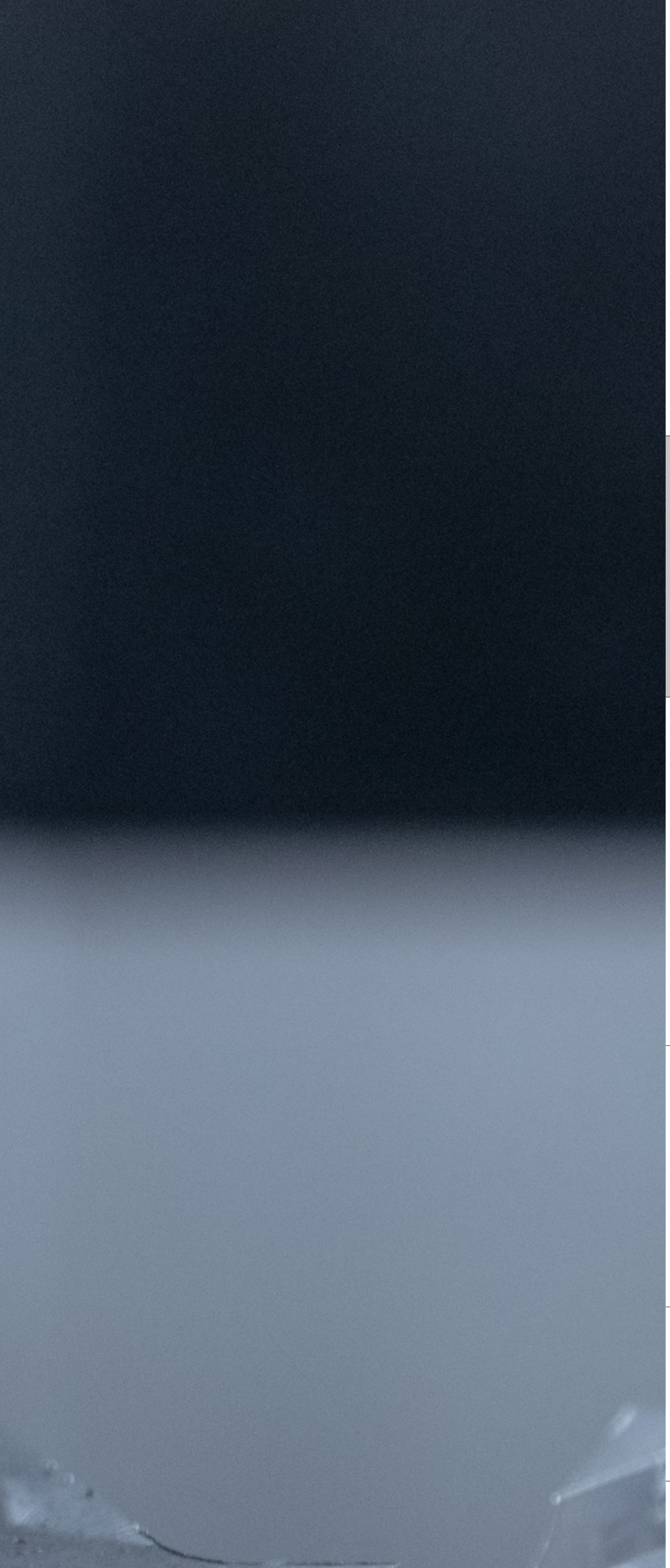
CWC06

- ▲ Cermet, TiC/TiN-coated
- ▲ ISO | **P10** | M10 | **K10** | N10
- ▲ Coated cermet grade for fine boring at high cutting speed and with a uniform cut

CWP25

- ▲ Carbide, uncoated
- ▲ ISO | **P25** | **M25** | K25 | **N25** | S25
- ▲ Uncoated carbide grade for fine boring with large hole depths and small machining allowances





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Tap Types	3
Toolfinder	
Toolfinder – WNT Performance	4+5
Toolfinder – WNT Standard	6+7
Taps Overview	8–20
Product programme	21–109
Technical Information	
Thread core hole diameter for tapered threads	110
Tapped hole pilot diameter	111+112
Tap Type Explanation	113
Thread tolerances and recommended manufacturing tolerances	114
Thread formers	115
Troubleshooting	116
Coatings	117

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Chamfer form

B 4–5	Form B (with spiral point, 4 – 5 cutting leads)
C 2–3	Form C (without spiral point, 2 – 3 cutting leads)
D 4–5	Form D (without spiral point, 4 – 5 cutting leads)
E 1,5–2	Form E (without spiral point, 1,5 – 2 cutting leads)

Helix angle

◁ 42°	Example: helix angle 42°

Tolerances

ISO 2 6H	Explanation of the tolerances can be found on → **Page 114.**

Tensile strength

≤ 1100 N/mm²	Example up to 1100 N/mm²



Tap Material

HSS	High-speed steel
HSS-E	High-performance high speed steel
HSS-PM	High-performance sintered high-speed steel
VHM	Solid carbide

Coloured rings

WNT \ Performance

An explanation of the coloured rings can be found on → **Page 117.**

Thread types

M	Explanation of the thread types can be found on → **Page 3.**

Version

	Int. coolant supply

Tap types

Tool type

WNT \ Performance

Stabil	for through holes to 4xD	**Salo-Rex**	for blind holes up to 3xD, high helix angle for secure chip evacuation	**TWIN**	straight flutes for through and blind holes up 2xD
DL	left hand helix for through holes up to 4xD	**SL**	for blind holes up to 2xD, 15°, 25° or 30° helix angle	**Spanlos**	thread former for through and blind holes up to 3xD

A detailed explanation of the types of tools can be found on → **Page 113**.

Application range

WNT \ Performance

UNI	for universal application	**ST**	for good quality free machining steel	**VG**	for tempered and heat-resistant steels < 1100 N/mm²
HR	for high-tensile steels < 1400 N/mm²	**GG**	for cast iron	**VA**	for stainless and acid-resistant steels up to 1100 N/mm²
NW	for aluminium	**Soft**	for soft materials	**Ms**	for short chipping brass
Ti	for titanium and titanium alloys	**Ni**	special for Inconel 718	**AMPCO**	for Ampco alloys
HT	for hardened steel and chilled iron up to 55 HRc	**EC**	Spanlos – thread former for universal application	**NEO**	Spanlos – thread former for heat resistant alloys
ERGO	hand taps for stainless, heat-resistant and heat-treated steels up to 1100 N/mm²	**ERGO F.T.**	hand tap for steel up to 1400 N/mm², wolfram, chilled iron	**FE**	dies for steel

WNT \ Standard

UNI	for universal application up to 1000 N/mm²	**FE**	for steel to 850 N/mm²	**FE-HF**	for high-tensile steel to 1100 N/mm ²
VA	for corrosion and acid-resistant steels	**GG**	for cast iron	**AL**	for aluminium and aluminium alloys

Special Features

CNC	for synchronised CNC machining with minimum length compensation chuck	**NC**	for synchronised CNC machining with minimum length compensation chuck	**NCW**	with Weldon flat for synchronised CNC machining without length compensation chuck
AZ	with intermittent teeth, reduces friction	**S**	with back taper, for deep threads	**DRY**	for dry machining or minimum quantity lubrication (MMS)
TS	for high-speed machining, up to 100 m/min.	**LH**	for left hand threads	**EL**	extra long, with double overall length
AUT	short version for automatic use	**SN**	thread formers with lubrication grooves	**ES**	extra short
MMB	machine taps	**R_z=1**	lapped dies		

Thread types

M	ISO metric coarse thread DIN 13	**UNF**	Unified fine thread ASME – B1.1	**NPTF**	American taper pipe thread with sealing (1:16) ANSI/ASME – B1.20.3
EG M	ISO Metric coarse thread for wire inserts DIN 8140-2	**EG UNF**	EG Unified fine thread for wire inserts ASME – B18.29.1	**Rp**	Cyl. Whitworth coarse thread DIN EN 10226-1 (ISO7-1)
MF	ISO Metric fine thread DIN 13	**UNJC**	Unified coarse thread ASME – B1.15 and ISO 3161	**Rc**	Whitworth taper pipe thread (1:16) DIN EN 10226-2 (ISO7-1)
G	Whitworth pipe thread DIN EN ISO 228	**UNJF**	Unified fine thread ASME – B1.15 and ISO 3161	**Tr**	ISO metric trapezoidal thread DIN 103
UNC	Unified coarse thread ASME – B1.1	**BSW**	Whitworth thread BS84		
EG UNC	EG Unified coarse thread for wire inserts ASME – B18.29.1	**NPT**	American taper pipe thread with sealing (1:16) ANSI/ASME – B1.20.1		

The thread types BSW, NPTF, Rp and Rc as well as hand taps and dies are now available in the online shop.

6

Toolfinder – WNT Performance

Thread formers

for cold-formable materials

HSS taps

-  Through hole – Blind hole

for universal application up to 1100 N/mm²

-  Through hole
-  Blind hole

for steel up to 750 N/mm²

-  Through hole
-  Blind hole
-  Through hole – Blind hole

for steel up to 1400 N/mm²

-  Through hole
-  Blind hole
-  Through hole – Blind hole

for corrosion and acid-resistant steels

-  Through hole
-  Blind hole

for cast iron materials

-  Through hole – Blind hole

for heat-resistant materials

-  Through hole
-  Blind hole
-  Through hole – Blind hole

for aluminium and non-ferrous metal

-  Through hole
-  Blind hole

Hard materials

-  Through hole – Blind hole

For tools for other applications, refer to the taps overview on → **Pages 8–20.**

Shank extensions for taps and thread-cutting oils can be found in our online shop at cuttingtools.ceratizit.com

WNT \ Performance

Tool type	Application range	M	EG M	MF	G	UNC	EG UNC	UNJC	UNF	EG UNF	UNJF	BSW	NPT	NPTF	Rp	Rc	Tr
Spanlos	EC	59–61		81	89	94			103								
Stabil	UNI	21–23	63	65+66	83	90	95		98	104		🛒					
Salo-Rex	UNI	35–38	64	69	85	92	96		100	105		🛒	🛒				
Stabil	ST	24+25		66	83												109
Salo-Rex	ST	39–41		71+72	86												
TWIN	ST	52+53 56		78–80	88								108	🛒	🛒	🛒	
Stabil	HR	25															
Salo-Rex	HR	39–41															
TWIN	HR	52+53		78+79	88												
Stabil	VA	26			83	90											
Salo-Rex	VA	42		74	86	92			100				106				
TWIN	GG	54		79													
Stabil	Ti	27				90			98		🛒						
SL	Ti	44				🛒		97	101		🛒						
TWIN	AMPCO	52															
Stabil	NW	26															
Salo-Rex	NW	43		74													
TWIN	HT	55		78													

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Toolfinder – WNT Standard

Thread formers

for cold-formable materials

-  Through hole – Blind hole

HSS taps

for universal application up to 1000 N/mm²

-  Through hole
-  Blind hole

for steel to 850 N/mm²

-  Through hole
-  Blind hole

for high-tensile steels up to 1100 N/mm²

-  Through hole
-  Blind hole

for corrosion and acid-resistant steels

-  Through hole
-  Blind hole

for cast iron materials

-  Through hole – Blind hole

for aluminium and non-ferrous metal

-  Through hole
-  Blind hole

For tools for other applications, refer to the taps overview on → **Pages 8–20.**

Shank extensions for taps and thread-cutting oils can be found in our online shop at cuttingtools.ceratizit.com

Application range	WNT \ Standard M	MF	G	UNC	UNF
UNI	62	82			
UNI	31+32	67+68	84	91	99
UNI	49+50	75+76	87	93	102
FE	32+34	68		91	99
FE	50	76		93	102
FE-HF	32	68		91	
FE-HF	50	76		93	
VA	33	68		91	99
VA	50+51	77		93	102
GG	58				
AL	33				
AL	51				

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Stabil	UNI	ISO 2 6H ISO 3 6G 7G	HSS-E	■			21+22	
Universal					UNI	ISO 2 6H	HSS-E HSS-PM	■				31
Universal				Stabil	UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck	23	
Universal					UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck		32
Universal				Stabil	UNI DRY	ISO 2X 6HX	HSS-E	■		for dry machining or minimum quantity lubrication (MMS)	🛒	
Universal				Stabil	UNI CNC	ISO 2X 6HX ISO 3X 6GX 7GX	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	23	
Universal					UNI NC	ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		32
Universal				Stabil	UNI EL	ISO 2 6H	HSS-E	■		extra long, with double overall length	29	
Steel				Stabil	ST	ISO 2 6H	HSS-E		□		24	
Steel				Stabil	ST	ISO 1 4H ISO 3 6G	HSS-E		□		🛒	
Steel					FE	ISO 2 6H	HSS-E		□			32
Steel					FE ES	ISO 2 6H	HSS-E		□	extra short		34
Steel				Stabil	ST AZ	ISO 2 6H	HSS-E		□	with intermittent teeth, reduces friction	24	
Steel				Stabil	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	24	
Steel				Stabil	ST TS	ISO 2X 6HX	HSS-E	■		for high-speed machining, up to 100 m/min.	25	
Steel				Stabil	HR	ISO 2X 6HX	HSS-PM	■			25	
Steel				Stabil	VG	ISO 2X 6HX	HSS-E	■			25	
Steel					FE-HF	ISO 2 6H	HSS-E	■				32
Steel				Stabil	VG AZ	ISO 2 6H	HSS-E	■		with intermittent teeth, reduces friction	🛒	

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Steel	✓			Stabil	ST EL	ISO 2 6H	HSS-E		□	extra long, with double overall length	29	
	✓				ST MMB	ISO 2 6H	HSS-E		□	Machine taps	30	
Stainless steel	✓			Stabil	VA	ISO 2 6H	HSS-E	■			26	
	✓				VA	ISO 2 6H	HSS-PM HSS-E	■	□			33
Non-ferrous metals	✓			Stabil	NW	ISO 2 6H	HSS-E	■			26	
	✓				AL	ISO 2 6H	HSS-E	■	□			33
	✓			Stabil	Soft	ISO 2 6H	HSS-E	■			🛒	
Heat-resistant	✓			Stabil	Ti	ISO 1X 4HX ISO 2X 6HX	HSS-PM	■			27	
	✓			DL	Ti	ISO 2X 6HX	HSS-E	■			28	
	✓			DL	Ni	ISO 2X 6HX	HSS-E	■			28	
Universal		✓		Salo-Rex	UNI	ISO 2 6H 7G	HSS-E	■		with thro' coolant	35+36	
		✓		Salo-Rex	UNI	ISO 1 4H ISO 3 6G	HSS-E	■			🛒	
		✓			UNI	ISO 2 6H	HSS-E HSS-PM	■				49
		✓		Salo-Rex	UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck	36	
		✓			UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck		50
		✓		Salo-Rex	UNI CNC	ISO 2X 6HX ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck, with thro' coolant	37	
		✓		Salo-Rex	UNI CNC	ISO 3 6G, 7G	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	🛒	
		✓			UNI NC	ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		49
		✓		Salo-Rex	UNI DRY	ISO 2 6H	HSS-E	■		for dry machining or minimum quantity lubrication (MMS), with thro' coolant	38	

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Salo-Rex	UNI S	ISO 2 6H	HSS-E	■		with back taper, for deep threads	🛒	
				Salo-Rex	UNI ES	ISO 2 6H	HSS-E	■		extra short	45	
				Salo-Rex	UNI EL	ISO 2 6H	HSS-E	■		extra long, with double overall length	47	
				SL	UNI	ISO 2 6H	HSS-E		□		🛒	
Steel				SL	ST	ISO 2 6H	HSS-E		□		🛒	
				SL	ST CNC	ISO 2X 6HX	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck, with thro' coolant	39	
				SL	ST TS	ISO 2 6H	HSS-PM	■		for high-speed machining, up to 100 m/min.	🛒	
				SL	ST TS	ISO 2X 6HX	HSS-E	■		for high-speed machining, up to 100 m/min.	39	
				SL	ST ES	ISO 2 6H	HSS-E		□	extra short	46	
				SL	ST AUT/ES	ISO 2 6H	HSS-E		□	short version for automatic use; extra short	46	
				SL	ST EL	ISO 2 6H	HSS-E		□	extra long, with double overall length	48	
				SL	HR	ISO 2 6H	HSS-PM		□		39	
				Salo-Rex	ST	ISO 2 6H	HSS-E	■	□		40	
				Salo-Rex	ST	ISO 1 4H ISO 3 6G	HSS-E	■	□		🛒	
					FE	ISO 2 6H	HSS-E		□			50
					FE-HF	ISO 2 6H	HSS-E	■				50
				Salo-Rex	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	40	
				Salo-Rex	ST ES	ISO 2 6H	HSS-E		□	extra short	🛒	
				Salo-Rex	ST EL	ISO 2 6H	HSS-E		□	extra long, with double overall length	47	

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Steel		✓		Salo-Rex	HR	ISO 2 6H	HSS-PM	■	□		41	
		✓		Salo-Rex	ST TS	ISO 2 6H	HSS-E	■		with thro' coolant	41	
Stainless steel		✓		Salo-Rex	VA	ISO 2 6H	HSS-E	■		with thro' coolant	42	
		✓			VA	ISO 2 6H	HSS-E HSS-PM	■	□			50+51
		✓		Salo-Rex	VA S	ISO 2 6H	HSS-E	■		with back taper, for deep threads	🛒	
Non-ferrous metals		✓		Salo-Rex	Soft	ISO 2 6H	HSS-E	■	□		43	
		✓		Salo-Rex	NW	ISO 2 6H	HSS-E	■			43	
		✓			AL	ISO 2 6H	HSS-E	■	□			51
Heat-resistant		✓		SL	Ti	ISO 2X	HSS-PM	■			44	
		✓		SL	Ni	ISO 2X ISO 2 6H	HSS-PM	■			44	
Steel			✓	TWIN	ST	ISO 2X 6HX	HSS-E		□		52	
			✓	TWIN	ST AZ	ISO 2X 6HX	HSS-E		□	with intermittent teeth, reduces friction	🛒	
			✓	TWIN	ST ES	ISO 2X 6HX	HSS-E		□	extra short	56	
			✓	TWIN	ST LH/ES	ISO 2X 6HX	HSS-E		□	for left hand threads; extra short	🛒	
			✓	TWIN	HR	ISO 2X 6HX	HSS-E	■			🛒	
			✓	TWIN	HR EL	ISO 2X 6HX	HSS-E	■		extra long, with double overall length	57	
Cast iron			✓	TWIN	GG	ISO 2X 6HX	HSS-E	■		with thro' coolant	54	
			✓		GG	ISO 2X 6HX	HSS-E	■				58
Non-ferrous metals			✓	TWIN	Ms	ISO 2X 6HX	HSS-E		□		🛒	

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Heat-resistant				TWIN	AMPCO	ISO 2X 6HX	HSS-PM		□		52	
Tempered steel				TWIN	HT	ISO 2X 6HX	VHM HSS-PM	■			55	
Machine thread formers				Spanlos	EC	ISO 2X 6HX	HSS-E HSS-PM	■			59	
				Spanlos	EC SN	ISO 2X 6HX ISO 3X 6GX	HSS-E HSS-PM	■		Thread formers with oil grooves and thro' coolant	60+61	
				Spanlos	NEO SN	ISO 2X 6HX	HSS-PM	■		Thread formers with oil grooves and thro' coolant	61	
					UNI	ISO 2X 6HX	HSS-E	■				62
					UNI SN	ISO 2X 6HX	HSS-E	■		Thread formers with lubrication grooves		62
Hand taps					ST	ISO 2X 6HX	HSS-E VHM		□		🛒	
					ERGO	ISO 2X 6HX	HSS-E		□		🛒	
					ERGO F.T.	ISO 2X 6HX	HSS-E	■			🛒	
Dies					FE	ISO 6g ISO 6e	HSS		□		🛒	
					FE	ISO 6g	HSS		□			🛒
					FE R_z=1	ISO 6g	HSS		□	Lapped Dies	🛒	
					FE LH	ISO 6g	HSS		□	for left hand threads	🛒	
					VA	ISO 6g	HSS-E		□		🛒	
					VA R_z=1	ISO 6g	HSS-E		□	Lapped Dies	🛒	
					Ms R_z=1	ISO 6g	HSS		□	Lapped Dies	🛒	

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Metric ISO standard thread for wire thread inserts												
Universal	✓			Stabil	UNI	6H mod	HSS-E	■			63	
Universal		✓		Salo-Rex	UNI	6H mod	HSS-E	■			64	
Non-ferrous metals		✓		Salo-Rex	Soft	6H mod	HSS-E	■			64	
MF – Metric ISO Fine Thread												
Universal	✓			Stabil	UNI	ISO 2 6H	HSS-E	■			65+66	
Universal	✓			Stabil	UNI	ISO 3 6G	HSS-E	■			🛒	
Universal	✓				UNI	ISO 2 6H	HSS-PM HSS-E	■				67+68
Universal	✓			Stabil	UNI DRY	ISO 2X 6HX	HSS-E	■		for dry machining or minimum quantity lubrication (MMS)	🛒	
Steel	✓			Stabil	ST	ISO 2 6H	HSS-E		□		🛒	
Steel	✓				FE	ISO 2 6H	HSS-E		□			68
Steel	✓				FE-HF	ISO 2 6H	HSS-E	■				68
Steel	✓			Stabil	ST TS	ISO 2X 6HX	HSS-E	■		for high-speed machining, up to 100 m/min.	66	
Steel	✓			Stabil	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	66	
Steel	✓			Stabil	VG	ISO 2X 6HX	HSS-E	■			65+66	
Stainless steel	✓			Stabil	VA	ISO 2 6H	HSS-E	■			🛒	
Stainless steel	✓				VA	ISO 2 6H	HSS-E	■				68
Universal		✓		Salo-Rex	UNI	ISO 2 6H ISO 3 6G	HSS-E	■		with thro' coolant	69+70	
Universal		✓			UNI	ISO 2 6H	HSS-E HSS-PM	■				75+76
Universal		✓		Salo-Rex	UNI CNC	ISO 3 6G	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	🛒	

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

MF – Metric ISO Fine Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Salo-Rex	UNI CNC	7G ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	70	
					UNI NC	ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		76
Steel				Salo-Rex	ST	ISO 2 6H	HSS-E		□		71	
				Salo-Rex	ST	ISO 1 4H	HSS-E		□			
					FE	ISO 2 6H	HSS-E		□			76
					FE-HF	ISO 2 6H	HSS-E	■				76
				Salo-Rex	ST TS	ISO 2 6H	HSS-E	■		for high-speed machining, up to 100 m/min.		
				Salo-Rex	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	71	
				SL	ST	ISO 2 6H	HSS-E		□		72	
				SL	ST CNC	ISO 2X 6HX	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		
Stainless steel				Salo-Rex	VA	ISO 2 6H	HSS-E	■			74	
					VA	ISO 2 6H	HSS-E HSS-PM	■	□			77
Non-ferrous metals				Salo-Rex	NW	ISO 2 6H	HSS-E	■			74	
Steel				TWIN	ST	ISO 2X 6HX	HSS-E		□		78	
				TWIN	ST ES	ISO 2X 6HX	HSS-E		□	extra short	80	
				TWIN	ST LH/ES	ISO 2X 6HX	HSS-E		□	for left hand threads	80	
				TWIN	HR	ISO 2X 6HX	HSS-E	■			78+79	
Cast iron				TWIN	GG	ISO 2X 6HX	HSS-E	■			79	
Tempered steel				TWIN	HT	ISO 2X 6HX	VHM	■			78	

 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
MF – Metric ISO Fine Thread												
Machine thread formers			●	Spanlos	EC	ISO 2X 6HX	HSS-E	■			81	
Machine thread formers			●	Spanlos	EC SN	ISO 2X 6HX	HSS-E	■		Thread formers with lubrication grooves	81	
Machine thread formers			●		UNI	ISO 2X 6HX	HSS-E	■				82
Machine thread formers			●		UNI SN	ISO 2X 6HX	HSS-E	■		Thread formers with lubrication grooves		82
Hand taps					ST	ISO 2X 6HX	HSS-E		□		🛒	
Dies					FE	ISO 6g	HSS		□		🛒	
Dies					FE	ISO 6g	HSS		□			🛒
Dies					FE LH	ISO 6g	HSS		□	for left hand threads	🛒	
Dies					VA	ISO 6g	HSS-E		□		🛒	
G – Whitworth Pipe Thread												
Universal	●			Stabil	UNI	ISO 228	HSS-E	■			83	
Universal	●				UNI	ISO 228	HSS-E	■				84
Steel	●			Stabil	ST	ISO 228	HSS-E		□		83	
Steel	●				FE	ISO 228	HSS-E		□			🛒
Stainless steel	●			Stabil	VA	ISO 228	HSS-E	■			83	
Universal		●		Salo-Rex	UNI	ISO 228 ISO 228 +0,05	HSS-E	■			85	
Universal		●			UNI	ISO 228	HSS-E	■				87
Universal		●		Salo-Rex	UNI CNC	ISO 228	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	86	

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

G – Whitworth Pipe Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated	uncoated	Comments	WNT \ Performance	WNT \ Standard
Steel		●		Salo-Rex	ST	ISO 228	HSS-E		□		86	
		●		SL	ST	ISO 228	HSS-E		□		🛒	
Stainless steel		●		Salo-Rex	VA	ISO 228	HSS-E	■			86	
Steel			●	TWIN	ST	ISO 228X	HSS-E		□		88	
			●	TWIN	HR	ISO 228X	HSS-E	■			88	
Cast iron			●	TWIN	GG	ISO 228X	HSS-E	■			🛒	
Machine thread formers			●	Spanlos	EC	ISO 228	HSS-E	■			89	
			●	Spanlos	EC SN	ISO 228	HSS-E	■		Thread formers with lubrication grooves	89	
Hand taps					ERGO	ISO 228	HSS-E		□		🛒	
Dies					FE	ISO 228A	HSS		□		🛒	

UNC – Unified Coarse Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated	uncoated	Comments	WNT \ Performance	WNT \ Standard
Universal	●			Stabil	UNI	3B	HSS-E	■			🛒	
	●			Stabil	UNI	2B	HSS-E	■			90	
	●				UNI	2B	HSS-E	■				91
Steel	●			Stabil	ST	2B	HSS-E		□		🛒	
	●				FE	2B	HSS-E		□			91
	●				FE-HF	2B	HSS-E	■				91
Stainless steel	●			Stabil	VA	2B	HSS-E	■			90	
	●				VA	2B	HSS-E	■				91

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

UNC – Unified Coarse Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Heat-resistant				Stabil	Ti	2BX	HSS-PM	■			90	
Universal				Salo-Rex	UNI	2B	HSS-E	■			92	
				Salo-Rex	UNI	2B +0,05	HSS-E	■				
					UNI	2B	HSS-E	■				93
Steel				Salo-Rex	ST	2B	HSS-E		□			
					FE	2B	HSS-E		□			93
					FE-HF	2B	HSS-E	■				93
Stainless steel				Salo-Rex	VA	2B	HSS-E	■			92	
					VA	2B	HSS-E		□			93
Heat-resistant				SL	Ti	2BX	HSS-PM	■				
Cast iron				TWIN	GG	2BX	HSS-E	■				
Machine thread formers				Spanlos	EC	2BX	HSS-E	■			94	
				Spanlos	EC SN	2BX	HSS-E	■		Thread formers with lubrication grooves	94	
Hand taps					ERGO	2BX	HSS-E		□			
Dies					FE	2A	HSS-E		□			

EG UNC – Unified coarse thread for wire inserts

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Stabil	UNI	2B	HSS-E	■			95	
				Salo-Rex	UNI	2B	HSS-E	■			96	

This article can be found in our online shop at cuttingtools.ceratizit.com

6

Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
UNJC – Unified Coarse Thread												
Heat-resistant		●		SL	Ti	3BX	HSS-E	■			97	
UNF – Unified Fine Thread												
Universal	●			Stabil	UNI	2B	HSS-E	■			98	
	●				UNI	2B	HSS-E	■				99
Steel	●			Stabil	ST	2B	HSS-E		□		🛒	
	●				FE	2B	HSS-E		□			99
Stainless steel	●				VA	2B	HSS-E	■				99
Heat-resistant	●			Stabil	Ti	2BX	HSS-PM	■			98	
Universal		●		Salo-Rex	UNI	2B 2B +0,05	HSS-E	■			100	
		●			UNI	2B	HSS-E	■				102
Steel		●			FE	2B	HSS-E		□			102
Stainless steel		●		Salo-Rex	VA	2B	HSS-E	■			100	
		●			VA	2B	HSS-E		□			102
Heat-resistant		●		SL	Ti	2BX 3BX	HSS-PM	■			101	
Cast iron			●	TWIN	GG	2BX	HSS-E	■			🛒	
Thread formers			●	Spanlos	EC SN	2BX	HSS-E	■		Thread formers with lubrication grooves	103	
Dies			●		FE	2A	HSS		□		🛒	

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
EG UNF – Unified fine thread for wire inserts												
Universal	●			Stabil	UNI	2B	HSS-E	■			104	
		●		Salo-Rex	UNI	2B	HSS-E	■			105	
UNJF – Unified Extra Fine Thread												
Heat-resistant	●			DL	Ti	3BX	HSS-E	■			🛒	
		●		SL	Ti	3BX	HSS-E	■			🛒	
BSW – Whitworth Thread												
Universal	●			Stabil	UNI	med.	HSS-E	■			🛒	
		●		Salo-Rex	UNI	med.	HSS-E	■			🛒	
NPT – American Tapered Pipe Thread												
Stainless steel		●		Salo-Rex	VA		HSS-E	■			106	
Steel			●	TWIN	ST AZ		HSS-E		□	with intermittent teeth, reduces friction	🛒	
			●	TWIN	VG		HSS-E		□		107	
			●	TWIN	VG AZ		HSS-E		□	with intermittent teeth, reduces friction	🛒	
			●	TWIN	ST ES		HSS-E		□	extra short	108	
Dies					FE		HSS-E		□		🛒	

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
NPTF – American Tapered Pipe Thread												
Steel				TWIN	ST		HSS-E		□		🛒	
Steel				TWIN	VG		HSS-E		□		🛒	
Steel				TWIN	ST ES		HSS-E		□	extra short	🛒	
Rp – Cylindrical Whitworth Pipe Thread												
Steel				TWIN	ST	X	HSS-E		□		🛒	
Rc – Tapered Whitworth Pipe Thread												
Steel				TWIN	ST		HSS-E		□		🛒	
Tr – Metric ISO Trapezoidal Thread												
Steel					ST	7H	HSS-E		□		109	

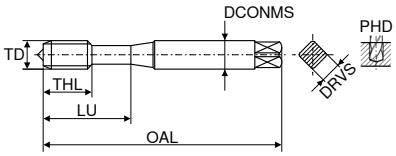
Accessories

Shank extensions for taps		🛒
Tapping Oil, Chlorine Free		🛒

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Through hole – Machine taps, right hand

M | Stabil



DIN 371 with reinforced shank

	UNI	UNI	UNI	UNI	UNI
	B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
	nitr. + vap.	TiN	TiCN	nitr. + vap.	nitr. + vap.
					
	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0	U0	U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 501 ...		Article no. 22 503 ...		Article no. 22 505 ...		Article no. 22 508 ...		Article no. 22 510 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
M1	0,25	40	2,5	2,1	0,75	5	13	2	99,83	**010** [1]								
M1,2	0,25	40	2,5	2,1	0,95	5	13	2	94,74	**012** [1]								
M1,4	0,30	40	2,5	2,1	1,10	7	13	3	85,74	**014** [1]								
M1,6	0,35	40	2,5	2,1	1,25	8	11	3	60,20	**016**								
M1,7	0,35	40	2,5	2,1	1,35	6	11	2	92,62	**017**								
M1,8	0,35	40	2,5	2,1	1,45	6	11	2	127,20	**018**								
M2	0,40	45	2,8	2,1	1,60	7	12	2			41,43	**020**			43,76	**020**	50,87	**020**
M2	0,40	45	2,8	2,1	1,60	8	8	3	43,76	**020**								
M2,2	0,45	45	2,8	2,1	1,75	7	12	2	46,63	**022**								
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	43,02	**025**					43,02	**025**	49,81	**025**
M3	0,50	56	3,5	2,7	2,50	11	18	3	32,22	**030**	34,98	**030**	34,98	**030**	34,98	**030**	40,27	**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	35,39	**035**					35,61	**035**		
M4	0,70	63	4,5	3,4	3,30	13	21	3	29,24	**040**	36,45	**040**	36,45	**040**	35,39	**040**	40,49	**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	29,99	**050**	36,98	**050**	36,98	**050**	35,61	**050**	41,43	**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	30,42	**060**	41,76	**060**	41,76	**060**	36,45	**060**	42,49	**060**
M7	1,00	80	7,0	5,5	6,00	17	30	3	42,49	**070**								
M8	1,25	90	8,0	6,2	6,80	20	35	3	34,44	**080**	46,84	**080**	46,84	**080**	41,23	**080**	46,63	**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	41,33	**100**	65,28	**100**	65,28	**100**	49,81	**100**	56,91	**100**
M12	1,75	110	12,0	9,0	10,20	24	44	3	60,83	**120**								

Steel	**6-20**	**6-25**	**6-25**	**6-20**	**6-20**
Stainless steel	**4-8**	**5-10**	**5-10**	**4-8**	**4-8**
Cast iron	**6-15**	**10-20**	**10-20**	**6-15**	**6-15**
Non ferrous metals		**12-25**	**12-25**		
Heat resistant alloys					
Hardened materials					

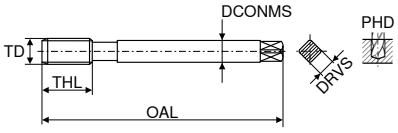
1) Tol. ISO 1 4H ≤ M1.4

DIN 376 can be found on the next page

6

Through hole – Machine taps, right hand

M | Stabil



DIN 376 with reduced shank

UNI	UNI	UNI	UNI
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
nitr. + vap.	TiN	nitr. + vap.	nitr. + vap.



HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 502 ...		Article no. 22 504 ...		Article no. 22 509 ...		Article no. 22 511 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
M3	0,50	56	2,2		2,5	11	3	59,66	**030**						
M4	0,70	63	2,8	2,1	3,3	13	3	39,74	**040**						
M5	0,80	70	3,5	2,7	4,2	15	3	37,94	**050**						
M6	1,00	80	4,5	3,4	5,0	17	3	37,20	**060**						
M8	1,25	90	6,0	4,9	6,8	20	3	40,80	**080**						
M10	1,50	100	7,0	5,5	8,5	22	3	47,27	**100**						
M12	1,75	110	9,0	7,0	10,2	24	3	46,21	**120**	75,14	**120**	57,23	**120**	64,65	**120**
M14	2,00	110	11,0	9,0	12,0	26	3	66,66	**140**	111,30	**140**			95,91	**140**
M16	2,00	110	12,0	9,0	14,0	27	3	67,40	**160**	96,75	**160**	84,04	**160**	97,93	**160**
M18	2,50	125	14,0	11,0	15,5	30	3	132,50	**180**	174,80	**180**				
M20	2,50	140	16,0	12,0	17,5	32	3	103,10	**200**	180,10	**200**	128,20	**200**		
M22	2,50	140	18,0	14,5	19,5	32	3	165,40	**220**	267,10	**220**				
M24	3,00	160	18,0	14,5	21,0	34	3	134,60	**240**	227,90	**240**				
M27	3,00	160	20,0	16,0	24,0	36	3	187,60	**270**						
M30	3,50	180	22,0	18,0	26,5	40	4	220,50	**300**						
M33	3,50	180	25,0	20,0	29,5	40	4	508,70	**330**						
M36	4,00	200	28,0	22,0	32,0	50	4	606,20	**360**						
M42	4,50	200	32,0	24,0	37,5	56	4	1.154,00	**420**						
M48	5,00	250	36,0	29,0	43,0	65	4	1.165,00	**480**						

Steel	**6-20**	**6-25**	**6-20**	**6-20**
Stainless steel	**4-8**	**5-10**	**4-8**	**4-8**
Cast iron	**6-15**	**10-20**	**6-15**	**6-15**
Non ferrous metals		**12-25**		
Heat resistant alloys				
Hardened materials				

Through hole – Machine taps, right hand

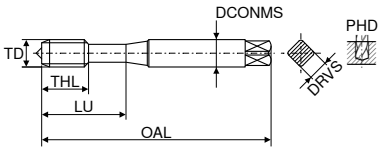
▲ CNC = for synchronised CNC machining with minimum length compensation chuck

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

M	Stabil

UNI NCW	UNI CNC	UNI CNC	UNI CNC
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2X 6HX	ISO 3X 6GX	7GX
TiN	TiN GS	TiN GS	TiN GS

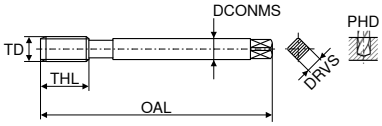




DIN 371 with reinforced shank

	HSS-PM	HSS-E	HSS-E	HSS-E
	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0	U0
TD	Article no. 22 148 ...	Article no. 22 542 ...	Article no. 22 596 ...	Article no. 22 592 ...
	EUR	EUR	EUR	EUR
M3	50,02 030			
M3		37,94 030		
M4	52,03 040			
M4		40,27 040	48,54 040	48,54 040
M5	52,56 050	40,80 050	50,02 050	50,02 050
M6	66,13 060	51,82 060	54,79 060	61,15 060
M8	73,86 080			
M8		57,23 080	59,24 080	66,77 080
M10	90,72 100			
M10		71,22 100	73,86 100	80,23 100
M12	110,20 120			
M16	153,70 160			

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	70	6,0	4,9	2,5	6	18	3
M3	0,50	56	3,5	2,7	2,5	6	18	3
M4	0,70	70	6,0	4,9	3,3	7	21	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M8	1,25	90	8,0	6,2	6,8	14	35	4
M10	1,50	100	10,0	8,0	8,5	16	39	3
M10	1,50	100	10,0	8,0	8,5	16	39	4
M12	1,75	110	10,0	8,0	10,2	18		3
M16	2,00	110	12,0	9,0	14,0	22		3



DIN 376 with reduced shank

	U0	U0	U0
TD	Article no. 22 543 ...	Article no. 22 597 ...	Article no. 22 593 ...
	EUR	EUR	EUR
M12	82,88 120	90,19 120	97,18 120
M14	233,20 140		
M16	118,70 160		
M20	201,30 200		

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	4
M14	2,00	110	11	9	12,0	20	4
M16	2,00	110	12	9	14,0	22	4
M20	2,50	140	16	12	17,5	25	4

Steel	6-25	6-25	6-25	6-25
Stainless steel	5-10	5-10	5-10	5-10
Cast iron	10-20	10-20	10-20	10-20
Non ferrous metals	12-25	12-25	12-25	12-25
Heat resistant alloys				
Hardened materials				

6

Through hole – Machine taps, right/left hand

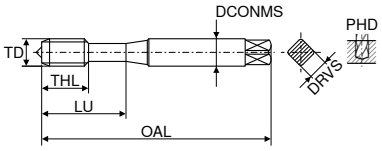
▲ AZ = with intermittent teeth, reduces friction

▲ LH = for left hand threads

M	Stabil

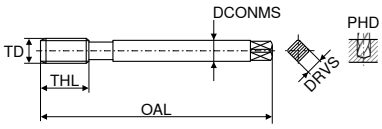
ST	ST AZ	ST LH
B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 2 6H





DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-E
	0° ≤ 750 N/mm² ≤ 4xD	0° ≤ 750 N/mm² ≤ 4xD	0° ≤ 750 N/mm² ≤ 4xD
	U0	U0	U0
TD	Article no. 22 020 ...	Article no. 22 022 ...	Article no. 22 127 ...
TP / mm	EUR	EUR	EUR
OAL / mm			
DCONMS / mm			
DRVS / mm			
PHD / mm			
THL / mm			
LU / mm			
Flutes			
M2 0,40 45 2,8 2,1 1,60 7 12 2	28,61 020	40,80 020	
M2,3 0,40 45 2,8 2,1 1,90 7 12 2	31,47 023		
M2,5 0,45 50 2,8 2,1 2,05 9 14 2	28,61 025		
M2,6 0,45 50 2,8 2,1 2,15 9 14 2	31,47 026		
M3 0,50 56 3,5 2,7 2,50 11 18 3	23,21 030	38,57 030	36,98 030
M3,5 0,60 56 4,0 3,0 2,90 12 20 3	24,79 035		
M4 0,70 63 4,5 3,4 3,30 13 21 3	23,52 040	38,57 040	38,57 040
M5 0,80 70 6,0 4,9 4,20 15 25 3	24,79 050	35,61 050	39,74 050
M6 1,00 80 6,0 4,9 5,00 17 30 3	24,79 060	36,45 060	39,74 060
M8 1,25 90 8,0 6,2 6,80 20 35 3	29,78 080	40,27 080	44,72 080
M10 1,50 100 10,0 8,0 8,50 22 39 3	35,71 100	48,74 100	56,91 100
M12 1,75 110 12,0 9,0 10,20 24 44 3	40,49 120		



DIN 376 with reduced shank

								U0		U0		U0			
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 021 ...		Article no. 22 023 ...		Article no. 22 147 ...			
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR			
M3	0,50	56	2,2		2,5	11	3	28,83	030						
M4	0,70	63	2,8	2,1	3,3	13	3	28,61	040						
M5	0,80	70	3,5	2,7	4,2	15	3	29,36	050						
M6	1,00	80	4,5	3,4	5,0	17	3	30,10	060						
M8	1,25	90	6,0	4,9	6,8	20	3	32,00	080						
M10	1,50	100	7,0	5,5	8,5	22	3	36,45	100						
M12	1,75	110	9,0	7,0	10,2	24	3	44,29	120	67,51	120	68,04	120		
M14	2,00	110	11,0	9,0	12,0	26	3	60,20	140						
M16	2,00	110	12,0	9,0	14,0	27	3	62,95	160	101,70	160	103,80	160		
M18	2,50	125	14,0	11,0	15,5	30	3	92,62	180						
M20	2,50	140	16,0	12,0	17,5	32	3	93,89	200	146,20	200	152,60	200		
M22	2,50	140	18,0	14,5	19,5	32	3	145,20	220						
M24	3,00	160	18,0	14,5	21,0	34	3	124,00	240						
M27	3,00	160	20,0	16,0	24,0	36	3	169,50	270						
M30	3,50	180	22,0	18,0	26,5	40	4	201,30	300						

Steel	10-20	10-20	10-20
Stainless steel			
Cast iron			
Non ferrous metals	10-20	10-20	10-20
Heat resistant alloys			
Hardened materials			

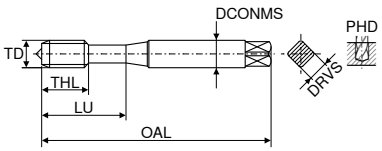
Through hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.

M	Stabil

ST TS	HR	HR	VG
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
TiN	nitr.	TiN	TiN

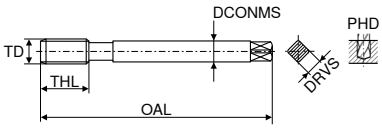




DIN 371 with reinforced shank

	HSS-E	HSS-PM	HSS-PM	HSS-E
	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1400 N/mm² ≤ 4xD	0° ≤ 1400 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0	U0
TD	Article no. 22 092 ...	Article no. 22 053 ...	Article no. 22 055 ...	Article no. 22 120 ...
mm	EUR	EUR	EUR	EUR
M2		64,32 020		
M2	49,17 020			43,02 020
M2,2		64,32 022		
M2,5		63,06 025		
M2,5	49,17 025			43,02 025
M3		33,06 030	43,02 030	
M3	38,57 030			31,69 030
M3,5		51,50 035		
M4		33,81 040	61,46 040	
M4	42,07 040			34,02 040
M5		35,92 050	45,68 050	
M5	45,99 050			36,24 050
M6		35,92 060	52,03 060	
M6	55,95 060			44,09 060
M8		42,49 080	57,23 080	
M8	70,58 080			46,63 080
M10		52,03 100	81,07 100	
M10	76,51 100			66,77 100
M12		86,27 120		

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M2	0,40	45	2,8	2,1	1,60	8	9,5	2
M2	0,40	45	2,8	2,1	1,60	4	12,0	2
M2,2	0,45	45	2,8	2,1	1,75	7	12,0	2
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	2
M2,5	0,45	50	2,8	2,1	2,05	5	15,0	2
M3	0,50	56	3,5	2,7	2,50	11	18,0	2
M3	0,50	56	3,5	2,7	2,50	6	18,0	3
M3,5	0,60	56	4,0	3,0	2,90	12	20,0	2
M4	0,70	63	4,5	3,4	3,30	13	21,0	2
M4	0,70	63	4,5	3,4	3,30	7	21,0	3
M5	0,80	70	6,0	4,9	4,20	15	25,0	2
M5	0,80	70	6,0	4,9	4,20	8	25,0	3
M6	1,00	80	6,0	4,9	5,00	17	30,0	3
M6	1,00	80	6,0	4,9	5,00	10	30,0	3
M8	1,25	90	8,0	6,2	6,80	20	35,0	3
M8	1,25	90	8,0	6,2	6,80	14	35,0	4
M10	1,50	100	10,0	8,0	8,50	22	39,0	3
M10	1,50	100	10,0	8,0	8,50	16	39,0	4
M12	1,75	110	12,0	9,0	10,20	24	44,0	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	4
M16	2,00	110	12	9	14,0	22	4
M20	2,50	140	16	12	17,5	25	4

	U0 Article no. 22 093 ... EUR		U0 Article no. 22 121 ... EUR	
M12	102,90	120	79,06	120
M16	133,50	160	110,20	160
M20	199,30	200	185,40	200

Steel	20-100	2-6	2-6	6-15
Stainless steel				5-10
Cast iron	20-60			
Non ferrous metals	20-100			10-20
Heat resistant alloys	10-25	3-5	3-5	
Hardened materials				

6

Through hole – Machine taps, right hand

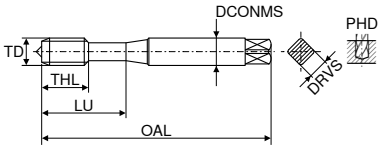
M | Stabil

VA | VA | NW | NW

B 4–5 | B 4–5 | B 4–5 | B 4–5

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

nitr. | TiN GS | vap. | HCr



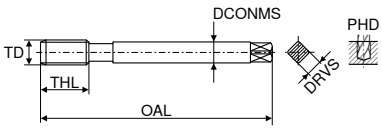
DIN 371 with reinforced shank

HSS-E | HSS-E | HSS-E | HSS-E

0° | 0° | 0° | 0°

≤ 900 N/mm² ≤ 4xD | ≤ 900 N/mm² ≤ 4xD | ≤ 500 N/mm² ≤ 4xD | ≤ 500 N/mm² ≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 056 ...	EUR	U0 Article no. 22 038 ...	EUR	U0 Article no. 22 058 ...	EUR	U0 Article no. 22 060 ...	EUR
	mm	mm	mm	mm	mm	mm	mm									
M1,6	0,35	40	2,5	2,1	1,25	6	11	2			56,91	016				
M2	0,40	45	2,8	2,1	1,60	7	12	2	32,43	020	46,63	020	31,47	020	38,57	020
M2,3	0,40	45	2,8	2,1	1,90	7	12	2					36,24	023	40,80	023
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	32,00	025	45,25	025	31,47	025	38,57	025
M2,6	0,45	50	2,8	2,1	2,15	9	14	2					35,92	026	40,80	026
M3	0,50	56	3,5	2,7	2,50	11	18	3	25,97	030	38,79	030	25,01	030	31,69	030
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	29,14	035			25,97	035	33,81	035
M4	0,70	63	4,5	3,4	3,30	13	21	3	27,24	040	40,80	040	25,01	040	32,43	040
M5	0,80	70	6,0	4,9	4,20	15	25	3	28,19	050	42,07	050	25,97	050	33,06	050
M6	1,00	80	6,0	4,9	5,00	17	30	3	29,36	060	52,35	060	25,97	060	33,06	060
M8	1,25	90	8,0	6,2	6,80	20	35	3	32,65	080	57,97	080	30,94	080	38,79	080
M10	1,50	100	10,0	8,0	8,50	22	39	3	40,27	100	71,96	100	36,98	100	48,74	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 057 ...	EUR	U0 Article no. 22 039 ...	EUR	U0 Article no. 22 059 ...	EUR	U0 Article no. 22 061 ...	EUR
	mm	mm	mm	mm	mm	mm									
M12	1,75	110	9	7,0	10,2	24	3	51,19	120	85,74	120	46,63	120	58,50	120
M14	2,00	110	11	9,0	12,0	26	3	70,58	140	122,90	140				
M16	2,00	110	12	9,0	14,0	27	3	73,12	160	120,90	160	66,13	160	72,59	160
M18	2,50	125	14	11,0	15,5	30	3	140,90	180						
M20	2,50	140	16	12,0	17,5	32	3	105,00	200	203,50	200				
M22	2,50	140	18	14,5	19,5	32	3	222,60	220						
M24	3,00	160	18	14,5	21,0	34	3	143,10	240						
M27	3,00	160	20	16,0	24,0	36	3	240,60	270						
M30	3,50	180	22	18,0	26,5	40	4	231,00	300						

Steel		5-12		
Stainless steel	5-10	5-10		
Cast iron				
Non ferrous metals			10-20	12-25
Heat resistant alloys				
Hardened materials				

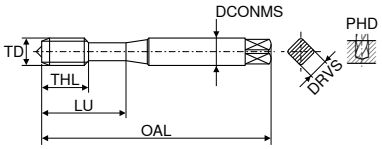
Through hole – Machine taps, right hand

M | Stabil

Ti | B 4–5 | ISO 1X 4HX | TiN

Ti | B 4–5 | ISO 2X 6HX | vap.

Ti | B 4–5 | ISO 2X 6HX | TiN









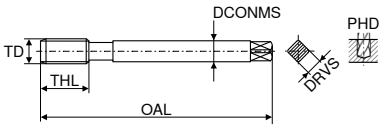
DIN 371 with reinforced shank

HSS-PM | 0° | ≤ 44 HRC | ≤ 4xD

HSS-PM | 0° | ≤ 1400 N/mm² | ≤ 4xD

HSS-PM | 0° | ≤ 44 HRC | ≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 081 ... EUR		U0 Article no. 22 075 ... EUR		U0 Article no. 22 077 ... EUR	
	mm	mm	mm	mm	mm	mm	mm							
M1	0,25	40	2,5	2,1	0,75	5	6,5	2	122,90	**010**				
M1,6	0,35	40	2,5	2,1	1,25	8	9,5	3			105,00	**016**		
M2	0,40	45	2,8	2,1	1,60	8	9,5	3	75,67	**020**	84,04	**020**		
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	3			82,35	**025**		
M3	0,50	56	3,5	2,7	2,50	11	18,0	3	52,03	**030**	57,65	**030**	55,11	**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20,0	3			65,92	**035**		
M4	0,70	63	4,5	3,4	3,30	13	21,0	3	53,52	**040**	60,51	**040**	57,23	**040**
M5	0,80	70	6,0	4,9	4,20	15	25,0	3	55,11	**050**	60,51	**050**	57,65	**050**
M6	1,00	80	6,0	4,9	5,00	17	30,0	3	61,46	**060**	62,21	**060**	59,03	**060**
M8	1,25	90	8,0	6,2	6,80	20	35,0	3	73,86	**080**	71,22	**080**	68,04	**080**
M10	1,50	100	10,0	8,0	8,50	22	39,0	3			82,88	**100**	81,70	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 140 ... EUR		U0 Article no. 22 142 ... EUR	
	mm	mm	mm	mm	mm	mm					
M12	1,75	110	9	7	10,2	24	3	100,40	**120**	89,44	**120**

Steel	**2-5**	**2-5**	**2-5**
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys	**2-6**	**2-6**	**2-6**
Hardened materials			

6

Through hole – Machine taps, right hand

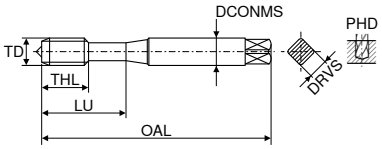
M | DL

Ti | Ni

D 4–5 | D 4–5

ISO 2X 6HX | ISO 2X 6HX

TiCN | TiCN





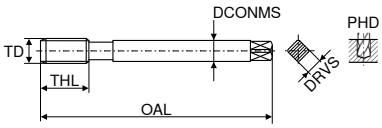


DIN 371 with reinforced shank

HSS-E
◁ 15°
≤ 1200 N/mm²
≤ 4xD

HSS-E
◁ 15°
≤ 1600 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 159 ...		U0 Article no. 22 297 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M3	0,50	56	3,5	2,7	2,5	11	18	2	46,10	**030**	55,11	**030**
M4	0,70	63	4,5	3,4	3,3	13	21	3	50,44	**040**	57,54	**040**
M5	0,80	70	6,0	4,9	4,2	15	25	3	50,76	**050**	58,93	**050**
M6	1,00	80	6,0	4,9	5,0	17	30	3	67,83	**060**	74,51	**060**
M8	1,25	90	8,0	6,2	6,8	20	35	3	74,51	**080**	82,66	**080**
M10	1,50	100	10,0	8,0	8,5	22	39	3	91,67	**100**	103,50	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 160 ...		U0 Article no. 22 298 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
M12	1,75	110	9	7,0	10,2	24	3	105,80	**120**	119,80	**120**
M14	2,00	110	11	9,0	12,0	26	3			179,10	**140**
M16	2,00	110	12	9,0	14,0	27	3	149,50	**160**	167,40	**160**
M20	2,50	140	16	12,0	17,5	32	3	258,50	**200**	286,10	**200**
M24	3,00	160	18	14,5	21,0	34	3	303,10	**240**		

Steel	**6-8**	
Stainless steel	**4-10**	
Cast iron		
Non ferrous metals	**10-12**	
Heat resistant alloys	**4-6**	**2-20**
Hardened materials		

Through hole – Machine taps, right hand

▲ EL = extra long, with double overall length

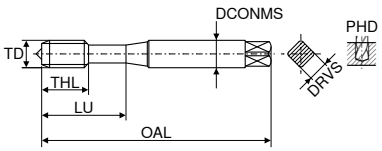
M | Stabil

UNI EL | ST EL

B 4–5

ISO 2 6H | ISO 2 6H

nitr. + vap.





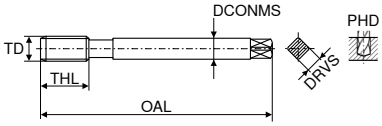


DIN 371 with reinforced shank

HSS-E
∢ 0°
≤ 1100 N/mm²
≤ 4xD

HSS-E
∢ 0°
≤ 950 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 514 ...		U0 Article no. 22 233 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M3	0,50	100	3,5	2,7	2,5	11	18	3	61,46	030	59,99	030
M4	0,70	125	4,5	3,4	3,3	13	21	3	61,46	040	57,54	040
M5	0,80	140	6,0	4,9	4,2	15	25	3	68,04	050	62,85	050
M6	1,00	160	6,0	4,9	5,0	17	30	3	75,04	060	65,60	060
M8	1,25	180	8,0	6,2	6,8	20	35	3	80,23	080	78,21	080



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 515 ...		U0 Article no. 22 234 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
M6	1,00	160	4,5	3,4	5,0	17	3	62,52	060	65,60	060
M8	1,25	180	6,0	4,9	6,8	20	3	77,26	080	78,21	080
M10	1,50	200	7,0	5,5	8,5	22	3	84,78	100	87,11	100
M12	1,75	224	9,0	7,0	10,2	24	3	105,00	120	105,00	120
M14	2,00	224	11,0	9,0	12,0	26	3	159,00	140	169,50	140
M16	2,00	224	12,0	9,0	14,0	27	3	203,50	160	163,20	160
M18	2,50	250	14,0	11,0	15,5	30	3	242,70	180	245,90	180
M20	2,50	280	16,0	12,0	17,5	32	3	213,00	200	221,50	200

Steel	6-20	5-25
Stainless steel	4-8	
Cast iron	6-15	10-20
Non ferrous metals		10-40
Heat resistant alloys		
Hardened materials		

6

Through hole – Machine taps, right hand

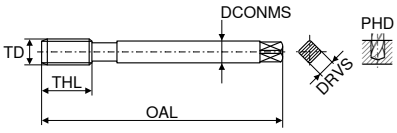
▲ MMB = Nut taps

M

ST
MMB

≈ 20

ISO 2
6H





DIN 357 with reduced shank

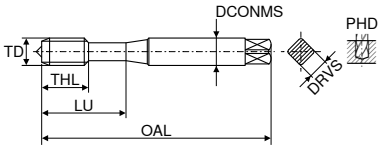
HSS-E
0°
≤ 850 N/mm²
≤ 1xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 098 ...	EUR	
	mm	mm	mm	mm	mm	mm				
M3	0,50	70	2,2		2,5	16	3		45,25	**030**
M4	0,70	90	2,8	2,1	3,3	22	3		45,25	**040**
M5	0,80	100	3,5	2,7	4,2	24	3		47,37	**050**
M6	1,00	110	4,5	3,4	5,0	30	3		47,37	**060**
M8	1,25	125	6,0	4,9	6,8	38	3		58,50	**080**
M10	1,50	140	7,0	5,5	8,5	45	3		66,77	**100**
M12	1,75	180	9,0	7,0	10,2	50	3		89,44	**120**
M16	2,00	200	12,0	9,0	14,0	63	3		127,20	**160**

Steel	**10-25**
Stainless steel	
Cast iron	
Non ferrous metals	**10-25**
Heat resistant alloys	
Hardened materials	

Through hole – Machine taps, right hand

M



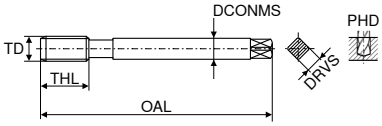
DIN 371 with reinforced shank

UNI	UNI	UNI
B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 2 6H
nitr. + vap.	TiN	TiN



	HSS-E	HSS-E	HSS-PM
	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD
	T9	T9	T9
TD	Article no. 23 110 ...	Article no. 23 112 ...	Article no. 23 010 ...
	EUR	EUR	EUR

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes					
	mm	mm	mm	mm	mm	mm	mm						
M2	0,40	45	2,8	2,1	1,60	7	12,0	2	12,13	**020**	14,27	**020**	
M2	0,40	45	2,8	2,1	1,60	4	13,5	2					9,88 **020**
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	2	11,92	**025**	15,90	**025**	
M3	0,50	56	3,5	2,7	2,50	11	18,0	3	8,08	**030**	10,29	**030**	12,33 **030**
M4	0,70	63	4,5	3,4	3,30	13	21,0	3	8,24	**040**	11,21	**040**	11,31 **040**
M5	0,80	70	6,0	4,9	4,20	15	25,0	3	8,24	**050**	11,31	**050**	12,64 **050**
M6	1,00	80	6,0	4,9	5,00	17	30,0	3	8,39	**060**	14,37	**060**	15,08 **060**
M8	1,25	90	8,0	6,2	6,80	20	35,0	3	9,72	**080**	15,59	**080**	16,81 **080**
M10	1,50	100	10,0	8,0	8,50	22	39,0	3	11,62	**100**	19,26	**100**	22,21 **100**



DIN 376 with reduced shank

								T9		T9		T9	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 23 111 ...		Article no. 23 113 ...		Article no. 23 021 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
M3	0,50	56	2,2		2,5	11	3	8,75	**030**				
M4	0,70	63	2,8	2,1	3,3	13	3	8,61	**040**				
M5	0,80	70	3,5	2,7	4,2	15	3	8,61	**050**				
M6	1,00	80	4,5	3,4	5,0	17	3	9,04	**060**				
M8	1,25	90	6,0	4,9	6,8	20	3	10,60	**080**				
M10	1,50	100	7,0	5,5	8,5	22	3	12,23	**100**				
M12	1,75	110	9,0	7,0	10,2	24	3	14,67	**120**	22,83	**120**	26,49	**120**
M14	2,00	110	11,0	9,0	12,0	26	3	21,20	**140**	39,72	**14000**		
M14	2,00	110	11,0	9,0	12,0	20	4					40,15	**140**
M16	2,00	110	12,0	9,0	14,0	27	3	21,70	**160**	32,30	**160**	37,30	**160**
M18	2,50	125	14,0	11,0	15,5	30	3			63,02	**18000**		
M18	2,50	125	14,0	11,0	15,5	25	4					65,32	**180**
M20	2,50	140	16,0	12,0	17,5	32	3	34,54	**200**	55,54	**200**	67,46	**200**
M22	2,50	140	18,0	14,5	19,5	32	3			93,33	**22000**		
M24	3,00	160	18,0	14,5	21,0	34	3			83,66	**240**		
M27	3,00	160	20,0	16,0	24,0	36	3			116,70	**27000**		
M30	3,50	180	22,0	18,0	26,5	40	4			130,90	**30000**		
M33	3,50	180	25,0	20,0	29,5	40	4			171,70	**33000**		
M36	4,00	200	28,0	22,0	32,0	50	4			210,30	**36000**		

Steel	**2-25**	**5-45**	**10-20**
Stainless steel	**2-8**	**5-15**	**8-15**
Cast iron	**5-20**	**10-25**	**20-25**
Non ferrous metals	**10-20**	**15-40**	**20-25**
Heat resistant alloys			
hardened materials			

6

Through hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

▲ NC = for synchronised CNC machining with minimum length compensation chuck

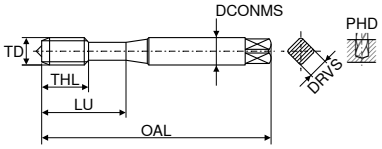
M

UNI NC | UNI NCW | FE | FE-HF

B 4–5

ISO 2 6H

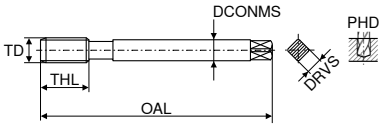
TiN GS | TiCN | | TiCN





DIN 371 with reinforced shank

	HSS-E	HSS-PM	HSS-E	HSS-E
	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 1100 N/mm² ≤ 3xD
	T9	T9	T9	T9
TD	Article no. 23 114 ... EUR	Article no. 23 116 ... EUR	Article no. 23 212 ... EUR	Article no. 23 310 ... EUR
TP mm / OAL mm / DCONMS mm / DRVS mm / PHD mm / THL mm / LU mm / Flutes				
M1,6 0,35 40 2,5 2,1 1,25 6 11 2			25,17 016	
M2 0,40 45 2,8 2,1 1,60 7 12 2			17,02 020	
M2,5 0,45 50 2,8 2,1 2,05 9 14 2			14,27 025	
M3 0,50 70 6,0 4,9 2,50 6 18 3		20,89 030		
M3 0,50 56 3,5 2,7 2,50 11 18 3	17,42 030		11,31 030	16,51 030
M3,5 0,60 56 4,0 3,0 2,90 12 20 3			12,74 035	
M4 0,70 70 6,0 4,9 3,30 7 21 3		23,84 040		
M4 0,70 63 4,5 3,4 3,30 13 21 3	18,95 040		11,31 040	17,53 040
M5 0,80 70 6,0 4,9 4,20 15 25 3	19,06 050		11,72 050	17,73 050
M5 0,80 70 6,0 4,9 4,20 8 25 3		24,25 050		
M6 1,00 80 6,0 4,9 5,00 17 30 3	27,92 060		11,72 060	24,25 060
M6 1,00 80 6,0 4,9 5,00 10 30 3		24,25 060		
M8 1,25 90 8,0 6,2 6,80 20 35 3	29,55 080		15,18 080	26,19 080
M8 1,25 90 8,0 6,2 6,80 14 35 3		30,67 080		
M10 1,50 100 10,0 8,0 8,50 22 39 3	37,19 100		18,14 100	32,91 100
M10 1,50 100 10,0 8,0 8,50 16 39 3		36,99 100		



DIN 376 with reduced shank

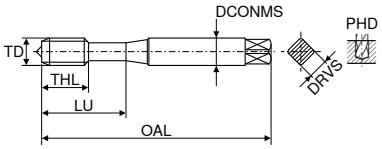
TD	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	T9 Article no. 23 115 ... EUR	T9 Article no. 23 117 ... EUR	T9 Article no. 23 213 ... EUR	T9 Article no. 23 311 ... EUR
M12	1,75	110	10	8	10,2	18	3		46,26 120		
M12	1,75	110	9	7	10,2	24	3	42,90 120		24,46 120	38,11 120
M14	2,00	110	11	9	12,0	26	3			29,45 140	
M16	2,00	110	12	9	14,0	22	3		62,26 160		
M16	2,00	110	12	9	14,0	27	3	58,18 160		37,09 160	52,89 160
M20	2,50	140	16	12	17,5	32	3	106,00 200		57,98 200	93,44 200

Steel	5-45	5-45	5-25	5-45
Stainless steel	5-15	5-15		
Cast iron	10-25	10-25		
Non ferrous metals	15-40	15-40		
Heat resistant alloys		5-8		
hardened materials				

Through hole – Machine taps, right hand

M

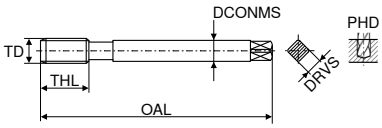
VA	VA	VA	AL	AL
B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
nitr.	nitr.	TiN		CrN



DIN 371 with reinforced shank



	HSS-PM	HSS-E	HSS-E	HSS-E	HSS-E
	◁ 0° ≤ 1200 N/mm² ≤ 3xD	◁ 0° ≤ 1200 N/mm² ≤ 3xD	◁ 0° ≤ 1200 N/mm² ≤ 3xD	◁ 0° ≤ 500 N/mm² ≤ 3xD	◁ 0° ≤ 500 N/mm² ≤ 3xD
	T9	T9	T9	T9	T9
TD	Article no. 23 450 ...	Article no. 23 410 ...	Article no. 23 412 ...	Article no. 23 610 ...	Article no. 23 612 ...
	EUR	EUR	EUR	EUR	EUR
M2	0,40	45	2,8	2,1	1,60	7	12	2			12,53 020	23,03 020				
M2,5	0,45	50	2,8	2,1	2,05	9	14	2			14,47 025	19,36 025				
M3	0,50	56	3,5	2,7	2,50	11	18	3	11,51 030		8,24 030	15,29 030	11,31 030		12,84 030	
M4	0,70	63	4,5	3,4	3,30	13	21	3	11,62 040		8,24 040	17,02 040	11,31 040		13,25 040	
M5	0,80	70	6,0	4,9	4,20	15	25	3	12,53 050		8,58 050	17,42 050	11,72 050		13,65 050	
M6	1,00	80	6,0	4,9	5,00	17	30	3	12,74 060		8,58 060	22,83 060	11,72 060		13,65 060	
M8	1,25	90	8,0	6,2	6,80	20	35	3	14,27 080		11,01 080	24,35 080	15,18 080		15,59 080	
M10	1,50	100	10,0	8,0	8,50	22	39	3	16,20 100		13,35 100	33,53 100	18,14 100		19,16 100	



DIN 376 with reduced shank

	T9	T9	T9	T9	T9
TD	Article no. 23 451 ...	Article no. 23 411 ...	Article no. 23 413 ...	Article no. 23 611 ...	Article no. 23 613 ...
	EUR	EUR	EUR	EUR	EUR
M12	1,75	110	9	7,0	10,2	24	3	28,84 120	17,73 120	36,99 120	24,46 120	24,05 120
M14	2,00	110	11	9,0	12,0	26	3	38,21 140				
M16	2,00	110	12	9,0	14,0	27	3	40,45 160	27,31 160	46,16 160		
M20	2,50	140	16	12,0	17,5	32	3	60,43 200	41,78 200	80,70 200		
M24	3,00	160	18	14,5	21,0	34	3		55,23 240			

Steel					
Stainless steel	5-10	3-10	8-20		
Cast iron					
Non ferrous metals				10-20	15-40
Heat resistant alloys					
hardened materials					

6

Through hole – Machine taps, right hand

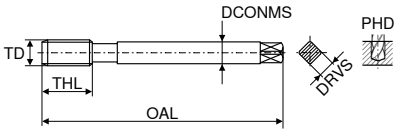
▲ ES = extra short

M

FE
ES

B
4–5

ISO 2
6H





DIN 376 with reduced shank

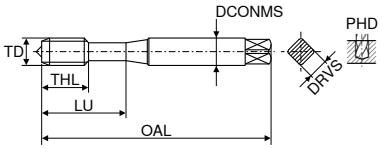
HSS-E
0°
≤ 850 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 210 ...	
	mm	mm	mm	mm	mm	mm		EUR	
M2	0,40	36	2,8	2,1	1,60	8	2	13,25	**020**
M2,5	0,45	40	2,8	2,1	2,05	9	2	10,29	**025**
M3	0,50	40	3,5	2,7	2,50	10	3	7,36	**030**
M4	0,70	45	4,5	3,4	3,30	12	3	7,36	**040**
M5	0,80	50	6,0	4,9	4,20	14	3	7,88	**050**
M6	1,00	56	6,0	4,9	5,00	16	3	7,94	**060**
M8	1,25	63	6,0	4,9	6,80	20	3	10,29	**080**
M10	1,50	70	7,0	5,5	8,50	22	3	13,55	**100**
M12	1,75	75	9,0	7,0	10,20	24	3	17,53	**120**
M16	2,00	80	12,0	9,0	14,00	27	3	30,57	**160**

Steel	**5-25**
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	

Blind hole – Machine taps, right hand

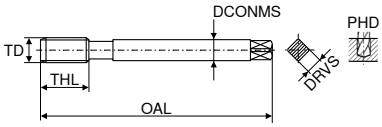
M | Salo-Rex



DIN 371 with reinforced shank

	UNI	UNI	UNI	UNI
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2 6H	7G	ISO 2 6H	ISO 2 6H
	vap.	vap.	TiN	TiCN
				
	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD
	U0	U0	U0	U0
	Article no. 22 518 ...	Article no. 22 532 ...	Article no. 22 520 ...	Article no. 22 522 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm	mm									
M2	0,40	45	2,8	2,1	1,60	4,0	12	2	33,81	020			48,54	020		
M2,2	0,45	45	2,8	2,1	1,75	4,5	12	2	38,26	022						
M2,3	0,40	45	2,8	2,1	1,90	4,5	12	2	40,49	023						
M2,5	0,45	50	2,8	2,1	2,05	5,0	15	2	32,43	025						
M2,6	0,45	50	2,8	2,1	2,15	5,0	15	2	38,57	026						
M3	0,50	56	3,5	2,7	2,50	6,0	18	3	28,83	030	33,81	030	36,45	030	36,45	030
M3,5	0,60	56	4,0	3,0	2,90	7,0	20	3	31,16	035						
M4	0,70	63	4,5	3,4	3,30	7,0	21	3	30,42	040	33,81	040	39,00	040	39,00	040
M5	0,80	70	6,0	4,9	4,20	8,0	25	3	30,73	050	36,24	050	39,31	050	39,31	050
M6	1,00	80	6,0	4,9	5,00	10,0	30	3	31,69	060	48,54	060	46,31	060	46,31	060
M7	1,00	80	7,0	5,5	6,00	10,0	30	3	46,63	070						
M8	1,25	90	8,0	6,2	6,80	14,0	35	3	37,30	080	56,70	080	51,08	080	51,50	080
M10	1,50	100	10,0	8,0	8,50	16,0	39	3	44,72	100	84,04	100	60,83	100	60,83	100
M12	1,75	110	12,0	9,0	10,20	18,0	44	3	49,17	120			74,51	120	77,47	120



DIN 376 with reduced shank

	U0	U0	U0	U0
	Article no. 22 519 ...	Article no. 22 533 ...	Article no. 22 521 ...	Article no. 22 523 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm									
M3	0,50	56	2,2		2,5	6	3	50,34	030						
M4	0,70	63	2,8	2,1	3,3	7	3	47,58	040						
M5	0,80	70	3,5	2,7	4,2	8	3	33,81	050						
M6	1,00	80	4,5	3,4	5,0	10	3	35,61	060						
M8	1,25	90	6,0	4,9	6,8	14	3	39,74	080						
M10	1,50	100	7,0	5,5	8,5	16	3	50,02	100						
M12	1,75	110	9,0	7,0	10,2	18	3	52,46	120	63,26	120	73,33	120	80,65	120
M14	2,00	110	11,0	9,0	12,0	20	3	70,47	140			117,60	140	132,50	140
M16	2,00	110	12,0	9,0	14,0	22	3	75,04	160	98,56	160	106,00	160	107,00	160
M18	2,50	125	14,0	11,0	15,5	25	3	114,50	180			184,40	180	200,30	180
M20	2,50	140	16,0	12,0	17,5	25	3	114,50	200	152,60	200	181,30	200	191,80	200
M22	2,50	140	18,0	14,5	19,5	27	4	159,00	220			267,10	220		
M24	3,00	160	18,0	14,5	21,0	30	4	143,10	240			233,20	240		
M27	3,00	160	20,0	16,0	24,0	30	4	188,70	270						
M30	3,50	180	22,0	18,0	26,5	35	4	242,70	300						
M33	3,50	180	25,0	20,0	29,5	35	4	465,20	330						
M36	4,00	200	28,0	22,0	32,0	40	4	385,70	360						

Steel	6-20	6-20	6-25	6-25
Stainless steel	4-8	4-8	5-10	5-10
Cast iron	6-15	6-15	10-20	10-20
Non ferrous metals			12-25	12-25
Heat resistant alloys				
Hardened materials				

6

Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

M | Salo-Rex

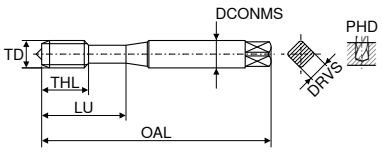
UNI NCW | UNI | UNI | UNI

C 2–3 | E 1,5–2 | E 1,5–2 | E 1,5–2

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

TiN | vap. | vap. | TiN



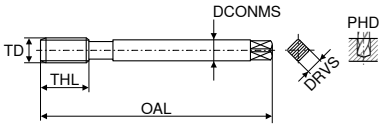


DIN 371 with reinforced shank

HSS-PM | HSS-E | HSS-E | HSS-E

∢ 42° ≤ 1100 N/mm² ≤ 3xD | ∢ 42° ≤ 1100 N/mm² ≤ 3xD | ∢ 42° ≤ 1100 N/mm² ≤ 3xD | ∢ 42° ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 149 ... EUR		U0 Article no. 22 524 ... EUR		U0 Article no. 22 534 ... EUR		U0 Article no. 22 526 ... EUR	
	mm	mm	mm	mm	mm	mm	mm									
M3	0,50	70	6,0	4,9	2,5	6	18	3	51,19	030						
M3	0,50	56	3,5	2,7	2,5	6	18	3			30,10	030			34,02	030
M4	0,70	63	4,5	3,4	3,3	7	21	3			30,10	040			37,20	040
M4	0,70	70	6,0	4,9	3,3	7	21	3	55,95	040						
M5	0,80	70	6,0	4,9	4,2	8	25	3	57,97	050	31,47	050	47,37	050	37,94	050
M6	1,00	80	6,0	4,9	5,0	10	30	3	71,22	060	31,47	060	47,37	060	44,94	060
M8	1,25	90	8,0	6,2	6,8	14	35	3	79,59	080	35,92	080	52,56	080	49,17	080
M10	1,50	100	10,0	8,0	8,5	16	39	3	97,93	100	43,76	100	63,26	100	59,03	100



DIN 376 with reduced shank

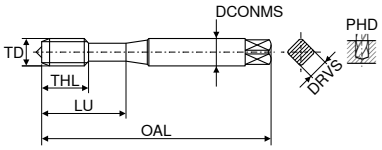
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 149 ... EUR		U0 Article no. 22 525 ... EUR		U0 Article no. 22 535 ... EUR		U0 Article no. 22 527 ... EUR	
	mm	mm	mm	mm	mm	mm									
M12	1,75	110	10	8,0	10,2	18	3	117,60	120						
M12	1,75	110	9	7,0	10,2	18	4			55,64	120	71,96	120	71,22	120
M14	2,00	110	11	9,0	12,0	20	4			90,72	140	105,00	140		
M16	2,00	110	12	9,0	14,0	22	3	157,90	160						
M16	2,00	110	12	9,0	14,0	22	4			77,78	160	103,80	160	102,40	160
M18	2,50	125	14	11,0	15,5	25	4			142,10	180				
M20	2,50	140	16	12,0	17,5	25	4			120,90	200	154,80	200	173,80	200
M22	2,50	140	18	14,5	19,5	27	5			194,00	220				
M24	3,00	160	18	14,5	21,0	30	5			169,50	240				

Steel	6-25	6-20	6-20	6-25
Stainless steel	5-10	4-8	4-8	5-10
Cast iron	10-20	6-15	6-15	10-20
Non ferrous metals	12-25			12-25
Heat resistant alloys				
Hardened materials				

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

M | Salo-Rex

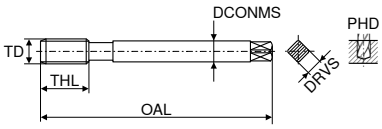


DIN 371 with reinforced shank



	UNI CNC	UNI CNC	UNI CNC	UNI CNC
	C 2–3	C 2–3	E 1,5–2	C 2–3
	ISO 2X 6HX	ISO 2 6H	ISO 2 6H	7G
	TiN	TiN GS	TiN GS	TiN GS
	HSS-E ◁ 50° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD
	U0	U0	U0	U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 416 ...		Article no. 22 544 ...		Article no. 22 546 ...		Article no. 22 594 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
M3	0,50	56	3,5	2,7	2,5	6	18	3	49,49	030	43,76	030			50,34	030
M4	0,70	63	4,5	3,4	3,3	7	21	3	51,82	040	44,72	040			50,87	040
M5	0,80	70	6,0	4,9	4,2	8	25	3	53,20	050	46,31	050	66,13	050	52,35	050
M6	1,00	80	6,0	4,9	5,0	10	30	3	64,32	060	47,90	060	66,77	060	57,23	060
M8	1,25	90	8,0	6,2	6,8	14	35	3	71,53	080	59,87	080	85,74	080	70,58	080
M10	1,50	100	10,0	8,0	8,5	16	39	3	88,60	100	68,04	100	98,56	100	78,31	100



DIN 376 with reduced shank

									U0		U0			U0	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes		Article no. 22 417 ...		Article no. 22 545 ...			Article no. 22 595 ...	
	mm	mm	mm	mm	mm	mm			EUR		EUR			EUR	
M12	1,75	110	9	7	10,2	18	3		104,40	120					
M12	1,75	110	9	7	10,2	18	4				92,62	120		105,00	120
M14	2,00	110	11	9	12,0	20	3		149,50	140					
M14	2,00	110	11	9	12,0	20	4				113,40	140		125,00	140
M16	2,00	110	12	9	14,0	22	3		145,20	160					
M16	2,00	110	12	9	14,0	22	4				124,00	160		135,60	160
M20	2,50	140	16	12	17,5	25	3		249,10	200					
M20	2,50	140	16	12	17,5	25	4				180,10	200		198,20	200

Steel	2-25	6-25	6-25	6-25
Stainless steel	1-10	5-10	5-10	5-10
Cast iron		10-20	10-20	10-20
Non ferrous metals	2-20	12-25	12-25	12-25
Heat resistant alloys				
Hardened materials				

6

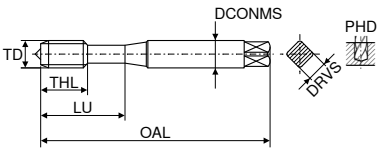
Blind hole – Machine taps, right hand

▲ DRY = for dry machining or minimum quantity lubrication (MMS)

M | Salo-Rex

UNI DRY | C 2–3 | ISO 2 6H | TiN GS

UNI DRY | C 2–3 | ISO 2 6H | TiN





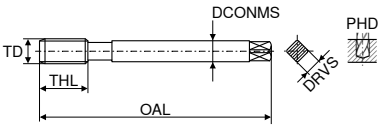


DIN 371 with reinforced shank

HSS-E
∢ 42°
≤ 1100 N/mm²
≤ 3xD

HSS-E
∢ 42°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 566 ...		U0 Article no. 22 449 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M3	0,50	56	3,5	2,7	2,5	6	18	3	40,27	**030**		
M4	0,70	63	4,5	3,4	3,3	7	21	3	43,45	**040**		
M5	0,80	70	6,0	4,9	4,2	8	25	3	44,94	**050**	67,83	**050**
M6	1,00	80	6,0	4,9	5,0	10	30	3	50,34	**060**	78,96	**060**
M8	1,25	90	8,0	6,2	6,8	14	35	3	53,09	**080**	87,11	**080**
M10	1,50	100	10,0	8,0	8,5	16	39	3	75,67	**100**	105,80	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 567 ...		U0 Article no. 22 450 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
M12	1,75	110	9	7	10,2	18	4	90,72	**120**	115,50	**120**
M16	2,00	110	12	9	14,0	22	4	140,90	**160**	163,20	**160**
M20	2,50	140	16	12	17,5	25	4	258,50	**200**	267,10	**200**

Steel	**6-25**	**5-45**
Stainless steel	**5-10**	**5-20**
Cast iron		
Non ferrous metals		**20-60**
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

▲ TS = for high-speed machining, up to 100 m/min.

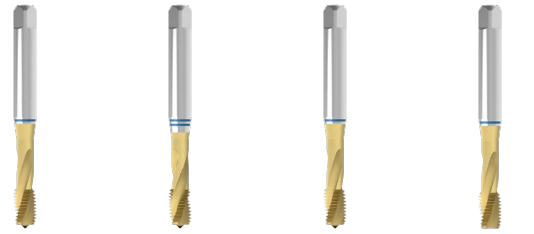
M | SL

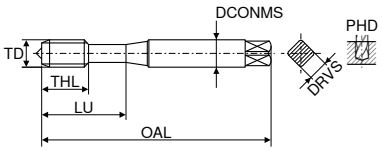
ST TS | HR | ST CNC | ST CNC

C 2–3

ISO 2X 6HX | ISO 2 6H | ISO 2X 6HX | ISO 2X 6HX

TiN | TiN | TiN | TiN

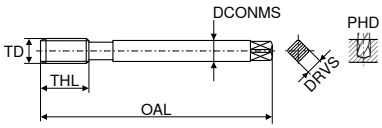




DIN 371 with reinforced shank

HSS-E ◁ 15° ≤ 1050 N/mm² ≤ 2xD | HSS-PM ◁ 25° ≤ 1400 N/mm² ≤ 2xD | HSS-E ◁ 15° ≤ 1100 N/mm² ≤ 2xD | HSS-E ◁ 15° ≤ 1100 N/mm² ≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 406 ... EUR		U0 Article no. 22 072 ... EUR		U0 Article no. 22 328 ... EUR		U0 Article no. 22 443 ... EUR	
	mm	mm	mm	mm	mm	mm	mm									
M3	0,50	56	3,5	2,7	2,5	6	18	2	46,63	030			42,49	030		
M3	0,50	56	3,5	2,7	2,5	11	18	3			43,76	030				
M4	0,70	63	4,5	3,4	3,3	13	21	3			44,09	040				
M4	0,70	63	4,5	3,4	3,3	7	21	3	49,49	040			44,29	040		
M5	0,80	70	6,0	4,9	4,2	15	25	3			45,68	050				
M5	0,80	70	6,0	4,9	4,2	8	25	3	51,08	050			46,10	050	67,83	050
M6	1,00	80	6,0	4,9	5,0	17	30	3			55,32	060				
M6	1,00	80	6,0	4,9	5,0	10	30	3	62,21	060			56,91	060	78,96	060
M8	1,25	90	8,0	6,2	6,8	20	35	3			59,66	080				
M8	1,25	90	8,0	6,2	6,8	14	35	3	69,41	080			64,32	080	86,48	080
M10	1,50	100	10,0	8,0	8,5	22	39	3			84,78	100				
M10	1,50	100	10,0	8,0	8,5	16	39	3	84,78	100			78,96	100	105,00	100
M12	1,75	110	12,0	9,0	10,2	24	44	3			94,74	120				



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 407 ... EUR		U0 Article no. 22 329 ... EUR		U0 Article no. 22 444 ... EUR	
	mm	mm	mm	mm	mm	mm							
M12	1,75	110	9	7	10,2	18	3	101,30	120	92,41	120	117,60	120
M16	2,00	110	12	9	14,0	22	3	142,10	160	133,50	160	165,40	160
M20	2,50	140	16	12	17,5	25	3	232,10	200	221,50	200		

Steel	20-100	2-6	5-45	5-45
Stainless steel				
Cast iron	20-60		10-30	10-30
Non ferrous metals	20-100		5-30	5-30
Heat resistant alloys	10-25	3-5		
Hardened materials				

Blind hole – Machine taps, right/left hand

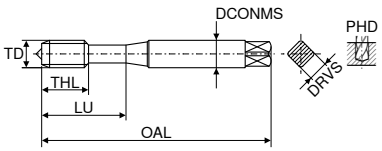
▲ LH = for left hand threads

M | Salo-Rex

ST | C 2–3 | ISO 2 6H

ST | C 2–3 | ISO 2 6H | TiN

ST LH | C 2–3 | ISO 2 6H



DIN 371 with reinforced shank

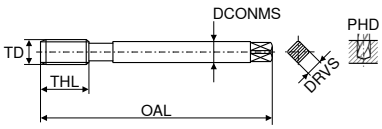


HSS-E ◁ 42° ≤ 750 N/mm² ≤ 3xD

HSS-E ◁ 42° ≤ 750 N/mm² ≤ 3xD

HSS-E ◁ 42° ≤ 750 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 082 ...		U0 Article no. 22 084 ...		U0 Article no. 22 138 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
M2	0,40	45	2,8	2,1	1,60	4,0	12	2	31,47	**020**	40,49	**020**		
M2,3	0,40	45	2,8	2,1	1,90	4,5	12	2	34,98	**023**				
M2,5	0,45	50	2,8	2,1	2,05	5,0	15	2	30,52	**025**				
M3	0,50	56	3,5	2,7	2,50	6,0	18	3	26,60	**030**	33,06	**030**	45,99	**030**
M3,5	0,60	56	4,0	3,0	2,90	7,0	20	3	29,36	**035**				
M4	0,70	63	4,5	3,4	3,30	7,0	21	3	26,50	**040**	33,81	**040**	41,43	**040**
M5	0,80	70	6,0	4,9	4,20	8,0	25	3	26,92	**050**	34,02	**050**	44,72	**050**
M6	1,00	80	6,0	4,9	5,00	10,0	30	3	27,55	**060**	42,71	**060**	43,02	**060**
M8	1,25	90	8,0	6,2	6,80	14,0	35	3	33,06	**080**	47,90	**080**	51,82	**080**
M10	1,50	100	10,0	8,0	8,50	16,0	39	3	39,00	**100**	64,65	**100**	59,66	**100**
M12	1,75	110	12,0	9,0	10,20	18,0	44	3	44,94	**120**				



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 083 ...		U0 Article no. 22 085 ...		U0 Article no. 22 139 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
M3	0,50	56	2,2		2,5	6	3	30,94	**030**				
M4	0,70	63	2,8	2,1	3,3	7	3	31,16	**040**				
M5	0,80	70	3,5	2,7	4,2	8	3	31,47	**050**				
M6	1,00	80	4,5	3,4	5,0	10	3	37,73	**060**				
M8	1,25	90	6,0	4,9	6,8	14	3	34,98	**080**				
M10	1,50	100	7,0	5,5	8,5	16	3			72,59	**100**		
M12	1,75	110	9,0	7,0	10,2	18	3	50,44	**120**	76,51	**120**	84,78	**120**
M14	2,00	110	11,0	9,0	12,0	20	3	64,01	**140**				
M16	2,00	110	12,0	9,0	14,0	22	3	69,94	**160**	98,56	**160**	121,90	**160**
M18	2,50	125	14,0	11,0	15,5	25	3	102,20	**180**				
M20	2,50	140	16,0	12,0	17,5	25	3	104,00	**200**	165,40	**200**	180,10	**200**
M22	2,50	140	18,0	14,5	19,5	27	4	143,10	**220**				
M24	3,00	160	18,0	14,5	21,0	30	4	133,50	**240**				
M30	3,50	180	22,0	18,0	26,5	35	4	228,90	**300**				
M33	3,50	180	25,0	20,0	29,5	35	4	331,80	**330**				
M36	4,00	200	28,0	22,0	32,0	40	4	331,80	**360**				

Steel	**10-20**	**10-25**	**10-20**
Stainless steel			
Cast iron			
Non ferrous metals	**10-20**	**10-25**	**10-20**
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.

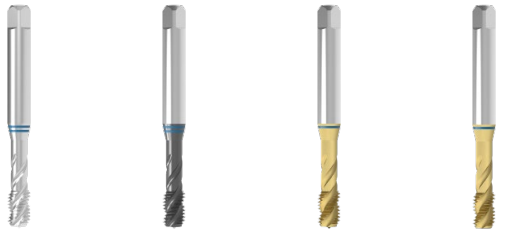
M | Salo-Rex

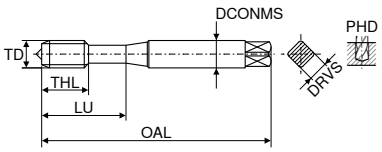
HR | C 2–3 | ISO 2 6H

HR | C 2–3 | ISO 2 6H | OSM

ST TS | C 2–3 | ISO 2 6H | TiN

ST TS | C 2–3 | ISO 2 6H | TiN

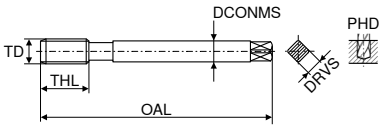




DIN 371 with reinforced shank

	HSS-PM ◁ 42° ≤ 1400 N/mm² ≤ 3xD		HSS-PM ◁ 42° ≤ 1400 N/mm² ≤ 3xD		HSS-E ◁ 40° ≤ 1100 N/mm² ≤ 2xD		HSS-E ◁ 40° ≤ 1100 N/mm² ≤ 2xD	
	U0		U0		U0		U0	
TD	Article no. 22 498 ...		Article no. 22 499 ...		Article no. 22 044 ...		Article no. 22 046 ...	
	EUR		EUR		EUR		EUR	
M3	31,16	030	39,53	030				
M4	29,36	040	39,53	040	48,21	040		
M5	30,94	050	42,07	050	51,82	050	81,70	050
M6	30,52	060	43,45	060	55,11	060	106,00	060
M8	36,98	080	55,11	080	62,21	080	110,20	080
M10	44,72	100	62,21	100	77,26	100	149,50	100

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	3,5	2,7	2,5	6	18	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M10	1,50	100	10,0	8,0	8,5	16	39	3



DIN 376 with reduced shank

	U0		U0	
TD	Article no. 22 045 ...		Article no. 22 047 ...	
	EUR		EUR	
M12	92,62	120	162,10	120
M16	133,50	160	249,10	160

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	4
M16	2,00	110	12	9	14,0	22	4

Steel	4-12	4-12	20-100	20-100
Stainless steel	6-8	6-8		
Cast iron			20-60	20-60
Non ferrous metals			20-100	20-100
Heat resistant alloys	3-5	3-5	10-25	10-25
Hardened materials				

6

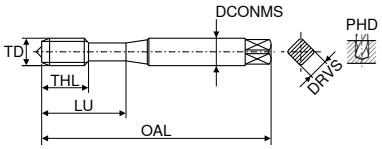
Blind hole – Machine taps, right hand

M | Salo-Rex

VA | C 2–3 | ISO 2 6H | vap.

VA | E 1,5–2 | ISO 2 6H | TiN GS

VA | C 2–3 | ISO 2 6H | TiN GS



DIN 371 with reinforced shank

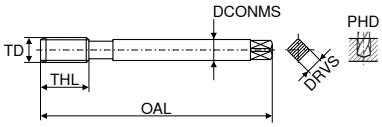


HSS-E ◁ 42° ≤ 900 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 900 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 900 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 090 ... EUR		U0 Article no. 22 042 ... EUR		U0 Article no. 22 040 ... EUR	
	mm	mm	mm	mm	mm	mm	mm							
M1,6	0,35	40	2,5	2,1	1,25	4	11	2					81,07	**016**
M2	0,40	45	2,8	2,1	1,60	4	12	2	50,87	**020**			45,68	**020**
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	40,27	**025**				
M2,5	0,45	50	2,8	2,1	2,05	5	15	3					43,45	**025**
M3	0,50	56	3,5	2,7	2,50	6	18	3	30,10	**030**			44,72	**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	30,94	**040**			45,25	**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	31,47	**050**	66,77	**050**	47,37	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	31,69	**060**	67,51	**060**	48,54	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	36,98	**080**	86,27	**080**	60,83	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	44,72	**100**	99,20	**100**	70,58	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 091 ... EUR			U0 Article no. 22 041 ... EUR	
	mm	mm	mm	mm	mm	mm						
M12	1,75	110	9	7,0	10,2	18	4	55,64	**120**		94,74	**120**
M14	2,00	110	11	9,0	12,0	20	4	81,70	**140**		114,50	**140**
M16	2,00	110	12	9,0	14,0	22	4	78,31	**160**		125,00	**160**
M20	2,50	140	16	12,0	17,5	25	4	120,90	**200**		182,30	**200**
M22	2,50	140	18	14,5	19,5	27	5	202,40	**220**			
M24	3,00	160	18	14,5	21,0	30	5	153,70	**240**			
M30	3,50	180	22	18,0	26,5	35	5	315,90	**300**			

Steel		5-12	5-12
Stainless steel	5-10	5-10	5-10
Cast iron			
Non ferrous metals			
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

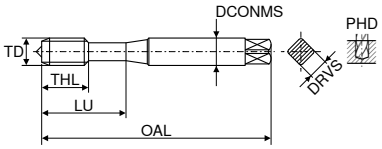
M | Salo-Rex

Soft | Soft | NW | NW

C 2–3 | C 2–3 | C 2–3 | C 2–3

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

CH | vap. | HCr



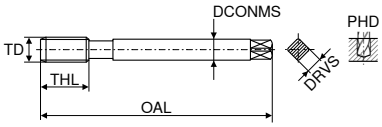
DIN 371 with reinforced shank



HSS-E | HSS-E | HSS-E | HSS-E

◁ 42° ≤ 500 N/mm² ≤ 3xD | ◁ 42° ≤ 500 N/mm² ≤ 3xD | ◁ 38° ≤ 500 N/mm² ≤ 3xD | ◁ 38° ≤ 500 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 326 ... EUR		U0 Article no. 22 324 ... EUR		U0 Article no. 22 086 ... EUR		U0 Article no. 22 088 ... EUR	
	mm	mm	mm	mm	mm	mm	mm									
M2	0,40	45	2,8	2,1	1,60	4	12	2	41,33	**020**	55,85	**020**	35,61	**020**	43,02	**020**
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	38,68	**025**	54,26	**025**	33,06	**025**	42,49	**025**
M3	0,50	56	3,5	2,7	2,50	6	18	2	31,69	**030**	47,05	**030**				
M3	0,50	56	3,5	2,7	2,50	6	18	3					27,77	**030**	35,92	**030**
M4	0,70	63	4,5	3,4	3,30	7	21	2	31,69	**040**	50,76	**040**				
M4	0,70	63	4,5	3,4	3,30	7	21	3					27,77	**040**	36,98	**040**
M5	0,80	70	6,0	4,9	4,20	8	25	2	32,75	**050**	52,35	**050**				
M5	0,80	70	6,0	4,9	4,20	8	25	3					28,83	**050**	37,20	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	2	32,75	**060**	72,70	**060**				
M6	1,00	80	6,0	4,9	5,00	10	30	3					28,83	**060**	38,26	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	2	39,21	**080**	78,96	**080**				
M8	1,25	90	8,0	6,2	6,80	14	35	3					33,28	**080**	43,02	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	2	46,10	**100**	99,20	**100**				
M10	1,50	100	10,0	8,0	8,50	16	39	3					40,80	**100**	49,81	**100**



DIN 376 with reduced shank

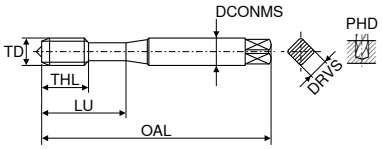
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 087 ... EUR		U0 Article no. 22 089 ... EUR	
	mm	mm	mm	mm	mm	mm					
M12	1,75	110	9	7	10,2	18	3	51,19	**120**	62,21	**120**
M16	2,00	110	12	9	14,0	22	3	73,12	**160**	86,80	**160**

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	**15-40**	**15-40**	**10-20**	**12-25**
Heat resistant alloys				
Hardened materials				

6

Blind hole – Machine taps, right hand

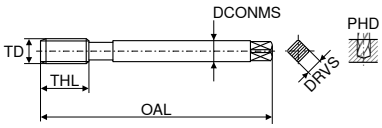
M | SL



DIN 371 with reinforced shank

	Ti	Ti	Ni	Ni
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX	ISO 2 6H	ISO 2X 6HX
	TiN	TiCN	TiCN	TiCN
				
	HSS-PM	HSS-PM	HSS-PM	HSS-PM
	◁ 30° ≤ 1400 N/mm² ≤ 1,5xD	◁ 15° ≤ 1200 N/mm² ≤ 2xD	◁ 15° ≤ 1600 N/mm² ≤ 1,5xD	◁ 15° ≤ 1600 N/mm² ≤ 2xD
	U0	U0	U0	U0
	Article no. 22 076 ...	Article no. 22 163 ...	Article no. 22 073 ...	Article no. 22 424 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm	mm									
M3	0,50	56	3,5	2,7	2,5	11	18	2			45,04	030			57,54	030
M3	0,50	56	3,5	2,7	2,5	11	18	3					97,18	030		
M3	0,50	56	3,5	2,7	2,5	6	18	3	43,45	030						
M3,5	0,60	56	4,0	3,0	2,9	12	20	3			48,43	035				
M4	0,70	63	4,5	3,4	3,3	7	21	3	44,72	040						
M4	0,70	63	4,5	3,4	3,3	13	21	3			49,49	040	97,18	040	59,99	040
M5	0,80	70	6,0	4,9	4,2	8	25	3	44,94	050						
M5	0,80	70	6,0	4,9	4,2	15	25	3			50,02	050	86,80	050	62,21	050
M6	1,00	80	6,0	4,9	5,0	10	30	3	49,17	060						
M6	1,00	80	6,0	4,9	5,0	17	30	3			66,66	060	102,40	060	78,21	060
M8	1,25	90	8,0	6,2	6,8	14	35	3	51,82	080						
M8	1,25	90	8,0	6,2	6,8	20	35	3			72,70	080	150,50	080	85,84	080
M10	1,50	100	10,0	8,0	8,5	16	39	3	75,04	100						
M10	1,50	100	10,0	8,0	8,5	22	39	3			89,44	100	130,30	100	107,00	100
M12	1,75	110	12,0	9,0	10,2	18	44	3	85,74	120						



DIN 376 with reduced shank

								U0		U0		U0	
								Article no. 22 164 ...		Article no. 22 124 ...		Article no. 22 425 ...	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm							
M12	1,75	110	9	7,0	10,2	24	3	101,30	120			125,00	120
M12	1,75	110	9	7,0	10,2	24	4			149,50	120		
M14	2,00	110	11	9,0	12,0	26	3					183,40	140
M14	2,00	110	11	9,0	12,0	26	4			200,30	140		
M16	2,00	110	12	9,0	14,0	27	3	142,10	160			171,70	160
M16	2,00	110	12	9,0	14,0	27	5			181,30	160		
M20	2,50	140	16	12,0	17,5	32	3	245,90	200			297,80	200
M24	3,00	160	18	14,5	21,0	34	3	280,80	240				

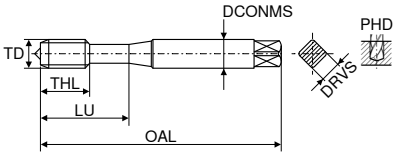
Steel	**2-5**	**6-8**		
Stainless steel		**4-10**		
Cast iron				
Non ferrous metals		**10-12**		
Heat resistant alloys	**2-6**	**4-6**	**2-4**	**2-4**
Hardened materials				

Blind hole – Machine taps, right hand

▲ ES = extra short

M | Salo-Rex

UNI ES | E 1,5–2 | ISO 2 6H | vap.





DIN 352 with reinforced shank

HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 500 ...	EUR
	mm	mm	mm	mm	mm	mm	mm			
M3	0,50	40	3,5	2,7	2,5	6	18	3	25,22	**030**
M3,5	0,60	45	4,0	3,0	2,9	7	20	3	32,43	**035**
M4	0,70	45	4,5	3,4	3,3	7	22	3	25,97	**040**
M5	0,80	50	6,0	4,9	4,2	9	25	3	26,60	**050**
M6	1,00	56	6,0	4,9	5,0	10	28	3	27,55	**060**
M8	1,25	63	6,0	4,9	6,8	14		3	31,69	**080**
M10	1,50	70	7,0	5,5	8,5	16		3	37,73	**100**
M12	1,75	75	9,0	7,0	10,2	18		4	49,17	**120**
M16	2,00	80	12,0	9,0	14,0	22		4	77,78	**160**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

▲ AUT = short version for automatic use

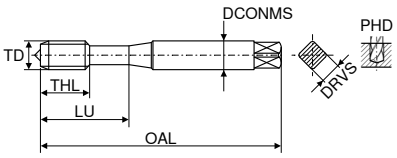
▲ ES = extra short

M | SL

ST ES | ST AUT/ES

C 2–3 | E 1,5–2

ISO 2 6H | ISO 2 6H







DIN 352 with reinforced shank

HSS-E
◁ 15°
≤ 750 N/mm²
≤ 2xD

HSS-E
◁ 15°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 016 ...		U0 Article no. 22 001 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M3	0,50	40	3,5	2,7	2,5	10	18	2	22,68	**030**	24,27	**030**
M4	0,70	45	4,5	3,4	3,3	12	22	3	22,79	**040**	24,59	**040**
M5	0,80	50	6,0	4,9	4,2	14	25	3	23,42	**050**	24,69	**050**
M6	1,00	56	6,0	4,9	5,0	16	28	3	24,16	**060**	26,81	**060**
M8	1,25	63	6,0	4,9	6,8	20		3	27,55	**080**	30,52	**080**
M10	1,50	70	7,0	5,5	8,5	22		3	34,98	**100**	38,26	**100**
M12	1,75	75	9,0	7,0	10,2	24		3	44,94	**120**		
M14	2,00	80	11,0	9,0	12,0	26		3	65,38	**140**		
M16	2,00	80	12,0	9,0	14,0	27		3	71,96	**160**		
M20	2,50	95	16,0	12,0	17,5	32		3	103,80	**200**		

Steel	**10-20**	**10-20**
Stainless steel		
Cast iron		
Non ferrous metals	**10-20**	**10-20**
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

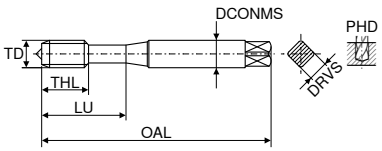
M | Salo-Rex

UNI EL | ST EL

C 2–3 | C 2–3

ISO 2 6H | ISO 2 6H

vap.





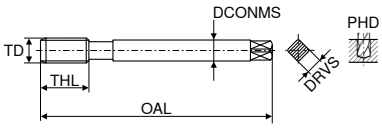


DIN 371 with reinforced shank

HSS-E ∢ 42° ≤ 1100 N/mm² ≤ 3xD

HSS-E ∢ 42° ≤ 750 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 538 ...		U0 Article no. 22 422 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M3	0,50	100	3,5	2,7	2,5	6	18	3	52,35	**030**	60,93	**030**
M4	0,70	125	4,5	3,4	3,3	7	21	3	52,35	**040**	59,66	**040**
M5	0,80	140	6,0	4,9	4,2	8	25	3	58,71	**050**	66,66	**050**
M6	1,00	160	6,0	4,9	5,0	10	30	3	61,79	**060**	69,41	**060**
M8	1,25	180	8,0	6,2	6,8	14	35	3	73,86	**080**	83,51	**080**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 539 ...		U0 Article no. 22 423 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
M6	1,00	160	4,5	3,4	5,0	10	3	66,77	**060**	69,41	**060**
M8	1,25	180	6,0	4,9	6,8	14	3	81,07	**080**	83,51	**080**
M10	1,50	200	7,0	5,5	8,5	16	3	81,70	**100**	91,67	**100**
M12	1,75	224	9,0	7,0	10,2	18	3	104,40	**120**	119,80	**120**
M14	2,00	224	11,0	9,0	12,0	20	3	153,70	**140**	173,80	**140**
M16	2,00	224	12,0	9,0	14,0	22	3	147,30	**160**	168,50	**160**
M18	2,50	250	14,0	11,0	15,5	25	3	236,30	**180**	255,40	**180**
M20	2,50	280	16,0	12,0	17,5	25	3	202,40	**200**	227,90	**200**

Steel	**6-20**	**5-25**
Stainless steel	**4-8**	
Cast iron	**6-15**	
Non ferrous metals		**10-40**
Heat resistant alloys		
Hardened materials		

6

Blind hole – Machine taps, right hand

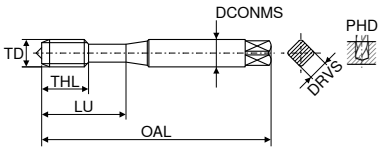
▲ EL = extra long, with double overall length

M | SL

ST
EL

E
1,5–2

ISO 2
6H

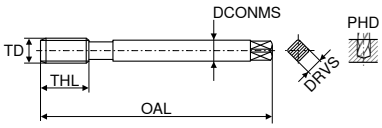




DIN 371 with reinforced shank

HSS-E
∢ 15°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 078 ...	EUR
	mm	mm	mm	mm	mm	mm	mm			
M3	0,50	100	3,5	2,7	2,5	11	18	2	50,34	**030**
M4	0,70	125	4,5	3,4	3,3	13	21	3	50,02	**040**
M5	0,80	140	6,0	4,9	4,2	15	25	3	56,70	**050**
M6	1,00	160	6,0	4,9	5,0	17	30	3	59,03	**060**
M8	1,25	180	8,0	6,2	6,8	20	35	3	71,22	**080**



DIN 376 with reduced shank

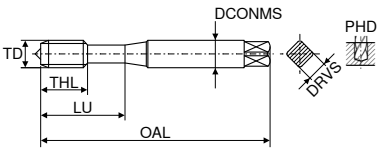
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 080 ...	EUR
	mm	mm	mm	mm	mm	mm			
M6	1,00	160	4,5	3,4	5,0	17	3	61,46	**060**
M8	1,25	180	6,0	4,9	6,8	20	3	73,12	**080**
M10	1,50	200	7,0	5,5	8,5	22	3	77,78	**100**
M12	1,75	224	9,0	7,0	10,2	24	3	99,20	**120**
M14	2,00	224	11,0	9,0	12,0	26	3	145,20	**140**
M16	2,00	224	12,0	9,0	14,0	27	3	143,10	**160**
M20	2,50	280	16,0	12,0	17,5	32	3	198,20	**200**

Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

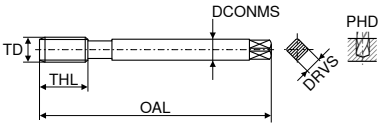
M



DIN 371 with reinforced shank

	UNI	UNI	UNI	UNI	UNI NC
	C 2–3	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	vap.	TiN	TiN	TiCN	TiN GS
					
	HSS-E ◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E ◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-PM ◁ 50° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E ◁ 45° ≤ 1000 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1000 N/mm² ≤ 3xD
	T9	T9	T9	T9	T9
	Article no. 23 118 ...	Article no. 23 120 ...	Article no. 23 026 ...	Article no. 23 122 ...	Article no. 23 124 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	EUR		EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm	mm											
M2	0,40	45	2,8	2,1	1,60	4	12	2	12,64	020	11,01	020						
M2,5	0,45	50	2,8	2,1	2,05	5	14	2	12,43	025	16,61	025						
M3	0,50	56	3,5	2,7	2,50	6	18	3	8,54	030	12,64	030	14,06	030	18,44	030	19,46	030
M4	0,70	63	4,5	3,4	3,30	7	21	3	8,54	040	13,55	040	14,06	040	19,46	040	20,58	040
M5	0,80	70	6,0	4,9	4,20	8	25	3	8,97	050	13,76	050	15,08	050	20,28	050	21,70	050
M6	1,00	80	6,0	4,9	5,00	10	30	3	9,27	060	17,12	060	17,53	060	26,19	060	29,35	060
M8	1,25	90	8,0	6,2	6,80	14	35	3	10,90	080	18,44	080	20,79	080	28,12	080	31,49	080
M10	1,50	100	10,0	8,0	8,50	16	39	3	12,53	100	23,64	100	26,19	100	35,56	100	40,05	100



DIN 376 with reduced shank

	T9	T9	T9	T9	T9
	Article no. 23 119 ...	Article no. 23 121 ...	Article no. 23 027 ...	Article no. 23 123 ...	Article no. 23 125 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	EUR		EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm											
M3	0,50	56	2,2		2,5	6	3	10,19	030								
M4	0,70	63	2,8	2,1	3,3	7	3	9,18	040								
M5	0,80	70	3,5	2,7	4,2	8	3	9,04	050								
M6	1,00	80	4,5	3,4	5,0	10	3	8,90	060								
M8	1,25	90	6,0	4,9	6,8	14	3	9,32	080								
M10	1,50	100	7,0	5,5	8,5	16	3	12,64	100								
M12	1,75	110	9,0	7,0	10,2	18	3	14,27	120	28,33	120						
M12	1,75	110	9,0	7,0	10,2	18	4					30,88	120	42,19	120	46,47	120
M14	2,00	110	11,0	9,0	12,0	20	3			43,07	14000						
M14	2,00	110	11,0	9,0	12,0	20	4					44,53	140				
M16	2,00	110	12,0	9,0	14,0	22	3	20,99	160	39,44	160						
M16	2,00	110	12,0	9,0	14,0	22	4					44,53	160	56,25	160	61,96	160
M18	2,50	125	14,0	11,0	15,5	25	3			68,13	18000						
M20	2,50	140	16,0	12,0	17,5	25	3	31,59	200	58,39	200	50,95	200				
M20	2,50	140	16,0	12,0	17,5	25	4							101,90	200	113,10	200
M22	2,50	140	18,0	14,5	19,5	27	4			99,86	22000						
M24	3,00	160	18,0	14,5	21,0	34	4			82,34	240						
M27	3,00	160	20,0	16,0	24,0	30	4			124,90	27000						
M30	3,50	180	22,0	18,0	26,5	35	4			138,70	30000						
M33	3,50	180	25,0	20,0	29,5	35	4			200,00	33000						
M36	4,00	200	28,0	22,0	32,0	40	4			217,30	36000						

Steel	2-25	5-45	10-20	5-45	5-45
Stainless steel	2-8	5-15	8-15	5-15	5-15
Cast iron	5-20	10-25	20-25	10-25	10-25
Non ferrous metals	10-20	15-40	20-25	15-40	15-40
Heat resistant alloys					
Hardened materials					

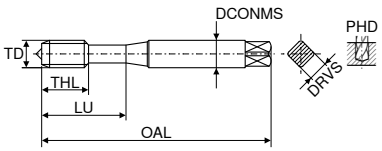
6

Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

M

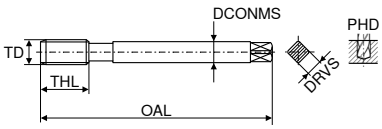
UNI NCW	FE	FE-HF	VA
C 2–3	C 2–3	C 2–3	C 2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiCN		TiCN	



DIN 371 with reinforced shank



	HSS-PM	HSS-E	HSS-E	HSS-E
	35° ≤ 1000 N/mm² ≤ 2,5xD	35° ≤ 850 N/mm² ≤ 2,5xD	35° ≤ 1100 N/mm² ≤ 2,5xD	35° ≤ 1200 N/mm² ≤ 2,5xD
	T9	T9	T9	T9
TD	Article no. 23 126 ...	Article no. 23 216 ...	Article no. 23 312 ...	Article no. 23 414 ...
mm	EUR	EUR	EUR	EUR
M2	0,40	45	2,8	2,1	1,60	4	12	2			11,51	020			19,67	020
M2,5	0,45	50	2,8	2,1	2,05	5	14	2			21,09	025			23,34	025
M3	0,50	56	3,5	2,7	2,50	6	18	3			11,31	030	16,92	030	12,74	030
M3	0,50	70	6,0	4,9	2,50	6	18	3	20,89	030						
M4	0,70	63	4,5	3,4	3,30	7	21	3			11,31	040	18,44	040	12,74	040
M4	0,70	70	6,0	4,9	3,30	7	21	3	23,84	040						
M5	0,80	70	6,0	4,9	4,20	8	25	3	24,25	050	11,72	050	18,65	050	13,15	050
M6	1,00	80	6,0	4,9	5,00	10	30	3	24,25	060	11,72	060	25,78	060	13,15	060
M8	1,25	90	8,0	6,2	6,80	14	35	3	30,67	080	15,18	080	28,12	080	17,02	080
M10	1,50	100	10,0	8,0	8,50	16	39	3	36,99	100	18,14	100	35,05	100	20,69	100



DIN 376 with reduced shank

	T9	T9	T9	T9
TD	Article no. 23 127 ...	Article no. 23 217 ...	Article no. 23 313 ...	Article no. 23 415 ...
mm	EUR	EUR	EUR	EUR
M12	1,75	110	10	8,0	10,2	18	3	46,26	120					
M12	1,75	110	9	7,0	10,2	18	3			24,46	120	40,56	120	27,41	120
M14	2,00	110	11	9,0	12,0	20	3			29,45	140				
M16	2,00	110	12	9,0	14,0	22	3	62,26	160	37,09	160	54,82	160	42,19	160
M20	2,50	140	16	12,0	17,5	25	3			58,49	200	98,23	200	64,50	200
M24	3,00	160	18	14,5	21,0	30	4							88,45	240

Steel	5-45	5-25	5-45	
Stainless steel	5-15			3-10
Cast iron	10-25			
Non ferrous metals	15-40			
Heat resistant alloys	5-8			
Hardened materials				

Blind hole – Machine taps, right hand

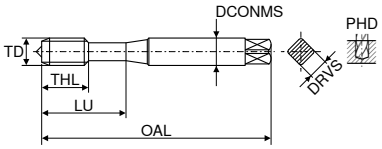
M

VA | VA | VA | AL | AL

C 2–3

ISO 2 6H

TiN | | TiN | | CrN

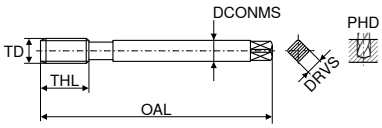




DIN 371 with reinforced shank

HSS-E ◁ 45° ≤ 1200 N/mm² ≤ 3xD | HSS-PM ◁ 40° ≤ 1200 N/mm² ≤ 2,5xD | HSS-PM ◁ 40° ≤ 1200 N/mm² ≤ 2,5xD | HSS-E ◁ 35° ≤ 500 N/mm² ≤ 2,5xD | HSS-E ◁ 35° ≤ 500 N/mm² ≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 416 ...		T9 Article no. 23 426 ...		T9 Article no. 23 456 ...		T9 Article no. 23 616 ...		T9 Article no. 23 614 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
M2	0,40	45	2,8	2,1	1,60	4	12	2	21,20	**020**								
M2,5	0,45	50	2,8	2,1	2,05	5	14	2	20,28	**025**								
M3	0,50	56	3,5	2,7	2,50	6	18	3	17,22	**030**	12,53	**030**	14,06	**030**	11,31	**030**	14,88	**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	18,04	**040**	12,74	**040**	15,29	**040**	11,31	**040**	14,88	**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	18,44	**050**	13,04	**050**	15,59	**050**	11,72	**050**	15,39	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	23,13	**060**	13,25	**060**	20,07	**060**	11,72	**060**	15,39	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	25,48	**080**	15,59	**080**	21,50	**080**	15,18	**080**	17,83	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	32,20	**100**	18,75	**100**	29,65	**100**	18,14	**100**	21,81	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 417 ...		T9 Article no. 23 427 ...		T9 Article no. 23 457 ...		T9 Article no. 23 617 ...		T9 Article no. 23 615 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
M12	1,75	110	9	7,0	10,2	18	3			30,98	**120**	42,39	**120**	24,46	**120**	27,00	**120**
M12	1,75	110	9	7,0	10,2	18	4	38,11	**120**								
M14	2,00	110	11	9,0	12,0	20	4			40,76	**140**						
M16	2,00	110	12	9,0	14,0	22	3			44,33	**160**	53,40	**160**				
M16	2,00	110	12	9,0	14,0	22	4	51,97	**160**								
M20	2,50	140	16	12,0	17,5	25	3			66,03	**200**	106,00	**200**				
M20	2,50	140	16	12,0	17,5	25	4	89,57	**200**								
M24	3,00	160	18	14,5	21,0	30	4			83,56	**240**						

Steel					
Stainless steel	**8-20**	**5-10**	**8-20**		
Cast iron					
Non ferrous metals				**10-20**	**15-40**
Heat resistant alloys					
Hardened materials					

6

Through hole / Blind hole – Machine taps, right hand

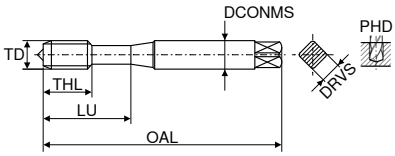
M | TWIN

ST | HR | AMPCO

C 2–3

ISO 2X 6HX

nitr.



DIN 371 with reinforced shank





	HSS-E	HSS-E	HSS-PM
	0° ≤ 750 N/mm² ≤ 2xD	0° ≤ 1400 N/mm² ≤ 2xD	0° ≤ 800 N/mm² ≤ 2xD
	U0	U0	U0
TD	Article no. 22 028 ...	Article no. 22 006 ...	Article no. 22 030 ...
	EUR	EUR	EUR

TD	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes					
M1,2	0,25	40	2,5	2,1	0,95	5	13	2	44,09	012 [1]			
M1,4	0,30	40	2,5	2,1	1,10	6	13	2	35,61	014 [1]			
M1,6	0,35	40	2,5	2,1	1,25	6	11	2	32,00	016			
M1,7	0,35	40	2,5	2,1	1,35	6	11	2	34,98	017			
M1,8	0,35	40	2,5	2,1	1,45	6	11	2	32,43	018			
M2	0,40	45	2,8	2,1	1,60	7	12	3	27,24	020			
M2,2	0,45	45	2,8	2,1	1,75	7	12	3	28,83	022			
M2,3	0,40	45	2,8	2,1	1,90	7	12	3	31,16	023			
M2,5	0,45	50	2,8	2,1	2,05	9	14	3	26,60	025			
M2,6	0,45	50	2,8	2,1	2,15	9	14	3	28,61	026			
M3	0,50	56	3,5	2,7	2,50	11	18	3	22,15	030	30,10	030	32,65	030
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	22,68	035				
M4	0,70	63	4,5	3,4	3,30	13	21	3	22,46	040	31,16	040	33,81	040
M5	0,80	70	6,0	4,9	4,20	15	25	3	22,68	050	32,43	050	33,81	050
M6	1,00	80	6,0	4,9	5,00	17	30	3	22,79	060	32,65	060	33,81	060
M7	1,00	80	7,0	5,5	6,00	17	30	3	32,43	070				
M8	1,25	90	8,0	6,2	6,80	20	35	3	25,97	080	36,24	080	38,57	080
M10	1,50	100	10,0	8,0	8,50	22	39	3	32,65	100	44,94	100	48,54	100
M12	1,75	110	12,0	9,0	10,20	24	44	3	40,80	120				

Steel	10-20	6-15	
Stainless steel			
Cast iron		6-15	
Non ferrous metals	10-20		
Heat resistant alloys		3-5	3-5
Hardened materials			

1) Tol. 4H/5H ≤ M1.4

DIN 376 can be found on the next page

Through hole / Blind hole – Machine taps, right hand

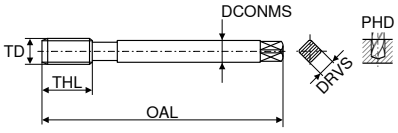
M | TWIN

ST | HR | AMPCO

C 2–3

ISO 2X 6HX

nitr.



DIN 376 with reduced shank





HSS-E | HSS-E | HSS-PM

0° | 0° | 0°

≤ 750 N/mm² | ≤ 1400 N/mm² | ≤ 800 N/mm²

≤ 2xD | ≤ 2xD | ≤ 2xD

U0 | U0 | U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 029 ...		Article no. 22 007 ...		Article no. 22 031 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
M4	0,70	63	2,8	2,1	3,3	13	3	28,19	**040**				
M5	0,80	70	3,5	2,7	4,2	15	3	28,83	**050**				
M6	1,00	80	4,5	3,4	5,0	17	3	28,83	**060**				
M8	1,25	90	6,0	4,9	6,8	20	3	36,45	**080**				
M10	1,50	100	7,0	5,5	8,5	22	3	40,80	**100**				
M12	1,75	110	9,0	7,0	10,2	24	3	42,07	**120**	57,23	**120**		
M12	1,75	110	9,0	7,0	10,2	24	4					81,70	**120**
M14	2,00	110	11,0	9,0	12,0	26	3	57,97	**140**				
M16	2,00	110	12,0	9,0	14,0	27	3	61,79	**160**	81,07	**160**		
M16	2,00	110	12,0	9,0	14,0	27	4					122,90	**160**
M18	2,50	125	14,0	11,0	15,5	30	4	91,88	**180**				
M20	2,50	140	16,0	12,0	17,5	32	4	93,36	**200**			155,80	**200**
M22	2,50	140	18,0	14,5	19,5	32	4	132,50	**220**				
M24	3,00	160	18,0	14,5	21,0	34	4	126,20	**240**			190,70	**240**
M33	3,50	180	25,0	20,0	29,5	40	4	249,10	**330**				

Steel	**10-20**	**6-15**	
Stainless steel			
Cast iron		**6-15**	
Non ferrous metals	**10-20**		
Heat resistant alloys		**3-5**	**3-5**
Hardened materials			

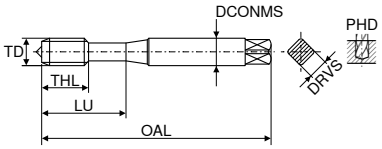
6

Through hole / Blind hole – Machine taps, right hand

M | TWIN

GG | C 2–3 | ISO 2X 6HX | nitr.

GG | C 2–3 | ISO 2X 6HX | nitr.



DIN 371 with reinforced shank

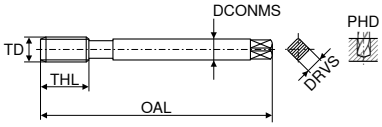




HSS-E
0°
≤ 1050 N/mm²
≤ 2xD

HSS-E
0°
≤ 1050 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 032 ...		U0 Article no. 22 036 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M2	0,40	45	2,8	2,1	1,60	7	12	3	28,83	**020**		
M2,5	0,45	50	2,8	2,1	2,05	9	14	3	28,83	**025**		
M3	0,50	56	3,5	2,7	2,50	11	18	3	24,27	**030**		
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	26,60	**035**		
M4	0,70	63	4,5	3,4	3,30	13	21	3	24,91	**040**		
M5	0,80	70	6,0	4,9	4,20	15	25	3	26,50	**050**	38,79	**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	26,50	**060**	39,74	**060**
M8	1,25	90	8,0	6,2	6,80	20	35	3	31,05	**080**	43,76	**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	36,45	**100**	51,82	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 033 ...		U0 Article no. 22 037 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
M4	0,70	63	2,8	2,1	3,3	13	3	31,16	**040**		
M5	0,80	70	3,5	2,7	4,2	15	3	31,47	**050**		
M6	1,00	80	4,5	3,4	5,0	17	3	31,69	**060**		
M8	1,25	90	6,0	4,9	6,8	20	3	33,81	**080**		
M10	1,50	100	7,0	5,5	8,5	22	3	38,79	**100**		
M12	1,75	110	9,0	7,0	10,2	24	3	46,21	**120**	61,15	**120**
M14	2,00	110	11,0	9,0	12,0	26	3	61,15	**140**	84,04	**140**
M16	2,00	110	12,0	9,0	14,0	27	3	66,66	**160**	84,78	**160**
M18	2,50	125	14,0	11,0	15,5	30	4	98,66	**180**		
M20	2,50	140	16,0	12,0	17,5	32	4	98,66	**200**	126,20	**200**
M22	2,50	140	18,0	14,5	19,5	32	4	149,50	**220**		
M24	3,00	160	18,0	14,5	21,0	34	4	130,30	**240**		

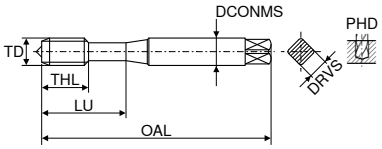
Steel		
Stainless steel		
Cast iron	**10-20**	**10-20**
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

M | TWIN

HT | D 4–5 | ISO 2X 6HX | OSM

HT | C 2–3 | ISO 2X 6HX | TiCN

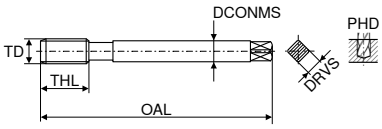






DIN 371 with reinforced shank

									Solid carbide 0° ≤ 63 HRC ≤ 1,5xD		HSS-PM 0° 44 - 52 HRC ≤ 1,5xD	
									U0		U0	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 806 ...		Article no. 22 227 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M3	0,50	63	4,5	3,4	2,55	6	18	4	194,00	**030**		
M4	0,70	63	4,5	3,4	3,40	8	20	4	194,00	**040**		
M5	0,80	70	6,0	4,9	4,30	10	26	4	219,30	**050**		
M6	1,00	80	6,0	4,9	5,00	10	30	4			129,30	**060**
M6	1,00	80	6,0	4,9	5,10	12	28	4	229,30	**060**		
M8	1,25	90	8,0	6,2	6,80	14	35	5			138,80	**080**
M8	1,25	90	8,0	6,2	6,90	15	35	5	255,70	**080**		
M10	1,50	100	10,0	8,0	8,50	18	38	5	316,40	**100**		
M10	1,50	100	10,0	8,0	8,50	16	39	5			173,80	**100**
M12	1,75	110	12,0	9,0	10,40	21	41	5	486,10	**120**		
M16	2,00	110	16,0	12,0	14,20	24	44	6	685,60	**160**		



DIN 376 with reduced shank

								U0	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 228 ...	
	mm	mm	mm	mm	mm	mm		EUR	
M12	1,75	110	9	7	10,4	18	5	217,30	**120**
M16	2,00	110	12	9	14,2	22	6	297,80	**160**

Steel		
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
Hardened materials	**1-3**	**1-3**

6

Through hole / Blind hole – Machine taps, right hand

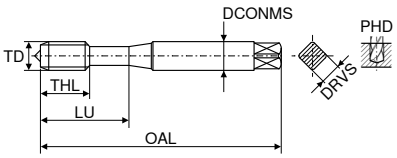
▲ ES = extra short

M | TWIN

ST
ES

C
2–3

ISO 2X
6HX





DIN 352 with reinforced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 018 ... EUR	
	mm	mm	mm	mm	mm	mm	mm			
M2	0,40	36	2,8	2,1	1,60	8		3	30,94	**020**
M2,5	0,45	40	2,8	2,1	2,05	9		3	30,94	**025**
M3	0,50	40	3,5	2,7	2,50	10	18	3	19,93	**030**
M4	0,70	45	4,5	3,4	3,30	12	22	3	19,93	**040**
M5	0,80	50	6,0	4,9	4,20	14	25	3	19,93	**050**
M6	1,00	56	6,0	4,9	5,00	16	28	3	21,40	**060**
M8	1,25	63	6,0	4,9	6,80	20		3	24,59	**080**
M10	1,50	70	7,0	5,5	8,50	22		3	32,00	**100**
M12	1,75	75	9,0	7,0	10,20	24		3	38,57	**120**

Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
Hardened materials	

Through hole / Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

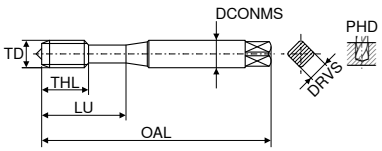
M | TWIN

HR EL

C 2–3

ISO 2X 6HX

nitr.

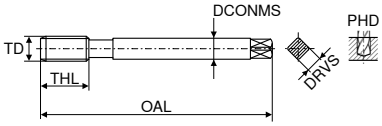




DIN 371 with reinforced shank

HSS-E
0°
≤ 1400 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 122 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
M3	0,50	100	3,5	2,7	2,5	11	18	3	55,32	**030**
M4	0,70	125	4,5	3,4	3,3	13	21	3	55,32	**040**
M5	0,80	140	6,0	4,9	4,2	15	25	3	58,50	**050**
M6	1,00	160	6,0	4,9	5,0	17	30	3	61,15	**060**
M8	1,25	180	8,0	6,2	6,8	20	35	3	72,59	**080**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 123 ...	
	mm	mm	mm	mm	mm	mm		EUR	
M10	1,50	200	7	5,5	8,5	22	3	81,07	**100**
M12	1,75	224	9	7,0	10,2	24	3	97,18	**120**
M16	2,00	224	12	9,0	14,0	27	3	152,60	**160**
M20	2,50	280	16	12,0	17,5	32	4	207,70	**200**

Steel	**6-15**
Stainless steel	
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	**3-5**
Hardened materials	

6

Through hole / Blind hole – Machine taps, right hand

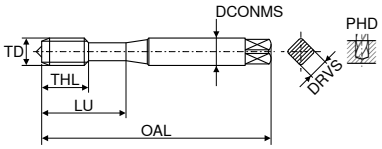
M

GG

C
2–3

ISO 2X
6HX

TiCN

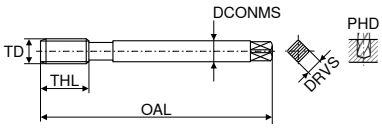




DIN 371 with reinforced shank

HSS-E
0°
≤ 900 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 512 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
M3	0,50	56	3,5	2,7	2,5	11	18	3	15,39	**030**
M4	0,70	63	4,5	3,4	3,3	13	21	3	16,71	**040**
M5	0,80	70	6,0	4,9	4,2	15	25	3	17,02	**050**
M6	1,00	80	6,0	4,9	5,0	17	30	3	23,54	**060**
M8	1,25	90	8,0	6,2	6,8	20	35	3	24,76	**080**
M10	1,50	100	10,0	8,0	8,5	22	39	3	31,49	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 513 ...	
	mm	mm	mm	mm	mm	mm		EUR	
M12	1,75	110	9	7	10,2	24	3	36,48	**120**

Steel	
Stainless steel	
Cast iron	**10-30**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Through hole / Blind hole – Machine thread formers, right hand

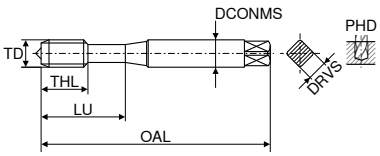
M | Spanlos

EC | C 2–3 | ISO 2X 6HX | Ti200

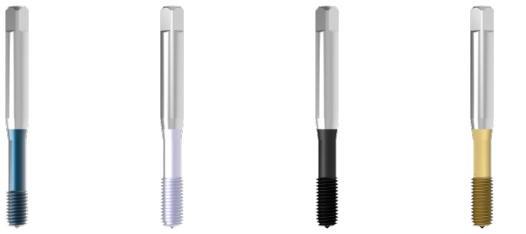
EC | C 2–3 | ISO 2X 6HX | HCr

EC | C 2–3 | ISO 2X 6HX | TiN GS

EC | C 2–3 | ISO 2X 6HX | TiN



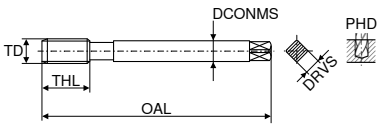
DIN 2174 with reinforced shank



HSS-PM ≤ 1400 N/mm² ≤ 1,5xD | HSS-E ≤ 1100 N/mm² ≤ 1,5xD | HSS-E ≤ 1100 N/mm² ≤ 1,5xD | HSS-E ≤ 1100 N/mm² ≤ 1,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	U0 Article no. 22 112 ... EUR		U0 Article no. 22 128 ... EUR		U0 Article no. 22 136 ... EUR		U0 Article no. 22 100 ... EUR	
	mm	mm	mm	mm	mm	mm	mm								
M1	0,25	40	2,5	2,1	0,90	5	6,5							78,00	010 1)
M1,2	0,25	40	2,5	2,1	1,10	5	6,5							73,86	012 1)
M1,4	0,30	40	2,5	2,1	1,28	6	9,0							66,02	014 1)
M1,6	0,35	40	2,5	2,1	1,47	6	9,0							63,69	016
M1,7	0,35	40	2,5	2,1	1,57	6	9,0							69,94	017
M2	0,40	45	2,8	2,1	1,85	7	10,0			64,01	020			45,68	020
M2,5	0,45	50	2,8	2,1	2,30	9	14,0					68,67	025		
M2,5	0,45	50	2,8	2,1	2,33	9	14,0			55,11	025			44,29	025
M2,6	0,45	50	2,8	2,1	2,43	9	14,0							49,28	026
M3	0,50	56	3,5	2,7	2,80	6	18,0	60,51	030						
M3	0,50	56	3,5	2,7	2,80	11	18,0			39,63	030	56,27	030	42,39	030
M3,5	0,60	56	4,0	3,0	3,25	12	20,0							37,30	035
M4	0,70	63	4,5	3,4	3,70	13	21,0			41,23	040	57,76	040	43,35	040
M4	0,70	63	4,5	3,4	3,70	7	21,0	63,69	040						
M5	0,80	70	6,0	4,9	4,65	15	25,0			43,02	050	59,66	050	45,25	050
M5	0,80	70	6,0	4,9	4,65	8	25,0	67,40	050						
M6	1,00	80	6,0	4,9	5,60	10	30,0	82,56	060						
M6	1,00	80	6,0	4,9	5,60	17	30,0			43,02	060	66,34	060	51,72	060
M8	1,25	90	8,0	6,2	7,40	20	35,0							56,80	080
M8	1,25	90	8,0	6,2	7,45	20	35,0			48,96	080	72,06	080		
M8	1,25	90	8,0	6,2	7,45	14	35,0	91,99	080						
M10	1,50	100	10,0	8,0	9,35	16	39,0	118,70	100						
M10	1,50	100	10,0	8,0	9,35	22	39,0			64,01	100	88,28	100	72,06	100

1) Tol. ISO 1X 4HX ≤ M1.4



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	U0 Article no. 22 101 ... EUR	
	mm	mm	mm	mm	mm	mm		
M12	1,75	110	9	7	11,25	24	79,16	120
M16	2,00	110	12	9	15,10	27	133,50	160

Steel	8-30	8-25	8-30	8-30
Stainless steel	8-15		8-15	8-15
Cast iron				
Non ferrous metals	12-25	10-30	12-25	12-25
Heat resistant alloys				
Hardened materials				

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

M | Spanlos

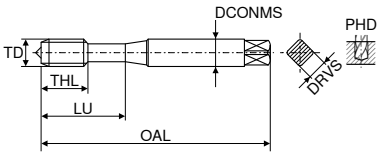
EC SN | C 2–3 | ISO 2X 6HX | nitr.

EC SN | C 2–3 | ISO 2X 6HX | HCr

EC SN | C 2–3 | ISO 3X 6GX | TiN

EC SN | C 2–3 | ISO 2X 6HX | TiN GS

EC SN | C 2–3 | ISO 2X 6HX | TiN

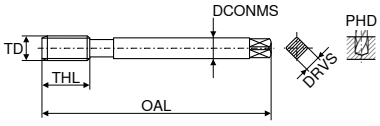


DIN 2174 with reinforced shank



HSS-E ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 104 ... EUR		U0 Article no. 22 107 ... EUR		U0 Article no. 22 108 ... EUR		U0 Article no. 22 154 ... EUR		U0 Article no. 22 105 ... EUR	
	mm	mm	mm	mm	mm	mm	mm											
M2	0,40	45	2,8	2,1	1,85	7	10	3									52,46	020
M2,5	0,45	50	2,8	2,1	2,33	9	14	3									47,90	025
M3	0,50	56	3,5	2,7	2,80	11	18	3					43,98	030	60,62	030		
M3	0,50	56	3,5	2,7	2,80	11	18	4	32,65	030	45,25	030					46,21	030
M3,5	0,60	56	4,0	3,0	3,25	12	20	3									45,68	035
M4	0,70	63	4,5	3,4	3,70	13	21	4					45,68	040	62,32	040		
M4	0,70	63	4,5	3,4	3,70	13	21	5	33,81	040	46,21	040					47,90	040
M5	0,80	70	6,0	4,9	4,65	15	25	4					47,90	050	64,54	050		
M5	0,80	70	6,0	4,9	4,65	15	25	5	35,71	050	48,54	050					49,81	050
M6	1,00	80	6,0	4,9	5,60	17	30	4					55,95	060	71,32	060		
M6	1,00	80	6,0	4,9	5,60	17	30	5	36,24	060	48,54	060					56,48	060
M8	1,25	90	8,0	6,2	7,45	20	35	6	43,66	080	55,64	080	63,69	080	77,57	080	62,32	080
M10	1,50	100	10,0	8,0	9,35	22	39	6	55,95	100	73,33	100	80,65	100	94,32	100	78,00	100



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 106 ... EUR	
	mm	mm	mm	mm	mm	mm			
M12	1,75	110	9	7	11,25	24	6	97,28	120
M14	2,00	110	11	9	13,10	26	5	187,60	140
M16	2,00	110	12	9	15,10	27	7	150,50	160

Steel	8-30	8-30	8-30	8-30	8-30
Stainless steel	8-15	8-15	8-15	8-15	8-15
Cast iron					
Non ferrous metals	10-30	10-30	12-25	12-25	12-25
Heat resistant alloys					
Hardened materials					

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

M | Spanlos

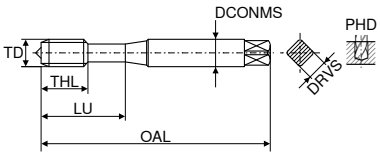
EC SN | EC SN | NEO SN | NEO SN

C 2–3

ISO 2X 6HX

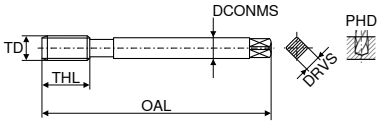
Ti200 | Ti200 | TiN | TiN





DIN 2174 with reinforced shank

	HSS-PM ≤ 1400 N/mm² ≤ 3xD		HSS-PM ≤ 1400 N/mm² ≤ 3xD		HSS-PM ≤ 1100 N/mm² ≤ 3xD		HSS-PM ≤ 1100 N/mm² ≤ 3xD	
	U0		U0		U0		U0	
TD / TP / OAL / DCONMS / DRVS / PHD / THL / LU / Flutes	Article no. 22 114 ...		Article no. 22 118 ...		Article no. 22 452 ...		Article no. 22 453 ...	
mm / mm / mm / mm / mm / mm / mm / mm /	EUR		EUR		EUR		EUR	
M2 0,40 45 2,8 2,1 1,85 4 12 3	110,20	020						
M2,5 0,45 50 2,8 2,1 2,33 5 14 3	68,04	025						
M3 0,50 56 3,5 2,7 2,80 6 18 3	68,04	030						
M3 0,50 56 3,5 2,7 2,80 11 18 4					60,62	030		
M4 0,70 63 4,5 3,4 3,70 13 21 4					62,32	040		
M4 0,70 63 4,5 3,4 3,70 7 21 4	70,47	040						
M5 0,80 70 6,0 4,9 4,65 8 25 4	75,04	050	95,38	050				
M5 0,80 70 6,0 4,9 4,65 15 25 4					66,34	050	82,88	050
M6 1,00 80 6,0 4,9 5,60 10 30 4	89,97	060	112,30	060				
M6 1,00 80 6,0 4,9 5,60 17 30 5					83,62	060	101,10	060
M8 1,25 90 8,0 6,2 7,45 20 35 5					93,68	080	114,50	080
M8 1,25 90 8,0 6,2 7,45 14 35 5	100,50	080	124,00	080				
M10 1,50 100 10,0 8,0 9,35 22 39 5					121,90	100	145,20	100
M10 1,50 100 10,0 8,0 9,35 16 39 5	129,30	100	156,80	100				



DIN 2174 with reduced shank

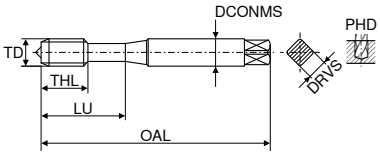
	U0			U0		U0	
TD / TP / OAL / DCONMS / DRVS / PHD / THL / Flutes	Article no. 22 115 ...			Article no. 22 452 ...		Article no. 22 454 ...	
mm / mm / mm / mm / mm / mm / mm /	EUR			EUR		EUR	
M12 1,75 110 9 7 11,25 18 5	132,50	120					
M12 1,75 110 9 7 11,25 24 6				140,90	120	169,50	120
M16 2,00 110 12 9 15,10 27 6				228,90	160	259,70	160

Steel	8-30	8-30	5-30	5-30
Stainless steel	8-15	8-15	5-15	5-15
Cast iron				
Non ferrous metals	12-25	12-25	5-10	5-10
Heat resistant alloys			5-20	5-20
Hardened materials				

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

M



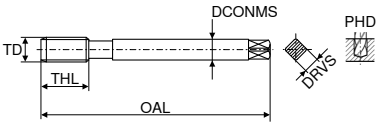
DIN 2174 with reinforced shank

	UNI	UNI	UNI SN	UNI SN
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
	TiN	CrN	TiN	CrN



	HSS-E	HSS-E	HSS-E	HSS-E
	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD
	T9	T9	T9	T9
	Article no. 23 810 ...	Article no. 23 812 ...	Article no. 23 814 ...	Article no. 23 816 ...
	EUR	EUR	EUR	EUR

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes							
	mm	mm	mm	mm	mm	mm	mm								
M2	0,40	45	2,8	2,1	1,85	7	12		25,07	020	24,56	020			
M2	0,40	45	2,8	2,1	1,85	7	12	3					28,43	020	28,02	020
M2,5	0,45	50	2,8	2,1	2,33	9	14	3					25,78	025	24,56	025
M2,5	0,45	50	2,8	2,1	2,33	9	14		22,32	025	21,30	025				
M3	0,50	56	3,5	2,7	2,80	11	18	3					18,44	030	17,83	030
M3	0,50	56	3,5	2,7	2,80	11	18		16,20	030	15,39	030				
M4	0,70	63	4,5	3,4	3,70	13	21	4					19,16	040	17,83	040
M4	0,70	63	4,5	3,4	3,70	13	21		16,81	040	15,79	040				
M5	0,80	70	6,0	4,9	4,65	15	25	4					20,28	050	18,85	050
M5	0,80	70	6,0	4,9	4,65	15	25		17,83	050	16,51	050				
M6	1,00	80	6,0	4,9	5,60	17	30	4					23,44	060	18,85	060
M6	1,00	80	6,0	4,9	5,60	17	30		21,20	060	16,51	060				
M8	1,25	90	8,0	6,2	7,45	20	35	5					26,49	080	22,21	080
M8	1,25	90	8,0	6,2	7,45	20	35		23,64	080	19,06	080				
M10	1,50	100	10,0	8,0	9,35	22	39	5					34,34	100	28,43	100
M10	1,50	100	10,0	8,0	9,35	22	39		31,49	100	24,56	100				



DIN 2174 with reduced shank

									T9		T9		T9		T9	
									Article no. 23 811 ...		Article no. 23 813 ...		Article no. 23 815 ...		Article no. 23 817 ...	
									EUR		EUR		EUR		EUR	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes									
	mm	mm	mm	mm	mm	mm										
M12	1,75	110	9	7,0	11,25	24			35,97	120	30,06	120				
M12	1,75	110	9	7,0	11,25	24	5						40,25	120	34,54	120
M16	2,00	110	12	9,0	15,10	27	6						75,30	160	69,09	160
M16	2,00	110	12	9,0	15,10	27			67,76	160	60,12	160				
M18	2,50	125	14	11,0	16,80	30	6						138,90	18000		
M20	2,50	140	16	12,0	18,80	32	6						129,20	20000		
M24	3,00	160	18	14,5	22,60	34	6						172,60	24000		

Steel	10-50	10-50	10-50	10-50
Stainless steel	5-20	5-20	5-20	5-20
Cast iron				
Non ferrous metals	10-50	10-50	10-50	10-50
Heat resistant alloys	5-15	5-15	5-15	5-15
Hardened materials				

Through hole – machine taps for wire thread inserts, right hand

EG M | Stabil

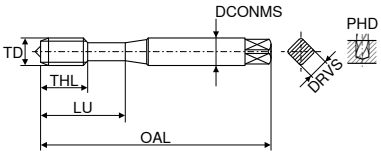
UNI

B
4–5

6H mod

nitr. + vap.

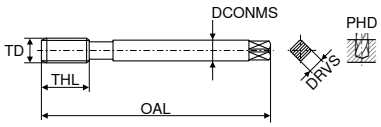




DIN 40435 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 662 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
EG-M2,5	0,45	56	3,5	2,7	2,65	11	18	3	48,74	025
EG-M3	0,50	63	4,5	3,4	3,15	10	21	3	40,49	030
EG-M4	0,70	70	6,0	4,9	4,20	12	25	3	42,07	040
EG-M5	0,80	80	6,0	4,9	5,25	13	30	3	40,80	050
EG-M6	1,00	90	8,0	6,2	6,30	17	35	3	41,23	060
EG-M8	1,25	100	10,0	8,0	8,40	18	39	3	49,17	080



DIN 40435 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 663 ...	
	mm	mm	mm	mm	mm	mm		EUR	
EG-M10	1,50	100	9	7,0	10,50	22	3	66,13	100
EG-M12	1,75	110	11	9,0	12,50	26	3	75,67	120
EG-M16	2,00	125	14	11,0	16,50	27	3	110,20	160
EG-M20	2,50	160	18	14,5	20,75	34	3	154,80	200

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – machine taps for wire thread inserts, right hand

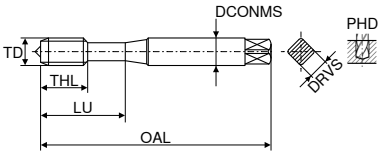
EG M | Salo-Rex

Soft | UNI

C 2–3 | C 2–3

6H mod | 6H mod

CH | vap.



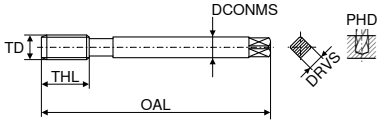




DIN 40435 with reinforced shank

HSS-E ◁ 42° ≤ 500 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 280 ... EUR		U0 Article no. 22 664 ... EUR	
	mm	mm	mm	mm	mm	mm	mm					
EG-M2,5	0,45	56	3,5	2,7	2,65	5	18	2	58,93	025		
EG-M2,5	0,45	56	3,5	2,7	2,65	5	18	3			46,63	025
EG-M3	0,50	63	4,5	3,4	3,15	5	21	2	56,91	030		
EG-M3	0,50	63	4,5	3,4	3,15	5	21	3			42,49	030
EG-M4	0,70	70	6,0	4,9	4,20	8	25	2	56,91	040		
EG-M4	0,70	70	6,0	4,9	4,20	8	25	3			42,49	040
EG-M5	0,80	80	6,0	4,9	5,25	8	30	2	77,57	050		
EG-M5	0,80	80	6,0	4,9	5,25	8	30	3			39,21	050
EG-M6	1,00	90	8,0	6,2	6,30	10	35	2	78,96	060		
EG-M6	1,00	90	8,0	6,2	6,30	10	35	3			42,49	060
EG-M8	1,25	100	10,0	8,0	8,40	16	39	2	99,20	080		
EG-M8	1,25	100	10,0	8,0	8,40	16	39	3			47,58	080



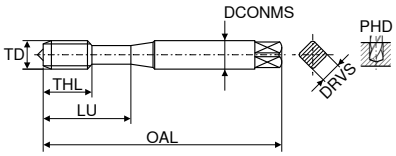
DIN 40435 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 665 ... EUR	
	mm	mm	mm	mm	mm	mm			
EG-M10	1,50	100	9	7,0	10,50	15	5	60,83	100
EG-M12	1,75	110	11	9,0	12,50	20	4	74,51	120
EG-M16	2,00	125	14	11,0	16,50	20	5	112,30	160
EG-M20	2,50	160	18	14,5	20,75	30	4	152,60	200

Steel		6-20
Stainless steel		4-8
Cast iron		6-15
Non ferrous metals	15-40	
Heat resistant alloys		
Hardened materials		

Through hole – Machine taps, right hand

MF | Stabil



DIN 371 with reinforced shank

	UNI	UNI	VG
	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2X 6HX
	nitr. + vap.	TiN	TiN
			
	HSS-E	HSS-E	HSS-E
	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0
	Article no. 22 590 ...	Article no. 22 550 ...	Article no. 22 587 ...
	EUR	EUR	EUR

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes						
	mm	mm	mm	mm	mm	mm	mm							
M4x0,5	0,50	63	4,5	3,4	3,5	10	21	3	49,17	**040**	56,91	**040**		
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3					56,91	**040**
M5x0,5	0,50	70	6,0	4,9	4,5	11	25	3	49,17	**050**	56,91	**050**		
M6x0,5	0,50	80	6,0	4,9	5,5	13	30	3	51,82	**060**	71,22	**060**		
M6x0,75	0,75	80	6,0	4,9	5,2	13	30	3	51,82	**062**	71,22	**062**		
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3					68,04	**062**
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3					68,04	**060**
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3					56,91	**050**
M8x1	1,00	90	8,0	6,2	7,0	17	35	3	50,55	**084**	68,04	**080**		
M10x1	1,00	90	10,0	8,0	9,0	18	35	4	51,82	**102**	77,26	**100**		

Steel	**6-20**	**6-25**	**6-15**
Stainless steel	**4-8**	**5-10**	**5-10**
Cast iron	**6-15**	**10-20**	
Non ferrous metals		**12-25**	**10-20**
Heat resistant alloys			
hardened materials			

DIN 374 can be found on the next page

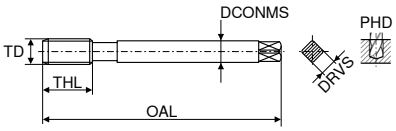
6

Through hole – Machine taps, right/left hand

▲ TS = for high-speed machining, up to 100 m/min.

▲ LH = for left hand threads

MF | Stabil



DIN 374 with reduced shank

	ST LH	ST TS	UNI	UNI	VG
	B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2X 6HX	ISO 2 6H	ISO 2 6H	ISO 2X 6HX
		TiN	nitr. + vap.	TiN	TiN
	HSS-E ◁ 0° ≤ 750 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0	U0	U0
TD	Article no. 22 210 ...	Article no. 22 193 ...	Article no. 22 551 ...	Article no. 22 552 ...	Article no. 22 570 ...
	EUR	EUR	EUR	EUR	EUR

TD	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes									
M6x0,75	0,75	80	4,5	3,4	5,2	13	3					44,09	062			
M6x0,5	0,50	80	4,5	3,4	5,5	13	3					91,25	060			
M8x0,75	0,75	80	6,0	4,9	7,2	14	3	86,27	082			48,21	082			
M8x1	1,00	90	6,0	4,9	7,0	17	3	64,32	084			44,09	084	68,04	080	
M8x1	1,00	90	6,0	4,9	7,0	10	4			77,26	080					68,04	080
M10x1	1,00	90	7,0	5,5	9,0	18	4	66,77	102			44,94	102	74,51	100	
M10x0,75	0,75	90	7,0	5,5	9,2	18	4					64,65	100			
M10x1,25	1,25	100	7,0	5,5	8,8	16	4									91,88	102
M10x1,25	1,25	100	7,0	5,5	8,8	22	3					96,44	104			
M10x1	1,00	90	7,0	5,5	9,0	10	4			82,88	100					81,07	100
M12x1	1,00	100	9,0	7,0	11,0	18	4	86,27	120			52,56	120	87,33	121		
M12x1,5	1,50	100	9,0	7,0	10,5	22	3	91,88	124			49,81	124	77,26	120		
M12x1,25	1,25	100	9,0	7,0	10,8	22	3					73,12	122				
M12x1,5	1,50	100	9,0	7,0	10,5	15	4			79,59	120					91,25	120
M14x1,5	1,50	100	11,0	9,0	12,5	22	3	117,60	144			66,77	144	101,10	140		
M14x1	1,00	100	11,0	9,0	13,0	18	4					135,60	140				
M14x1,5	1,50	100	11,0	9,0	12,5	15	4			100,40	140					110,20	140
M16x1,5	1,50	100	12,0	9,0	14,5	22	3	117,60	162			79,59	162	104,40	160		
M16x1,5	1,50	100	12,0	9,0	14,5	15	4			133,50	160					125,00	160
M18x1	1,00	110	14,0	11,0	17,0	20	5					221,50	180				
M18x1,5	1,50	110	14,0	11,0	16,5	25	4	133,50	182			92,62	182				
M18x2	2,00	125	14,0	11,0	16,0	26	3					182,30	184				
M18x1,5	1,50	110	14,0	11,0	16,5	17	4			165,40	180					154,80	180
M20x1,5	1,50	125	16,0	12,0	18,5	25	4	154,80	202			104,40	202	164,30	200		
M20x1	1,00	125	16,0	12,0	19,0	20	5					239,50	200				
M20x1,5	1,50	125	16,0	12,0	18,5	17	4			207,70	200					194,00	200
M22x1,5	1,50	125	18,0	14,5	20,5	25	4					114,50	222	199,30	220		
M26x1,5	1,50	140	18,0	14,5	24,5	28	4					160,10	260				
M24x2	2,00	140	18,0	14,5	22,0	27	4					234,20	244				
M25x1,5	1,50	140	18,0	14,5	23,5	28	4					385,70	250				
M24x1,5	1,50	140	18,0	14,5	22,5	27	4					129,30	242				
M27x2	2,00	140	20,0	16,0	25,0	28	4					407,00	272				
M28x1,5	1,50	140	20,0	16,0	26,5	28	5					187,60	280				
M30x1,5	1,50	150	22,0	18,0	28,5	28	5					201,30	302				

Steel	10-20	20-100	6-20	6-25	6-15
Stainless steel			4-8	5-10	5-10
Cast iron		20-60	6-15	10-20	
Non ferrous metals	10-20	20-100		12-25	10-20
Heat resistant alloys		10-25			
hardened materials					

Through hole – Machine taps, right hand

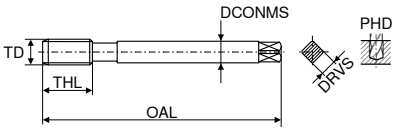
MF

UNI

B
4–5

ISO 2
6H

TiN





DIN 374 with reduced shank

HSS-PM

0°
≤ 1000 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 041 ... EUR	
	mm	mm	mm	mm	mm	mm			
M8x1	1,00	90	6	4,9	7,0	17	3	21,91	**081**
M10x1	1,00	90	7	5,5	9,0	18	4	25,07	**102**
M10x1,25	1,25	100	7	5,5	8,8	22	3	26,90	**104**
M12x1	1,00	100	9	7,0	11,0	18	4	30,88	**120**
M12x1,25	1,25	100	9	7,0	10,8	22	3	32,30	**122**
M12x1,5	1,50	100	9	7,0	10,5	22	3	28,74	**121**
M14x1,5	1,50	100	11	9,0	12,5	22	3	35,46	**144**
M14x1,25	1,25	100	11	9,0	12,8	22	3	37,30	**142**
M16x1,5	1,50	100	12	9,0	14,5	22	3	40,15	**162**
M18x1,5	1,50	110	14	11,0	16,5	17	4	53,09	**182**
M20x1,5	1,50	125	16	12,0	18,5	17	4	71,74	**202**
M24x1,5	1,50	140	18	14,5	22,5	27	4	77,44	**242**
M24x2	2,00	140	18	14,5	22,0	27	4	88,25	**244**
M22x1,5	1,50	125	18	14,5	20,5	25	4	67,46	**222**

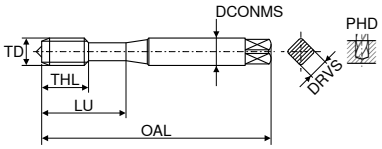
Steel	**10-20**
Stainless steel	**8-15**
Cast iron	**20-25**
Non ferrous metals	**20-25**
Heat resistant alloys	
hardened materials	

6

Through hole – Machine taps, right hand

MF

UNI	UNI	FE	FE-HF	VA
B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
nitr. + vap.	TiN		TiCN	TiN

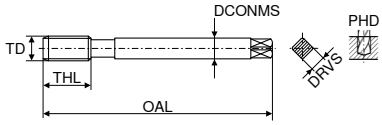




DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1200 N/mm² ≤ 4xD
	T9	T9	T9	T9	T9
TD	Article no. 23 140 ...	Article no. 23 142 ...	Article no. 23 240 ...	Article no. 23 340 ...	Article no. 23 440 ...
	EUR	EUR	EUR	EUR	EUR

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	23 140 ... EUR		23 142 ... EUR		23 240 ... EUR		23 340 ... EUR		23 440 ... EUR	
	mm	mm	mm	mm	mm	mm	mm											
M4x0,5	0,50	63	4,5	3,4	3,5	10	21	3	15,49	**040**	20,89	**040**	18,65	**040**				
M6x0,75	0,75	80	6,0	4,9	5,2	13	30	3	15,49	**062**	25,98	**062**	18,65	**062**	34,85	**062**	31,39	**062**
M6x0,5	0,50	80	6,0	4,9	5,5	13	30	3	16,51	**060**	25,98	**060**	18,85	**060**				
M5x0,5	0,50	70	6,0	4,9	4,5	11	25	3	15,49	**050**	21,09	**050**	18,85	**050**	26,70	**050**	25,68	**050**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 141 ... EUR		T9 Article no. 23 143 ... EUR		T9 Article no. 23 241 ... EUR		T9 Article no. 23 341 ... EUR		T9 Article no. 23 441 ... EUR	
	mm	mm	mm	mm	mm	mm											
M8x0,75	0,75	80	6	4,9	7,0	14	3							36,17	**082**		
M8x0,5	0,50	80	6	8,0	7,5	14	3					25,07	**080**				
M8x1	1,00	90	6	4,9	7,0	17	3	13,86	**084**			20,48	**084**	34,34	**084**	33,22	**084**
M8x1	1,00	90	6	4,9	7,0	17	4			25,58	**084**						
M8x0,75	0,75	80	6	4,9	7,2	14	3	17,73	**082**	27,21	**082**	21,70	**082**			35,36	**082**
M10x0,75	0,75	90	7	5,5	9,2	18	4	23,95	**100**	36,38	**100**	29,96	**100**				
M10x1,25	1,25	100	7	5,5	8,8	22	3	21,60	**104**	34,24	**104**	24,66	**104**				
M10x1	1,00	90	7	5,5	9,0	18	4	14,27	**102**	27,92	**102**	23,84	**102**	38,11	**102**	36,17	**102**
M12x1,5	1,50	100	9	7,0	10,5	22	3	16,20	**124**	29,65	**124**	26,49	**124**	41,27	**124**	38,72	**124**
M12x1,25	1,25	100	9	7,0	10,8	22	3	21,81	**122**	34,85	**122**	28,94	**122**				
M12x1	1,00	100	9	7,0	11,0	18	4	18,34	**120**	32,10	**120**	27,61	**120**	42,90	**120**	41,68	**120**
M14x1	1,00	100	11	9,0	13,0	18	4	25,98	**140**	38,52	**140**	34,03	**140**				
M14x1,5	1,50	100	11	9,0	12,5	22	3	23,13	**144**	39,44	**144**	32,71	**144**	53,40	**144**	51,15	**144**
M16x1	1,00	100	12	9,0	15,0	18	4	29,14	**160**	44,94	**160**	44,94	**160**				
M16x1,5	1,50	100	12	9,0	14,5	22	3	23,95	**162**	44,94	**162**	41,58	**162**	60,12	**162**	58,49	**162**
M18x1	1,00	110	14	11,0	17,0	20	5					59,41	**180**				
M18x1,5	1,50	110	14	11,0	16,5	25	4	33,02	**182**	55,54	**182**	54,01	**182**				
M20x1,5	1,50	125	16	12,0	18,5	25	4	36,79	**202**	70,41	**202**	59,92	**202**				
M20x1	1,00	125	16	12,0	19,0	20	5					64,20	**200**				
M26x1,5	1,50	140	18	14,5	24,5	28	4					102,90	**260**				
M24x1,5	1,50	140	18	14,5	22,5	27	4	47,89	**242**	76,63	**242**	80,40	**242**				
M22x1,5	1,50	125	18	14,5	20,5	25	4	41,58	**222**	73,16	**222**	68,99	**222**				
M28x1,5	1,50	140	20	16,0	26,5	28	5					118,20	**280**				
M30x1,5	1,50	150	22	18,0	28,5	28	5					131,50	**300**				

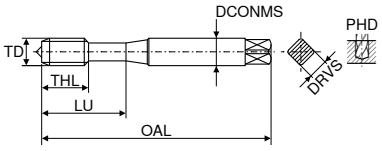
Steel	**2-25**	**5-45**	**5-25**	**5-45**	
Stainless steel	**2-8**	**5-15**			**8-20**
Cast iron	**5-20**	**10-25**			
Non ferrous metals	**10-20**	**15-40**			
Heat resistant alloys					
hardened materials					

Blind hole – Machine taps, right hand

MF | Salo-Rex

UNI	UNI	UNI	UNI
E 1,5–2	E 1,5–2	E 1,5–2	E 1,5–2
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G
vap.	TiN	vap.	vap.

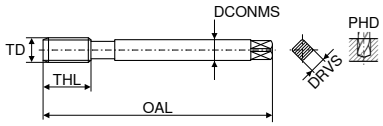




DIN 371 with reinforced shank

HSS-E	HSS-E	HSS-E	HSS-E
◁ 42°	◁ 42°	◁ 42°	◁ 42°
≤ 1100 N/mm²	≤ 1100 N/mm²	≤ 1100 N/mm²	≤ 1100 N/mm²
≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 441 ... EUR	
	mm	mm	mm	mm	mm	mm	mm			
M4x0,5	0,50	63	4,5	3,4	3,50	5	21	3	53,09	**040**
M6x0,75	0,75	80	6,0	4,9	5,25	8	30	3	53,09	**062**
M5x0,5	0,50	70	6,0	4,9	4,50	5	25	3	53,09	**050**



DIN 374 with reduced shank

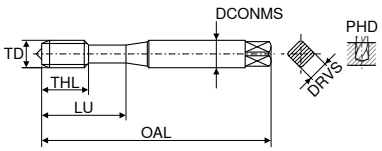
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 555 ... EUR		U0 Article no. 22 556 ... EUR		U0 Article no. 22 491 ... EUR		U0 Article no. 22 490 ... EUR	
	mm	mm	mm	mm	mm	mm									
M8x1	1,0	90	6	4,9	7,0	10	3	48,54	**080**	62,21	**080**			53,09	**080**
M10x1	1,0	90	7	5,5	9,0	10	4	52,35	**100**	79,59	**100**			58,50	**100**
M12x1,5	1,5	100	9	7,0	10,5	15	5	59,87	**120**	91,25	**120**	86,27	**120**	64,32	**120**
M14x1,5	1,5	100	11	9,0	12,5	15	5	77,26	**140**	116,60	**140**	114,50	**140**	84,78	**140**
M16x1,5	1,5	100	12	9,0	14,5	15	5	91,88	**160**	122,90	**160**	117,60	**160**	101,10	**160**
M18x1,5	1,5	110	14	11,0	16,5	17	5							116,60	**180**
M20x1,5	1,5	125	16	12,0	18,5	17	5					180,10	**200**	133,50	**200**

Steel	**6-20**	**6-25**	**6-20**	**6-20**
Stainless steel	**4-8**	**5-10**	**4-8**	**4-8**
Cast iron	**6-15**	**10-20**	**6-15**	**6-15**
Non ferrous metals		**12-25**		
Heat resistant alloys				
hardened materials				

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

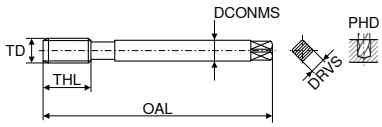
MF | Salo-Rex



DIN 371 with reinforced shank

	UNI	UNI	UNI CNC	UNI CNC
	C 2–3	C 2–3	E 1,5–2	E 1,5–2
	ISO 2 6H	ISO 2 6H	7G	ISO 2 6H
	vap.	TiN	TiN GS	TiN GS
				
	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 202 ...					U0 Article no. 22 548 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR					EUR	
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3	53,09	040					
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3	48,54	050				61,46	050
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3	53,09	062				61,46	062
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3	53,09	060				61,46	060



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 553 ...		U0 Article no. 22 554 ...		U0 Article no. 22 563 ...		U0 Article no. 22 549 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
M6x0,75	0,75	80	4,5	3,4	5,2	8	3	53,09	062						
M8x0,75	0,75	80	6,0	4,9	7,2	8	3	49,81	080					64,65	082
M8x1	1,00	90	6,0	4,9	7,0	10	3	45,99	082	62,21	080	93,89	084	78,31	084
M10x0,75	0,75	90	7,0	5,5	9,2	10	4	91,88	101						
M10x1	1,00	90	7,0	5,5	9,0	10	3	49,17	100	79,59	100				
M10x1	1,00	90	7,0	5,5	9,0	10	4					101,10	102	89,44	102
M10x1,25	1,25	100	7,0	5,5	8,8	16	3	121,90	102						
M12x1	1,00	100	9,0	7,0	11,0	11	4	62,21	120	93,36	121			102,90	120
M12x1,25	1,25	100	9,0	7,0	10,8	15	4	97,18	122						
M12x1,5	1,50	100	9,0	7,0	10,5	15	4	59,87	124	91,25	120				
M12x1,5	1,50	100	9,0	7,0	10,5	15	5					114,50	124	99,20	124
M14x1,5	1,50	100	11,0	9,0	12,5	15	5					140,90	144	126,20	144
M14x1,5	1,50	100	11,0	9,0	12,5	15	4	73,86	140	105,60	140				
M16x1,5	1,50	100	12,0	9,0	14,5	15	4	90,19	160	122,90	160				
M16x1,5	1,50	100	12,0	9,0	14,5	15	5					160,10	162	147,30	162
M18x1,5	1,50	110	14,0	11,0	16,5	17	5							180,10	182
M18x1,5	1,50	110	14,0	11,0	16,5	17	4	110,20	180	156,80	182				
M20x1,5	1,50	125	16,0	12,0	18,5	17	5					239,50	202	221,50	202
M20x1,5	1,50	125	16,0	12,0	18,5	17	4	150,50	200	199,30	202				
M22x1,5	1,50	125	18,0	14,5	20,5	17	4	146,20	220						
M26x1,5	1,50	140	18,0	14,5	24,5	20	5	203,50	260						
M24x1,5	1,50	140	18,0	14,5	22,5	20	5	159,00	240						
M28x1,5	1,50	140	20,0	16,0	26,5	20	5	239,50	280						
M30x1,5	1,50	150	22,0	18,0	28,5	22	6	242,70	300						

Steel	6-20	6-25	6-25	6-25
Stainless steel	4-8	5-10	5-10	5-10
Cast iron	6-15	10-20	10-20	10-20
Non ferrous metals		12-25	12-25	12-25
Heat resistant alloys				
hardened materials				

Blind hole – Machine taps, right/left hand

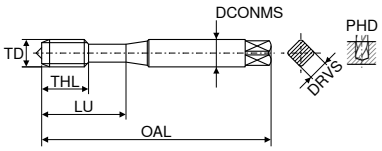
▲ LH = for left hand threads

MF | Salo-Rex

ST LH | ST

C 2–3 | C 2–3

ISO 2 6H | ISO 2 6H





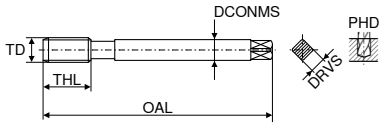


DIN 371 with reinforced shank

HSS-E
∢ 42°
≤ 750 N/mm²
≤ 3xD

HSS-E
∢ 42°
≤ 750 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 238 ... EUR	
	mm	mm	mm	mm	mm	mm	mm			
M2,5x0,35	0,35	50	2,8	2,1	2,15	5,0	15	2	84,78	**025**
M3x0,35	0,35	56	3,5	2,7	2,65	4,5	18	3	51,82	**030**
M3,5x0,35	0,35	56	4,0	3,0	3,15	5,0	20	3	71,22	**035**
M4x0,5	0,50	63	4,5	3,4	3,50	5,0	21	3	47,90	**040**
M5x0,5	0,50	70	6,0	4,9	4,50	5,0	25	3	47,90	**050**
M6x0,75	0,75	80	6,0	4,9	5,20	8,0	30	3	47,90	**060**
M8x0,75	0,75	80	8,0	6,2	7,20	8,0	30	3	53,09	**080**
M8x1	1,00	90	8,0	6,2	7,00	10,0	35	3	47,90	**082**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 601 ... EUR		U0 Article no. 22 186 ... EUR	
	mm	mm	mm	mm	mm	mm					
M6x0,75	0,75	80	4,5	3,4	5,2	8	3			47,37	**060**
M8x0,75	0,75	80	6,0	4,9	7,2	8	3			48,54	**080**
M8x1	1,00	90	6,0	4,9	7,0	10	3	77,26	**082**	44,09	**082**
M10x1	1,00	90	7,0	5,5	9,0	10	3	79,59	**100**	45,99	**100**
M12x1,5	1,50	100	9,0	7,0	10,5	15	4			54,79	**122**
M12x1	1,00	100	9,0	7,0	11,0	11	4	97,18	**120**	56,70	**120**
M14x1,5	1,50	100	11,0	9,0	12,5	15	4	105,00	**140**	73,12	**140**
M16x1,5	1,50	100	12,0	9,0	14,5	15	4	125,00	**160**	86,27	**160**
M18x1,5	1,50	110	14,0	11,0	16,5	17	4	145,20	**180**	112,30	**180**
M20x1,5	1,50	125	16,0	12,0	18,5	17	4	169,50	**200**	111,30	**200**
M22x1,5	1,50	125	18,0	14,5	20,5	17	4			125,00	**220**
M26x1,5	1,50	140	18,0	14,5	24,5	20	5			196,00	**260**
M24x1,5	1,50	140	18,0	14,5	22,5	20	5			134,60	**240**

Steel	**10-20**	**10-20**
Stainless steel		
Cast iron		
Non ferrous metals	**10-20**	**10-20**
Heat resistant alloys		
hardened materials		

6

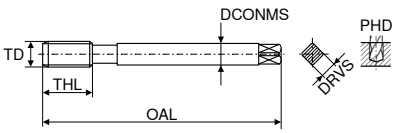
Blind hole – Machine taps, right hand

MF | SL

ST

C
2–3

ISO 2
6H



DIN 374 with reduced shank



HSS-E
15°
≤ 750 N/mm²
≤ 2xD

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 182 ...	
	mm	mm	mm	mm	mm	mm		EUR	
M6x0,75	0,75	80	4,5	3,4	5,2	13	3	48,74	**062**
M8x0,75	0,75	80	6,0	4,9	7,2	14	3	49,17	**082**
M8x1	1,00	90	6,0	4,9	7,0	17	3	44,94	**084**
M10x1	1,00	90	7,0	5,5	9,0	18	3	47,37	**102**
M10x0,75	0,75	90	7,0	5,5	9,2	18	3	78,31	**100**
M10x1,25	1,25	100	7,0	5,5	8,8	22	3	67,51	**104**
M9x1	1,00	90	7,0	5,5	8,0	17	3	66,77	**090**
M11x1	1,00	90	8,0	6,2	10,0	18	3	75,04	**110**
M12x1,25	1,25	100	9,0	7,0	10,8	22	3	75,04	**122**
M12x1,5	1,50	100	9,0	7,0	10,5	22	3	55,32	**124**
M12x1	1,00	100	9,0	7,0	11,0	18	3	57,97	**120**
M14x1	1,00	100	11,0	9,0	13,0	18	4	76,51	**140**
M14x1,5	1,50	100	11,0	9,0	12,5	22	3	74,51	**144**
M16x1	1,00	100	12,0	9,0	15,0	18	4	90,19	**160**
M16x1,5	1,50	100	12,0	9,0	14,5	22	3	87,96	**162**
M15x1	1,00	100	12,0	9,0	14,0	18	4	100,40	**150**
M18x1,5	1,50	110	14,0	11,0	16,5	25	4	114,50	**182**
M18x2	2,00	125	14,0	11,0	16,0	26	3	181,30	**184**
M18x1	1,00	110	14,0	11,0	17,0	20	4	124,00	**180**
M20x1	1,00	125	16,0	12,0	19,0	20	4	126,20	**200**
M20x2	2,00	140	16,0	12,0	18,0	27	3	154,80	**204**
M20x1,5	1,50	125	16,0	12,0	18,5	25	4	113,40	**202**
M22x2	2,00	140	18,0	14,5	20,0	27	4	157,90	**224**
M24x1,5	1,50	140	18,0	14,5	22,5	27	4	139,90	**242**
M24x1	1,00	140	18,0	14,5	23,0	20	5	172,70	**240**
M24x2	2,00	140	18,0	14,5	22,0	27	4	163,20	**244**
M22x1,5	1,50	125	18,0	14,5	20,5	25	4	128,20	**222**
M25x1,5	1,50	140	18,0	14,5	23,5	28	4	233,20	**252**
M22x1	1,00	125	18,0	14,5	21,0	20	4	165,40	**220**
M27x1,5	1,50	140	20,0	16,0	25,5	28	4	202,40	**270**
M28x2	2,00	140	20,0	16,0	26,0	28	4	267,10	**282**
M27x2	2,00	140	20,0	16,0	25,0	28	4	228,90	**272**
M30x1,5	1,50	150	22,0	18,0	28,5	28	5	232,10	**302**
M32x1,5	1,50	150	22,0	18,0	30,5	28	6	267,10	**320**
M30x2	2,00	150	22,0	18,0	28,0	28	4	245,90	**304**
M33x2	2,00	160	25,0	20,0	31,0	30	4	323,20	**332**
M36x2	2,00	170	28,0	22,0	34,0	30	5	411,20	**362**
M36x3	3,00	200	28,0	22,0	33,0	42	4	385,70	**364**
M34x1,5	1,50	170	28,0	22,0	32,5	30	6	326,50	**340**

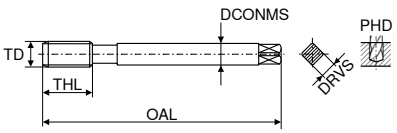
Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
hardened materials	

Continued on next page

Blind hole – Machine taps, right hand

MF | SL

ST | C 2–3 | ISO 2 6H





DIN 374 with reduced shank

HSS-E
15°
≤ 750 N/mm²
≤ 2xD

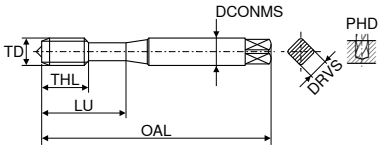
6

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 182 ...	EUR
	mm	mm	mm	mm	mm	mm			
M40x1,5	1,50	170	32,0	24,0	38,5	30	6	404,90	**400**
M42x3	3,00	200	32,0	24,0	39,0	45	4	518,20	**424**
M42x2	2,00	170	32,0	24,0	40,0	30	6	489,60	**422**
M45x1,5	1,50	180	36,0	29,0	43,5	32	6	479,00	**450**
M48x2	2,00	190	36,0	29,0	46,0	32	6	675,10	**482**
M48x3	3,00	225	36,0	29,0	45,0	50	5	685,70	**484**
M48x1,5	1,50	190	36,0	29,0	46,5	32	6	562,70	**480**
M45x3	3,00	200	36,0	29,0	42,0	45	5	661,30	**454**
M52x2	2,00	190	40,0	32,0	50,0	32	6	801,20	**522**

Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
hardened materials	

Blind hole – Machine taps, right hand

MF | Salo-Rex



DIN 371 with reinforced shank

NW	VA	VA
C	E	E
2–3	1,5–2	1,5–2
ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	vap.	TiN GS

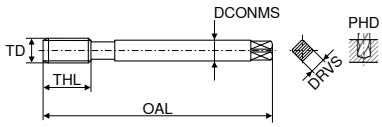


HSS-E
◁ 42°
≤ 500 N/mm²
≤ 3xD

HSS-E
◁ 42°
≤ 750 N/mm²
≤ 3xD

HSS-E
◁ 45°
≤ 900 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 176 ... EUR	
	mm	mm	mm	mm	mm	mm	mm			
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3	81,07	**040**
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3	62,21	**062**
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3	62,21	**060**
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3	62,21	**050**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 188 ... EUR		U0 Article no. 22 189 ... EUR		U0 Article no. 22 177 ... EUR	
	mm	mm	mm	mm	mm	mm							
M8x1	1,00	90	6	4,9	7,0	10	3	48,54	**081**	48,54	**082**	79,06	**084**
M8x0,75	0,75	80	6	4,9	7,2	8	3					65,38	**082**
M10x1	1,00	90	7	5,5	9,0	10	4			56,38	**100**	90,19	**102**
M10x1	1,00	90	7	5,5	9,0	10	3	50,55	**100**				
M12x1	1,00	100	9	7,0	11,0	11	4	61,79	**120**	63,79	**121**	104,40	**120**
M12x1,5	1,50	100	9	7,0	10,5	15	4	55,64	**122**				
M12x1,5	1,50	100	9	7,0	10,5	15	5			62,21	**120**	100,40	**124**
M14x1,5	1,50	100	11	9,0	12,5	15	5			77,26	**140**	128,20	**144**
M14x1,5	1,50	100	11	9,0	12,5	15	4	79,59	**140**				
M16x1,5	1,50	100	12	9,0	14,5	15	4	87,33	**160**				
M16x1,5	1,50	100	12	9,0	14,5	15	5			93,36	**160**	149,50	**162**
M18x1,5	1,50	110	14	11,0	16,5	17	5					182,30	**182**
M18x1,5	1,50	110	14	11,0	16,5	17	4	122,90	**180**				
M20x1,5	1,50	125	16	12,0	18,5	17	4	114,50	**200**				
M20x1,5	1,50	125	16	12,0	18,5	17	5			129,30	**200**	225,80	**202**
M26x1,5	1,50	140	18	14,5	24,5	20	6			251,20	**260**		
M28x1,5	1,50	140	20	16,0	26,5	20	6			293,60	**280**		
M30x1,5	1,50	150	22	18,0	28,5	22	6			290,40	**300**		

Steel			**5-12**
Stainless steel		**5-10**	**5-10**
Cast iron			
Non ferrous metals	**10-20**		
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

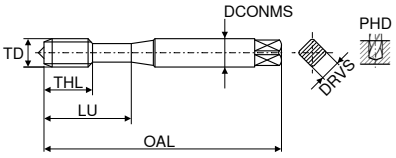
MF

UNI

C
2–3

ISO 2
6H

TiN





DIN 374 with reinforced shank

HSS-PM
40°
≤ 1000 N/mm²
≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 047 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
M8x1	1,00	90	6	4,9	7,0	10	35	3	21,50	**081**
M10x1	1,00	90	7	5,5	9,0	10	35	4	28,02	**102**
M10x1,25	1,25	100	7	5,5	8,8	16	39	4	27,31	**104**
M12x1	1,00	100	9	7,0	11,0	11	40	4	31,89	**120**
M12x1,25	1,25	100	9	7,0	10,8	15	40	5	34,75	**122**
M12x1,5	1,50	100	9	7,0	10,5	15	40	5	30,88	**121**
M14x1	1,00	100	11	9,0	12,8	11	40	4	37,30	**140**
M14x1,5	1,50	100	11	9,0	12,5	15	40	5	36,58	**144**
M16x1,5	1,50	100	12	9,0	14,5	15	44	5	47,38	**162**
M18x1,5	1,50	110	14	11,0	16,5	17	44	5	61,65	**182**
M20x1,5	1,50	125	16	12,0	18,5	17	44	5	70,31	**202**
M22x1,5	1,50	125	18	14,5	20,5	17	44	5	77,44	**222**
M24x1,5	1,50	140	18	14,5	22,5	20	48	5	78,87	**242**
M24x2	2,00	140	18	14,5	22,0	20	48	5	91,81	**244**

Steel	**10-20**
Stainless steel	**8-15**
Cast iron	**20-25**
Non ferrous metals	**20-25**
Heat resistant alloys	
Hardened materials	

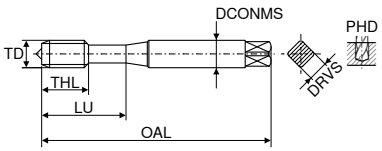
6

Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

MF

UNI	UNI	UNI NC	FE	FE-HF
C 2–3	C 2–3	E 1,5–2	C 2–3	C 2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	TiN	TiN GS		TiCN

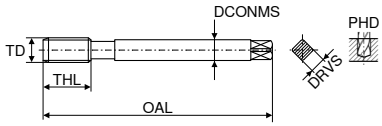




DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	◁ 45° ≤ 1000 N/mm² ≤ 3xD	◁ 35° ≤ 850 N/mm² ≤ 2,5xD	◁ 35° ≤ 1100 N/mm² ≤ 2,5xD
	T9	T9	T9	T9	T9
TD	Article no. 23 144 ...	Article no. 23 146 ...	Article no. 23 148 ...	Article no. 23 242 ...	Article no. 23 342 ...
	EUR	EUR	EUR	EUR	EUR
M4x0,5	15,49 040	22,52 040		20,07 040	
M6x0,75	16,51 062	26,19 062	38,31 062	20,07 062	34,85 062
M6x0,5	16,92 060	26,19 060	38,31 060	20,48 060	
M5x0,5	15,49 050	22,52 050	29,86 050	20,48 050	28,63 050

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 145 ... EUR		T9 Article no. 23 147 ... EUR		T9 Article no. 23 149 ... EUR		T9 Article no. 23 243 ... EUR		T9 Article no. 23 343 ... EUR	
	mm	mm	mm	mm	mm	mm											
M4x0,5	0,50	63	2,8	2,1	3,5	5	3	15,08	040								
M5x0,5	0,50	70	3,5	2,7	4,5	5	3	15,08	050								
M6x0,75	0,75	80	4,5	3,4	5,2	8	3	16,10	062								
M8x0,75	0,75	80	6,0	4,9	7,2	8	3	18,24	082	27,92	082	40,86	082	23,23	082		
M8x1	1,00	90	6,0	4,9	7,0	10	3	13,35	084	26,19	084	38,31	084	21,81	084	35,05	084
M8x0,5	0,50	80	6,0	8,0	7,5	6	3							44,63	080		
M8x0,75	0,75	80	6,0	4,9	7,0	8	3									41,98	082
M10x1,25	1,25	100	7,0	5,5	8,8	16	3	15,49	104	37,09	104			42,29	104		
M10x0,75	0,75	90	7,0	5,5	9,2	10	4	29,35	100	42,59	100			48,91	100		
M10x1	1,00	90	7,0	5,5	9,0	10	4					45,04	102				
M10x1	1,00	90	7,0	5,5	9,0	10	3	13,96	102	29,35	102			25,58	102	40,25	102
M12x1,25	1,25	100	9,0	7,0	10,8	15	4	22,11	122	41,78	122			47,49	122		
M12x1,5	1,50	100	9,0	7,0	10,5	15	4	16,51	124	33,22	124			28,33	124	44,84	124
M12x1,5	1,50	100	9,0	7,0	10,5	15	5					48,61	124				
M12x1	1,00	100	9,0	7,0	11,0	11	4	18,75	120	34,44	120	51,26	120	29,45	120	46,06	120
M14x1	1,00	100	11,0	9,0	13,0	11	4	24,66	140	44,94	140			47,49	140		
M14x1,5	1,50	100	11,0	9,0	12,5	15	5					62,46	144				
M14x1,5	1,50	100	11,0	9,0	12,5	15	4	22,42	144	41,78	144			34,85	144	56,76	144
M16x1	1,00	100	12,0	9,0	15,0	12	4	26,49	160	49,32	160			55,84	160		
M16x1,5	1,50	100	12,0	9,0	14,5	15	5					69,60	162				
M16x1,5	1,50	100	12,0	9,0	14,5	15	4	25,68	162	49,32	162			44,43	162	65,83	162
M18x1,5	1,50	110	14,0	11,0	16,5	17	4	35,56	182	57,47	182			57,47	182		
M18x1,5	1,50	110	14,0	11,0	16,5	17	5					88,25	182				
M20x1,5	1,50	125	16,0	12,0	18,5	17	4	32,71	202	73,16	202			64,20	202		
M20x1,5	1,50	125	16,0	12,0	18,5	17	5					115,20	202				
M24x1,5	1,50	140	18,0	14,5	22,5	20	5	52,99	242	86,82	242			86,62	242		
M22x1,5	1,50	125	18,0	14,5	20,5	17	4	48,61	222	81,32	222			74,29	222		

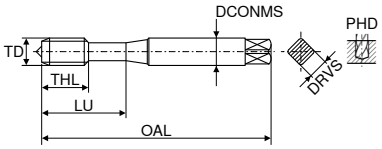
Steel	2-25	5-45	5-45	5-25	5-45
Stainless steel	2-8	5-15	5-15		
Cast iron	5-20	10-25	10-25		
Non ferrous metals	10-20	15-40	15-40		
Heat resistant alloys					
Hardened materials					

Blind hole – Machine taps, right hand

MF

VA
C
2–3
ISO 2
6H

VA
E
1,5–2
ISO 2
6H
TiN



DIN 371 with reinforced shank

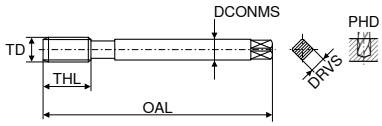




HSS-PM
∢ 40°
≤ 1200 N/mm²
≤ 2,5xD

HSS-E
∢ 45°
≤ 1200 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 442 ... EUR	
	mm	mm	mm	mm	mm	mm	mm			
M6x0,75	0,75	80	6	4,9	5,2	8	30	3	32,00	**062**
M5x0,5	0,50	70	6	4,9	4,5	5	25	3	27,21	**050**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 447 ... EUR		T9 Article no. 23 443 ... EUR	
	mm	mm	mm	mm	mm	mm					
M8x1	1,00	90	6	4,9	7,0	10	3	34,75	**084**	32,00	**084**
M8x0,75	0,75	80	6	4,9	7,2	8	3			34,14	**082**
M10x1	1,00	90	7	5,5	9,0	10	4	36,99	**102**	35,97	**102**
M12x1,5	1,50	100	9	7,0	10,5	15	5	44,84	**124**	40,56	**124**
M12x1	1,00	100	9	7,0	11,0	11	4	47,79	**120**	42,19	**120**
M14x1,5	1,50	100	11	9,0	12,5	15	5	57,88	**144**	51,46	**144**
M16x1,5	1,50	100	12	9,0	14,5	15	5	68,17	**162**	59,10	**162**
M18x1,5	1,50	110	14	11,0	16,5	17	5	84,17	**182**		
M20x1,5	1,50	125	16	12,0	18,5	17	5	91,61	**202**		

Steel		
Stainless steel	**5-10**	**8-20**
Cast iron		
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

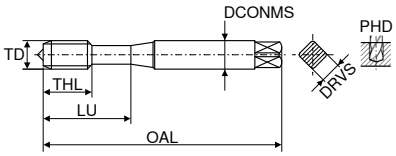
MF | TWIN

ST | HR | HT

C 2–3 | C 2–3 | D 4–5

ISO 2X 6HX | ISO 2X 6HX | ISO 2X 6HX

nitr. | OSM









DIN 371 with reinforced shank

HSS-E | HSS-E | Solid carbide

0° ≤ 750 N/mm² ≤ 2xD | 0° ≤ 1400 N/mm² ≤ 2xD | 0° ≤ 63 HRC ≤ 1,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 144 ...		U0 Article no. 22 146 ...		U0 Article no. 22 817 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
M3x0,35	0,35	56	3,5	2,7	2,65	8	18	3	43,02	**030**				
M4x0,5	0,50	63	4,5	3,4	3,50	10	21	3	41,43	**040**	45,99	**040**		
M5x0,5	0,50	70	6,0	4,9	4,50	11	25	3	41,43	**050**	45,99	**050**		
M6x0,5	0,50	80	6,0	4,9	5,50	13	30	3	41,43	**060**	45,99	**060**		
M6x0,75	0,75	80	6,0	4,9	5,20	13	30	3	41,43	**062**	45,99	**062**		
M8x1	1,00	90	8,0	6,2	7,00	17	35	3	41,43	**084**				
M8x1	1,00	90	8,0	6,2	7,10	15	35	5					342,80	**080**
M10x1	1,00	100	10,0	8,0	9,10	18	38	5					437,50	**100**
M10x1	1,00	90	10,0	8,0	9,00	18	35	4	41,43	**104**				
M12x1,5	1,50	110	12,0	9,0	10,60	21	41	5					507,00	**120**
M14x1,5	1,50	110	14,0	11,0	12,60	24	44	6					595,20	**140**
M16x1,5	1,50	110	16,0	12,0	14,60	24	44	6					676,70	**160**

Steel	**10-20**	**6-15**	
Stainless steel			
Cast iron		**6-15**	
Non ferrous metals	**10-20**		
Heat resistant alloys		**3-5**	
Hardened materials			**1-3**

DIN 374 can be found on the next page

Through hole / Blind hole – Machine taps, right hand

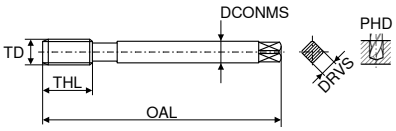
MF | TWIN

ST | HR | GG

C 2–3

ISO 2X 6HX

nitr.





DIN 374 with reduced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

HSS-E
0°
≤ 1400 N/mm²
≤ 2xD

HSS-E
0°
≤ 1050 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 171 ...		U0 Article no. 22 209 ...		U0 Article no. 22 173 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
M4x0,5	0,50	63	2,8	2,1	3,5	10	3	37,73	042				
M5x0,5	0,50	70	3,5	2,7	4,5	11	3	45,25	050			42,07	050
M6x0,75	0,75	80	4,5	3,4	5,2	13	3	40,80	062			45,99	062
M6x0,5	0,50	80	4,5	3,4	5,5	13	3	42,07	060			52,03	060
M8x0,75	0,75	80	6,0	4,9	7,2	14	3	46,31	082			81,07	080
M8x1	1,00	90	6,0	4,9	7,0	17	3	37,20	084	45,99	082	81,07	082
M10x1	1,00	90	7,0	5,5	9,0	18	4	38,57	104	45,99	100	45,25	100
M10x1,25	1,25	100	7,0	5,5	8,8	22	3	45,99	106				
M10x0,75	0,75	90	7,0	5,5	9,2	18	4	59,87	102				
M11x1	1,00	90	8,0	6,2	10,0	18	4	68,04	110				
M12x1	1,00	100	9,0	7,0	11,0	18	4	44,94	122			52,03	120
M12x1,25	1,25	100	9,0	7,0	10,8	22	4	55,32	124				
M12x1,5	1,50	100	9,0	7,0	10,5	22	4	44,94	126	55,32	120	50,02	124
M14x1	1,00	100	11,0	9,0	13,0	18	4	68,04	140			77,26	140
M14x1,25	1,25	100	11,0	9,0	12,8	22	4	62,21	142				
M14x1,5	1,50	100	11,0	9,0	12,5	22	4	64,32	144	71,22	140	70,58	142
M16x1	1,00	100	12,0	9,0	15,0	18	5	70,58	160				
M16x1,5	1,50	100	12,0	9,0	14,5	22	4	63,26	162	77,26	160	73,12	160
M18x1	1,00	110	14,0	11,0	17,0	20	5	91,25	180				
M18x2	2,00	125	14,0	11,0	16,0	26	4	101,70	184				
M18x1,5	1,50	110	14,0	11,0	16,5	25	4	84,78	182	91,88	180	97,93	180
M20x1	1,00	125	16,0	12,0	19,0	20	5	101,70	200				
M20x2	2,00	140	16,0	12,0	18,0	27	4	127,20	204				
M20x1,5	1,50	125	16,0	12,0	18,5	25	4	92,62	202	116,60	200	102,40	200
M24x2	2,00	140	18,0	14,5	22,0	27	4	125,00	244				
M22x2	2,00	140	18,0	14,5	20,0	27	4	140,90	224				
M22x1	1,00	125	18,0	14,5	21,0	20	5	143,10	220				
M24x1	1,00	140	18,0	14,5	23,0	20	6	156,80	240				
M26x1,5	1,50	140	18,0	14,5	24,5	28	4	157,90	260			154,80	260
M24x1,5	1,50	140	18,0	14,5	22,5	27	4	111,30	242			125,00	240
M25x1,5	1,50	140	18,0	14,5	23,5	28	4	202,40	250				
M22x1,5	1,50	125	18,0	14,5	20,5	25	4	99,20	222			110,20	220
M28x1,5	1,50	140	20,0	16,0	26,5	28	5					183,40	280
M27x2	2,00	140	20,0	16,0	25,0	28	4	172,70	274				
M27x1,5	1,50	140	20,0	16,0	25,5	28	5	183,40	272				
M30x2	2,00	150	22,0	18,0	28,0	28	4	212,00	302				
M32x2	2,00	150	22,0	18,0	30,0	28	5	294,60	322				
M32x1,5	1,50	150	22,0	18,0	30,5	28	6	212,00	320				
M30x1,5	1,50	150	22,0	18,0	28,5	28	5	177,00	300			199,30	300
M33x2	2,00	160	25,0	20,0	31,0	30	5	239,50	332				
M36x2	2,00	170	28,0	22,0	34,0	30	5	297,80	362				
M36x1,5	1,50	170	28,0	22,0	34,5	30	6	265,00	360				
M35x1,5	1,50	170	28,0	22,0	33,5	30	6	326,50	350				
M42x1,5	1,50	170	32,0	24,0	40,5	30	6	390,00	420				
M42x3	3,00	200	32,0	24,0	39,0	45	5	472,70	424				
M40x2	2,00	170	32,0	24,0	38,0	30	6	344,50	402				
M50x1,5	1,50	190	36,0	29,0	48,5	32	8	498,10	500				
M52x1,5	1,50	190	40,0	32,0	50,5	32	8	569,10	520				

Steel	10-20	6-15	
Stainless steel			
Cast iron		6-15	10-20
Non ferrous metals	10-20		
Heat resistant alloys		3-5	
Hardened materials			

6

Through hole / Blind hole – Machine taps, right/left hand

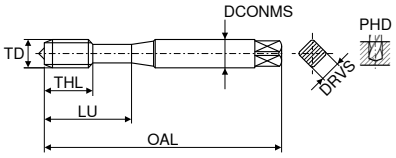
▲ ES = extra short

▲ LH = for left hand threads

MF | TWIN

ST ES | C 2–3 | ISO 2X 6HX

ST LH/ES | C 2–3 | ISO 2X 6HX



DIN 2181 with reinforced shank





HSS-E
0°
≤ 750 N/mm²
≤ 2xD

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 179 ...		U0 Article no. 22 200 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M2,5x0,35	0,35	40	2,8	2,1	2,15	9		3	61,15	025		
M3x0,35	0,35	40	3,5	2,7	2,65	8	18	3	39,74	030		
M4x0,35	0,35	45	4,5	3,4	3,65	9	22	3	56,91	040		
M4x0,5	0,50	45	4,5	3,4	3,50	9	22	3	39,74	042		
M4,5x0,5	0,50	50	6,0	4,9	4,00	10	24	3	66,13	045		
M5x0,5	0,50	50	6,0	4,9	4,50	11	25	3	39,74	050		
M6x0,5	0,50	56	6,0	4,9	5,50	12	27	3	41,76	060		
M6x0,75	0,75	56	6,0	4,9	5,20	12	27	3	39,74	062	55,32	062
M7x0,75	0,75	56	6,0	4,9	6,20	14		3	44,72	070		
M8x0,5	0,50	56	6,0	4,9	7,50	14		4	55,32	080		
M8x0,75	0,75	56	6,0	4,9	7,20	14		3	44,72	082		
M8x1	1,00	63	6,0	4,9	7,00	17		3	39,74	084	55,32	084
M9x1	1,00	63	7,0	5,5	8,00	17		4	55,32	090		
M10x0,75	0,75	63	7,0	5,5	9,20	18		4	58,50	100		
M10x1	1,00	63	7,0	5,5	9,00	18		4	41,76	102	56,91	102
M10x1,25	1,25	70	7,0	5,5	8,80	22		3	53,52	104		
M11x1	1,00	63	8,0	6,2	10,00	18		4	64,65	110		
M12x1	1,00	70	9,0	7,0	11,00	18		4	49,17	120	68,04	120
M12x1,25	1,25	70	9,0	7,0	10,80	20		4	55,32	122		
M12x1,5	1,50	70	9,0	7,0	10,50	20		4	47,90	124	66,13	124
M13x1	1,00	70	11,0	9,0	12,00	18		4	72,59	130		
M14x1	1,00	70	11,0	9,0	13,00	18		4	64,65	140		
M14x1,25	1,25	70	11,0	9,0	12,80	20		4	64,65	142		
M14x1,5	1,50	70	11,0	9,0	12,50	20		4	61,15	144	87,33	144
M15x1	1,00	70	12,0	9,0	14,00	18		5	78,31	150		
M16x1	1,00	70	12,0	9,0	15,00	18		5	73,86	160		
M16x1,5	1,50	70	12,0	9,0	14,50	20		4	68,04	162	95,91	162
M18x1	1,00	80	14,0	11,0	17,00	18		5	95,91	180		
M18x1,5	1,50	80	14,0	11,0	16,50	22		4	79,59	182	113,40	182
M18x2	2,00	80	14,0	11,0	16,00	22		4	95,91	184		
M20x1,5	1,50	80	16,0	12,0	18,50	22		4	93,36	202	129,30	202
M20x2	2,00	80	16,0	12,0	18,00	22		4	101,10	204		

Steel	10-20	10-20
Stainless steel		
Cast iron		
Non ferrous metals	10-20	10-20
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

MF | Spanlos

EC | EC SN

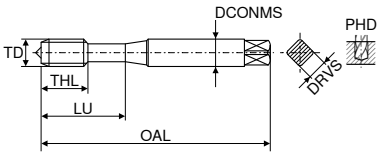


ISO 2X 6HX | ISO 2X 6HX

TiN | TiN





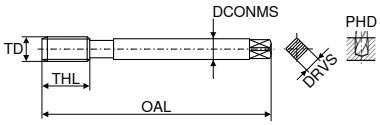


DIN 2174 with reinforced shank

HSS-E
≤ 1100 N/mm²
≤ 1,5xD

HSS-E
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 204 ...		U0 Article no. 22 205 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
M4x0,5	0,50	63	4,5	3,4	3,8	10	21		87,33	**040**		
M4x0,5	0,50	63	4,5	3,4	3,8	10	21	4			98,03	**040**
M5x0,5	0,50	70	6,0	4,9	4,8	11	25		74,51	**050**		
M5x0,5	0,50	70	6,0	4,9	4,8	11	25	4			87,33	**050**
M6x0,5	0,50	80	6,0	4,9	5,8	13	30		87,33	**060**		
M6x0,5	0,50	80	6,0	4,9	5,8	13	30	5			98,03	**060**
M6x0,75	0,75	80	6,0	4,9	5,7	13	30		69,20	**062**		
M6x0,75	0,75	80	6,0	4,9	5,7	13	30	4			78,00	**062**
M8x0,75	0,75	80	8,0	6,2	7,7	14	30		91,25	**080**		
M8x0,75	0,75	80	8,0	6,2	7,7	14	30	5			87,33	**080**
M8x1	1,00	90	8,0	6,2	7,6	17	35		84,57	**082**		
M8x1	1,00	90	8,0	6,2	7,6	17	35	5			92,62	**082**
M10x1	1,00	90	10,0	8,0	9,6	18	35		78,00	**100**		
M10x1	1,00	90	10,0	8,0	9,6	18	35	5			86,05	**100**



DIN 2174 with reduced shank

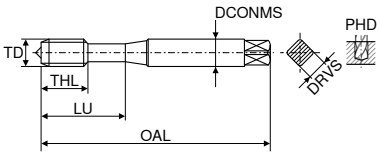
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 196 ...		U0 Article no. 22 197 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
M12x1	1,0	100	9	7	11,60	18		89,97	**120**		
M12x1	1,0	100	9	7	11,60	18	6			99,93	**120**
M12x1,5	1,5	100	9	7	11,35	22		90,60	**124**		
M12x1,5	1,5	100	9	7	11,35	22	6			101,30	**124**
M14x1,5	1,5	100	11	9	13,35	22		124,00	**140**		
M14x1,5	1,5	100	11	9	13,35	22	6			129,30	**140**
M16x1,5	1,5	100	12	9	15,35	22		128,20	**160**		
M16x1,5	1,5	100	12	9	15,35	22	6			146,20	**160**
M20x1,5	1,5	125	16	12	19,35	25		185,40	**200**		
M20x1,5	1,5	125	16	12	19,35	25	6			204,60	**200**

Steel	**8-30**	**8-30**
Stainless steel	**8-15**	**8-15**
Cast iron		
Non ferrous metals	**12-25**	**12-25**
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

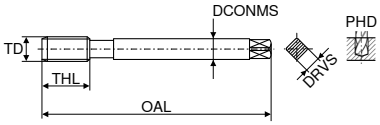
MF



DIN 2174 with reinforced shank

	UNI	UNI SN
	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX
	TiN	TiN
		
	HSS-E ≤ 850 N/mm² ≤ 3xD	HSS-E ≤ 850 N/mm² ≤ 3xD
	T9	T9
	Article no. 23 840 ...	Article no. 23 842 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	EUR		EUR	
	mm	mm	mm	mm	mm	mm	mm					
M4x0,5	0,50	63	4,5	3,4	3,80	10	21		39,13	**040**		
M4x0,5	0,50	63	4,5	3,4	3,80	10	21	4			43,92	**040**
M5x0,5	0,50	70	6,0	4,9	4,80	11	25		33,83	**050**		
M5x0,5	0,50	70	6,0	4,9	4,80	11	25	4			39,54	**050**
M6x0,5	0,50	80	6,0	4,9	5,80	13	30		39,13	**060**		
M6x0,5	0,50	80	6,0	4,9	5,80	13	30	5			44,12	**060**
M8x1	1,00	90	8,0	6,2	7,60	17	35		37,70	**084**		
M8x1	1,00	90	8,0	6,2	7,60	17	35	5			41,98	**084**
M10x1	1,00	90	10,0	8,0	9,60	18	35		42,90	**102**		
M10x1	1,00	90	10,0	8,0	9,60	18	35	5			46,47	**102**
M10x1,25	1,25	100	10,0	8,0	9,45	18	39		51,05	**104**		
M10x1,25	1,25	100	10,0	8,0	9,45	18	39	5			56,76	**104**



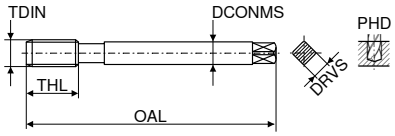
DIN 2174 with reduced shank

								T9		T9	
								Article no. 23 841 ...		Article no. 23 843 ...	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	EUR		EUR	
	mm	mm	mm	mm	mm	mm					
M12x1,25	1,25	100	9	7	11,45	22		54,82	**122**		
M12x1,25	1,25	100	9	7	11,45	22	6			61,96	**122**
M12x1,5	1,50	100	9	7	11,35	22		49,63	**124**		
M12x1,5	1,50	100	9	7	11,35	22	6			55,33	**124**
M14x1,5	1,50	100	11	9	13,35	22		61,55	**144**		
M14x1,5	1,50	100	11	9	13,35	22	6			68,68	**144**
M16x1,5	1,50	100	12	9	15,35	22		70,11	**162**		
M16x1,5	1,50	100	12	9	15,35	22	6			80,09	**162**

Steel	**10-50**	**10-50**
Stainless steel	**5-20**	**5-20**
Cast iron		
Non ferrous metals	**10-50**	**10-50**
Heat resistant alloys	**5-15**	**5-15**
Hardened materials		

Through hole – Machine taps, right hand

G | Stabil



DIN 5156 with reduced shank

	UNI	UNI	ST	VA
	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 228	ISO 228	ISO 228	ISO 228
	nitr. + vap.	TiN		nitr.
				
	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 750 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 900 N/mm² ≤ 4xD
	U0	U0	U0	U0
	Article no. 22 632 ...	Article no. 22 630 ...	Article no. 22 346 ...	Article no. 22 352 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm									
1/8-28	0,907	90	7	5,5	8,80	18	3	59,03	**012**	79,59	**012**	44,72	**012**	56,91	**012**
1/4-19	1,337	100	11	9,0	11,80	22	3	79,06	**025**	105,00	**025**	60,51	**025**	74,51	**025**
3/8-19	1,337	100	12	9,0	15,25	22	3	98,56	**037**	122,90	**037**	72,59	**037**	92,62	**037**
1/2-14	1,814	125	16	12,0	19,00	25	4	127,20	**050**	188,70	**050**	99,20	**050**	122,90	**050**
3/4-14	1,814	140	20	16,0	24,50	28	4	202,40	**075**			159,00	**075**	182,30	**075**
1-11	2,309	160	25	20,0	30,75	30	4	313,70	**100**			227,90	**100**	278,70	**100**

Steel	**6-20**	**6-25**	**10-20**	
Stainless steel	**4-8**	**5-10**		**5-10**
Cast iron	**6-15**	**10-20**		
Non ferrous metals		**12-25**	**10-20**	
Heat resistant alloys				
Hardened materials				

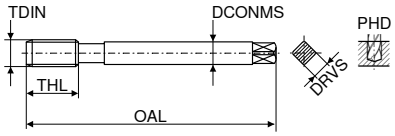
6

Through hole – Machine taps, right hand

G

UNI
B
4–5
ISO 228
nitr. + vap.

UNI
B
4–5
ISO 228
TiN



DIN 5156 with reduced shank





HSS-E
0°
≤ 1100 N/mm²
≤ 3xD

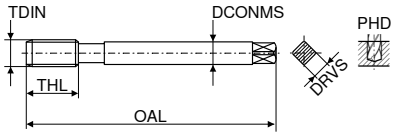
HSS-E
0°
≤ 1100 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 161 ...		T9 Article no. 23 160 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
1/8-28	0,907	90	7	5,5	8,80	18	3	15,79	**012**	29,14	**012**
1/4-19	1,337	100	11	9,0	11,80	22	3	21,30	**025**	38,52	**025**
3/8-19	1,337	100	12	9,0	15,25	22	3	26,09	**037**	45,35	**037**
1/2-14	1,814	125	16	12,0	19,00	25	4	36,07	**050**	69,60	**050**
3/4-14	1,814	140	20	16,0	24,50	28	4	70,62	**075**	91,10	**075**
1-11	2,309	160	25	20,0	30,75	30	4	77,95	**100**	168,10	**100**

Steel	**2-25**	**5-45**
Stainless steel	**2-8**	**5-15**
Cast iron	**5-20**	**10-25**
Non ferrous metals	**10-20**	**15-40**
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

G | Salo-Rex



DIN 5156 with reduced shank

	UNI	UNI	UNI	UNI	UNI
	C 2–3	C 2–3	E 1,5–2	E 1,5–2	E 1,5–2
	ISO 228	ISO 228	ISO 228	ISO 228	ISO 228 +0,05
	vap.	TiN	vap.	TiN	vap.
					
	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD
	U0	U0	U0	U0	U0
	Article no. 22 633 ...	Article no. 22 634 ...	Article no. 22 635 ...	Article no. 22 636 ...	Article no. 22 639 ...
	EUR	EUR	EUR	EUR	EUR

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes									
	mm	mm	mm	mm	mm	mm										
1/8-28	0,907	90	7	5,5	8,80	10	3	59,03	**012**	82,88	**012**					
1/8-28	0,907	90	7	5,5	8,80	10	4					60,51	**012**	82,88	**012**	79,59	**012**
1/4-19	1,337	100	11	9,0	11,80	15	4	82,88	**025**	103,80	**025**					
1/4-19	1,337	100	11	9,0	11,80	15	5					80,23	**025**	103,80	**025**	105,00	**025**
3/8-19	1,337	100	12	9,0	15,25	15	4	101,70	**037**	146,20	**037**					
3/8-19	1,337	100	12	9,0	15,25	15	5					99,20	**037**	146,20	**037**	130,30	**037**
1/2-14	1,814	125	16	12,0	19,00	17	4	134,60	**050**	209,90	**050**					
1/2-14	1,814	125	16	12,0	19,00	17	5					129,30	**050**	203,50	**050**	167,40	**050**
5/8-14	1,814	125	18	14,5	21,00	17	4	165,40	**062**								
5/8-14	1,814	125	18	14,5	21,00	17	5							234,20	**062**		
3/4-14	1,814	140	20	16,0	24,50	20	4	207,70	**075**								
3/4-14	1,814	140	20	16,0	24,50	20	5									254,40	**075**
7/8-14	1,814	150	22	18,0	28,25	22	5	286,10	**087**								
1-11	2,309	160	25	20,0	30,75	24	5	315,90	**100**								
1-11	2,309	160	25	20,0	30,75	24	6									387,90	**100**
1 1/4-11	2,309	170	32	24,0	39,50	25	6	508,70	**125**								
1 1/2-11	2,309	190	36	29,0	45,25	27	6	725,90	**150**								

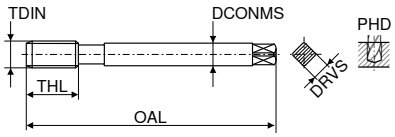
Steel	**6-20**	**6-25**	**6-25**	**6-25**	**6-25**
Stainless steel	**4-8**	**5-10**	**4-10**	**4-10**	**4-10**
Cast iron	**6-15**	**10-20**	**6-20**	**6-20**	**6-20**
Non ferrous metals		**12-25**	**12-25**	**12-25**	**12-25**
Heat resistant alloys					
Hardened materials					

6

Blind hole – Machine taps, right hand

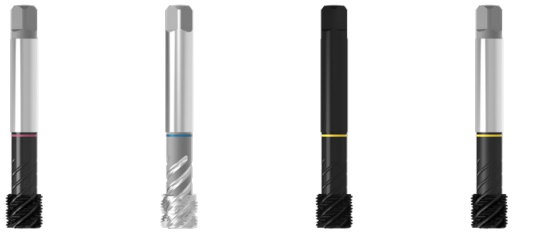
▲ CNC = for synchronised CNC machining with minimum length compensation chuck

G | Salo-Rex



DIN 5156 with reduced shank

UNI CNC	ST	VA	VA
E 1,5–2	C 2–3	E 1,5–2	E 1,5–2
ISO 228	ISO 228	ISO 228	ISO 228
TiN GS		vap.	TiN GS



HSS-E
45°
≤ 1100 N/mm²
≤ 3xD

HSS-E
42°
≤ 750 N/mm²
≤ 3xD

HSS-E
42°
≤ 900 N/mm²
≤ 3xD

HSS-E
45°
≤ 900 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 624 ... EUR		U0 Article no. 22 354 ... EUR		U0 Article no. 22 355 ... EUR		U0 Article no. 22 358 ... EUR	
	mm	mm	mm	mm	mm	mm									
1/8-28	0,907	90	7	5,5	8,80	10	3			50,55	**012**			96,44	**012**
1/8-28	0,907	90	7	5,5	8,80	10	4	94,74	**012**			60,51	**012**		
1/4-19	1,337	100	11	9,0	11,80	15	4			70,58	**025**				
1/4-19	1,337	100	11	9,0	11,80	15	5	124,00	**025**			80,23	**025**	125,00	**025**
3/8-19	1,337	100	12	9,0	15,25	15	4			86,27	**037**				
3/8-19	1,337	100	12	9,0	15,25	15	5	147,30	**037**			99,20	**037**	149,50	**037**
1/2-14	1,814	125	16	12,0	19,00	17	4			111,30	**050**				
1/2-14	1,814	125	16	12,0	19,00	17	5	222,60	**050**			126,20	**050**	225,80	**050**
5/8-14	1,814	125	18	14,5	21,00	17	5					165,40	**062**		
3/4-14	1,814	140	20	16,0	24,50	20	4			177,00	**075**				
3/4-14	1,814	140	20	16,0	24,50	20	5					212,00	**075**		
1-11	2,309	160	25	20,0	30,75	24	5			269,20	**100**				
1-11	2,309	160	25	20,0	30,75	24	6					311,60	**100**		

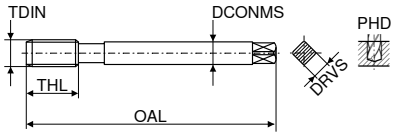
Steel	**6-25**	**10-20**		**5-12**
Stainless steel	**5-10**		**5-10**	**5-10**
Cast iron	**10-20**			
Non ferrous metals	**12-25**	**10-20**		
Heat resistant alloys				
Hardened materials				

Blind hole – Machine taps, right hand

G

UNI | C 2–3 | ISO 228 | vap.

UNI | C 2–3 | ISO 228 | TiN



DIN 5156 with reduced shank





6

HSS-E
◁ 35°
≤ 1100 N/mm²
≤ 2,5xD

HSS-E
◁ 35°
≤ 1100 N/mm²
≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 163 ...	EUR	T9 Article no. 23 162 ...	EUR
	mm	mm	mm	mm	mm	mm					
1/8-28	0,907	90	7	5,5	8,80	10	3	16,51	**012**	30,37	**012**
1/4-19	1,337	100	11	9,0	11,80	15	4	23,54	**025**	41,78	**025**
3/8-19	1,337	100	12	9,0	15,25	15	4	34,24	**037**	49,32	**037**
1/2-14	1,814	125	16	12,0	19,00	17	4	44,12	**050**	74,29	**050**
3/4-14	1,814	140	20	16,0	24,50	20	4	67,66	**075**	95,38	**075**
1-11	2,309	160	25	20,0	30,75	24	5	94,16	**100**	181,40	**100**

Steel	**2-25**	**5-45**
Stainless steel	**2-8**	**5-15**
Cast iron	**5-20**	**10-25**
Non ferrous metals	**10-20**	**15-40**
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

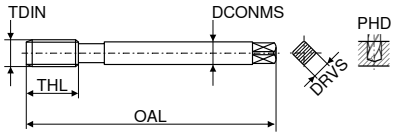
G | TWIN

ST | HR

C 2–3 | C 2–3

ISO 228 X | ISO 228 X

nitr.







DIN 5156 with reduced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

HSS-E
0°
≤ 1400 N/mm²
≤ 2xD

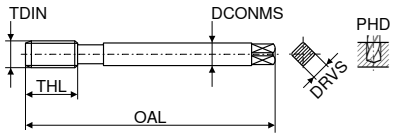
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 347 ...		U0 Article no. 22 339 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
1/16-28	0,907	90	6	4,9	6,80	17	3	52,35	**006**		
1/8-28	0,907	90	7	5,5	8,80	18	4	48,54	**012**	49,17	**012**
1/4-19	1,337	100	11	9,0	11,80	22	4	58,50	**025**	66,13	**025**
3/8-19	1,337	100	12	9,0	15,25	22	4	71,22	**037**	82,88	**037**
1/2-14	1,814	125	16	12,0	19,00	25	4	97,93	**050**	114,50	**050**
3/4-14	1,814	140	20	16,0	24,50	28	4	149,50	**075**	180,10	**075**
1-11	2,309	160	25	20,0	30,75	30	5	228,90	**100**	245,90	**100**
1 1/8-11	2,309	170	28	22,0	35,50	30	5	321,20	**112**	347,60	**112**
1 1/4-11	2,309	170	32	24,0	39,50	30	6	379,40	**125**	409,00	**125**
1 3/8-11	2,309	180	36	29,0	41,75	32	6	463,10	**137**	508,70	**137**
1 1/2-11	2,309	190	36	29,0	45,25	32	6	505,50	**150**	567,00	**150**
1 3/4-11	2,309	190	40	32,0	51,00	32	6			765,10	**175**

Steel	**10-20**	**6-15**
Stainless steel		
Cast iron		**6-15**
Non ferrous metals	**10-20**	
Heat resistant alloys		**3-5**
Hardened materials		

Through hole / Blind hole – Machine thread formers, right hand

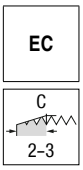
▲ SN = Thread formers with lubrication grooves

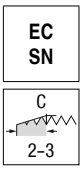
G | Spanlos



DIN 2189 with reduced shank

EC | EC SN





ISO 228 | ISO 228

TiN | TiN





HSS-E
≤ 1100 N/mm²
≤ 1,5xD

HSS-E
≤ 1100 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 360 ...		U0 Article no. 22 359 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
1/8-28	0,907	90	7	5,5	9,25	18		94,85	**012**		
1/8-28	0,907	90	7	5,5	9,25	18	5			107,00	**012**
1/4-19	1,337	100	11	9,0	12,55	22		121,90	**025**		
1/4-19	1,337	100	11	9,0	12,55	22	6			134,60	**025**
3/8-19	1,337	100	12	9,0	16,05	22		164,30	**037**		
3/8-19	1,337	100	12	9,0	16,05	22	6			184,40	**037**
1/2-14	1,814	125	16	12,0	20,10	25		219,30	**050**		
1/2-14	1,814	125	16	12,0	20,10	25	6			246,90	**050**

Steel	**8-30**	**8-30**
Stainless steel	**8-15**	**8-15**
Cast iron		
Non ferrous metals	**12-25**	**12-25**
Heat resistant alloys		
Hardened materials		

6

Through hole – Machine taps, right hand

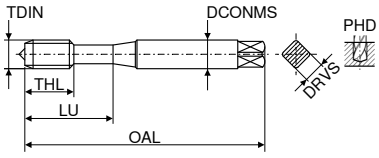
UNC | Stabil

UNI | VA | Ti

B 4–5 | B 4–5 | B 4–5

2B | 2B | 2BX

nitr. + vap. | nitr. | TiN



DIN 371 with reinforced shank



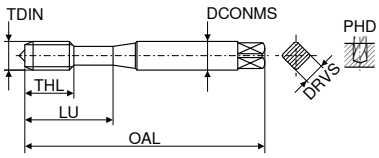
HSS-E | HSS-E | HSS-PM

0° | 0° | 0°

≤ 1100 N/mm² | ≤ 900 N/mm² | ≤ 44 HRC

≤ 4xD | ≤ 4xD | ≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 572 ...		U0 Article no. 22 250 ...		U0 Article no. 22 269 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
Nr. 2-56	0,454	45	2,8	2,1	1,85	7	12	2	77,26	**002**				
Nr. 4-40	0,635	56	3,5	2,7	2,35	11	18	2	42,49	**004**				
Nr. 4-40	0,635	56	3,5	2,7	2,35	11	18	3					68,04	**004**
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	37,94	**006**	36,24	**006**	59,87	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	35,92	**008**	35,61	**008**	61,15	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	40,49	**010**	35,61	**010**	61,79	**010**
Nr. 12-24	1,058	80	6,0	4,9	4,50	16	30	3	48,54	**012**				
1/4-20	1,270	80	7,0	5,5	5,10	17	30	3	43,76	**025**	45,25	**025**	65,38	**025**
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3	50,34	**031**	45,68	**031**	72,59	**031**
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3	55,95	**037**	46,31	**037**	84,78	**037**



DIN 371 with reinforced shank

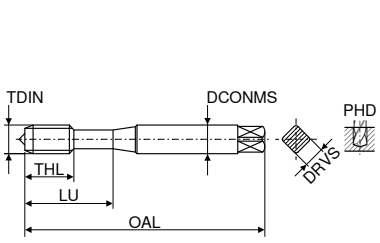
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 573 ...	
	mm	mm	mm	mm	mm	mm		EUR	
1/2-13	1,954	110	9	7,0	10,80	25	3	66,77	**050**
5/8-11	2,309	110	12	9,0	13,50	27	3	93,36	**062**
3/4-10	2,540	125	14	11,0	16,50	30	3	115,50	**075**
7/8-9	2,822	140	18	14,5	19,50	32	3	147,30	**087**
1-8	3,175	160	18	14,5	22,25	36	3	187,60	**100**

Steel	**6-20**		**2-5**
Stainless steel	**4-8**	**5-10**	
Cast iron	**6-15**		
Non ferrous metals			
Heat resistant alloys			**2-6**
Hardened materials			

Through hole – Machine taps, right hand

UNC

UNI	FE	FE-HF	VA
B 4–5	B 4–5	B 4–5	B 4–5
2B	2B	2B	2B
TiN		TiCN	nitr.

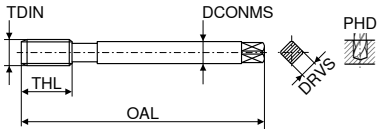


DIN 371 with reinforced shank



HSS-E	HSS-E	HSS-E	HSS-E
0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 1100 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD
T9	T9	T9	T9
Article no. 23 170 ...	Article no. 23 270 ...	Article no. 23 370 ...	Article no. 23 470 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	EUR		EUR		EUR		EUR	
	mm	mm	mm	mm	mm	mm	mm									
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2	19,06	**004**	23,23	**004**	27,00	**004**	15,79	**004**
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	18,34	**006**	21,60	**006**	26,19	**006**	14,67	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	18,34	**008**	21,09	**008**	26,19	**008**	14,27	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	19,06	**010**	23,23	**010**	27,21	**010**	15,79	**010**
1/4-20	1,270	80	7,0	5,5	5,20	17	30	3	25,07	**025**	23,74	**025**	37,80	**025**	16,92	**025**
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3	27,41	**031**	27,00	**031**	41,17	**031**	19,26	**031**
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3	32,61	**037**	30,67	**037**	48,61	**037**	21,81	**037**



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 171 ... EUR		T9 Article no. 23 271 ... EUR		T9 Article no. 23 371 ... EUR		T9 Article no. 23 471 ... EUR	
	mm	mm	mm	mm	mm	mm									
7/16-14	1,814	100	8	6,2	9,40	22	3	37,91	**043**	38,42	**043**	56,25	**043**	27,31	**043**
1/2-13	1,954	110	9	7,0	10,75	25	3	42,39	**050**	42,08	**050**	63,89	**050**	29,86	**050**
5/8-11	2,309	110	12	9,0	13,50	27	3	52,89	**062**	54,21	**062**	77,14	**062**	38,52	**062**
3/4-10	2,540	125	14	11,0	16,50	30	3	80,09	**075**	69,60	**075**	121,30	**075**	49,52	**075**

Steel	**5-45**	**5-25**	**5-45**	
Stainless steel	**5-15**			**3-10**
Cast iron	**10-25**			
Non ferrous metals	**15-40**			
Heat resistant alloys				
Hardened materials				

6

Blind hole – Machine taps, right hand

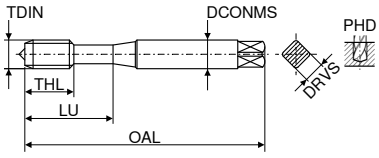
UNC | Salo-Rex

UNI | VA

C 2–3 | C 2–3

2B | 2B

vap. | vap.



DIN 371 with reinforced shank

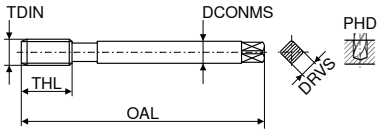




HSS-E
◁ 42°
≤ 1100 N/mm²
≤ 3xD

HSS-E
◁ 42°
≤ 900 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 582 ...		U0 Article no. 22 266 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
Nr. 2-56	0,454	45	2,8	2,1	1,85	4,5	12	2	61,79	**002**		
Nr. 4-40	0,635	56	3,5	2,7	2,35	6,0	18	2	38,57	**004**		
Nr. 6-32	0,794	56	4,0	3,0	2,85	7,0	20	3	33,81	**006**	36,98	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	8,0	21	3	36,24	**008**	39,53	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	10,0	25	3	37,94	**010**	42,07	**010**
1/4-20	1,270	80	7,0	5,5	5,10	13,0	30	3	40,80	**025**	43,02	**025**
5/16-18	1,411	90	8,0	6,2	6,60	14,0	35	3	43,45	**031**	48,74	**031**
3/8-16	1,588	100	10,0	8,0	8,00	16,0	39	3	48,74	**037**	50,55	**037**



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 583 ...		U0 Article no. 22 267 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
7/16-14	1,814	100	8	6,2	9,40	18	3	66,77	**043**		
7/16-14	1,814	100	8	6,2	9,40	18	4			84,78	**043**
1/2-13	1,954	110	9	7,0	10,80	20	3	66,77	**050**		
1/2-13	1,954	110	9	7,0	10,80	20	4			74,51	**050**
9/16-12	2,117	110	11	9,0	12,25	20	3	94,74	**056**		
5/8-11	2,309	110	12	9,0	13,50	22	3	87,96	**062**		
5/8-11	2,309	110	12	9,0	13,50	22	4			95,91	**062**
3/4-10	2,540	125	14	11,0	16,50	25	3	113,40	**075**		
3/4-10	2,540	125	14	11,0	16,50	25	4			117,60	**075**
7/8-9	2,822	140	18	14,5	19,50	27	4	135,60	**087**		
1-8	3,175	160	18	14,5	22,25	30	4	184,40	**100**		
1-8	3,175	160	18	14,5	22,25	30	5			197,10	**100**

Steel	**6-20**	
Stainless steel	**4-8**	**5-10**
Cast iron	**6-15**	
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

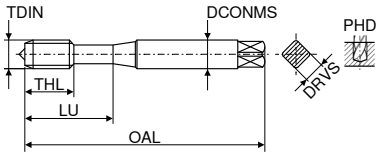
UNC

UNI | FE | FE-HF | VA

C
2–3

2B

TiN | TiCN

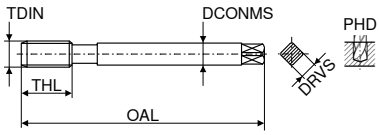


DIN 371 with reinforced shank



HSS-E ◁ 35° ≤ 1000 N/mm² ≤ 2,5xD | HSS-E ◁ 35° ≤ 850 N/mm² ≤ 2,5xD | HSS-E ◁ 35° ≤ 1100 N/mm² ≤ 2,5xD | HSS-E ◁ 35° ≤ 1000 N/mm² ≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 172 ...	EUR	T9 Article no. 23 272 ...	EUR	T9 Article no. 23 372 ...	EUR	T9 Article no. 23 472 ...	EUR
	mm	mm	mm	mm	mm	mm	mm									
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2					21,60	**004**		
Nr. 4-40	0,635	56	3,5	2,7	2,30	6	18	2	20,58	**004**	23,74	**004**			26,09	**004**
Nr. 6-32	0,794	56	4,0	3,0	2,85	7	20	3	18,95	**006**	22,11	**006**			24,46	**006**
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3					20,48	**006**		
Nr. 8-32	0,794	63	4,5	3,4	3,50	8	21	3	20,38	**008**	23,13	**008**			25,37	**008**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3					21,70	**008**		
Nr. 10-24	1,058	70	6,0	4,9	3,90	10	25	3	21,09	**010**	24,15	**010**			26,39	**010**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3					22,42	**010**		
1/4-20	1,270	80	7,0	5,5	5,20	13	30	3	27,21	**025**	26,90	**025**			29,65	**025**
1/4-20	1,270	80	7,0	5,5	5,20	17	30	3					30,26	**025**		
5/16-18	1,411	90	8,0	6,2	6,60	14	35	3	27,21	**031**	28,53	**031**			31,28	**031**
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3					31,49	**031**		
3/8-16	1,588	100	10,0	8,0	8,00	16	39	3	33,32	**037**	31,79	**037**			34,95	**037**
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3					37,50	**037**		



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 173 ...	EUR	T9 Article no. 23 273 ...	EUR	T9 Article no. 23 373 ...	EUR	T9 Article no. 23 473 ...	EUR
	mm	mm	mm	mm	mm	mm									
7/16-14	1,814	100	8	6,2	9,40	22	3					46,77	**043**		
7/16-14	1,814	100	8	6,2	9,40	18	3	42,19	**043**	43,92	**043**			48,40	**043**
1/2-13	1,954	110	9	7,0	10,75	20	3	44,53	**050**	43,41	**050**			47,69	**050**
1/2-13	1,954	110	9	7,0	10,75	25	3					50,54	**050**		
5/8-11	2,309	110	12	9,0	13,50	22	3	54,82	**062**	60,73	**062**			66,95	**062**
5/8-11	2,309	110	12	9,0	13,50	27	3					60,53	**062**		
3/4-10	2,540	125	14	11,0	16,50	25	3	82,95	**075**	74,69	**075**			82,13	**075**
3/4-10	2,540	125	14	11,0	16,50	30	3					94,87	**075**		

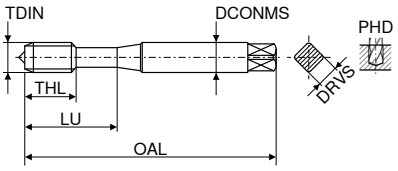
Steel	**5-45**	**5-25**	**5-45**	
Stainless steel	**5-15**			**3-10**
Cast iron	**10-25**			
Non ferrous metals	**15-40**			
Heat resistant alloys				
Hardened materials				

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

UNC | Spanlos



DIN 2174 with reduced shank

	EC	EC SN
	C 2–3	C 2–3
	2BX	2BX
	TiN	TiN



	HSS-E ≤ 1100 N/mm² ≤ 1,5xD	HSS-E ≤ 1100 N/mm² ≤ 3xD
	U0	U0
	Article no. 22 270 ...	Article no. 22 271 ...
	EUR	EUR

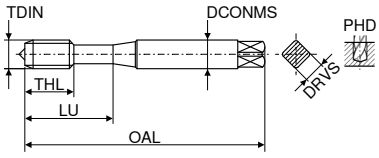
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	EUR		EUR	
Nr. 4-40	0,635	56	3,5	2,7	2,55	11	18		54,48	**004**		
Nr. 4-40	0,635	56	3,5	2,7	2,55	11	18	3			62,95	**004**
Nr. 6-32	0,794	56	4,0	3,0	3,15	12	20		50,76	**006**		
Nr. 6-32	0,794	56	4,0	3,0	3,15	12	20	3			58,50	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,80	13	21		50,97	**008**		
Nr. 8-32	0,794	63	4,5	3,4	3,80	13	21	4			58,50	**008**
Nr. 10-24	1,058	70	6,0	4,9	4,35	15	25		56,80	**010**		
Nr. 10-24	1,058	70	6,0	4,9	4,35	15	25	4			64,32	**010**
1/4-20	1,270	80	7,0	5,5	5,75	17	30		66,02	**025**		
1/4-20	1,270	80	7,0	5,5	5,75	17	30	4			74,51	**025**
5/16-18	1,411	90	8,0	6,2	7,30	20	35		71,22	**031**		
5/16-18	1,411	90	8,0	6,2	7,30	20	35	5			80,65	**031**
3/8-16	1,588	100	10,0	8,0	8,80	22	39		85,42	**037**		
3/8-16	1,588	100	10,0	8,0	8,80	22	39	5			93,89	**037**

Steel	**8-30**	**8-30**
Stainless steel	**8-15**	**8-15**
Cast iron		
Non ferrous metals	**12-25**	**12-25**
Heat resistant alloys		
Hardened materials		

Through hole – machine taps for wire thread inserts, right hand

EG UNC | Stabil

UNI | B 4–5 | 2B | nitr. + vap.

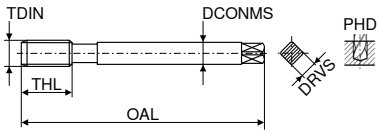


DIN 371 with reinforced shank



HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 668 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
EG Nr. 4-40	0,635	63	4,5	3,4	3,1	13	21	3	55,95	**004**
EG Nr. 6-32	0,794	70	6,0	4,9	3,8	14	25	3	57,97	**006**
EG Nr. 8-32	0,794	80	6,0	4,9	4,4	16	30	3	55,64	**008**
EG Nr. 10-24	1,058	80	7,0	5,5	5,2	17	30	3	60,51	**010**
EG 1/4-20	1,270	90	8,0	6,2	6,7	20	35	3	62,52	**025**
EG 5/16-18	1,411	100	10,0	8,0	8,4	22	39	3	71,96	**031**



DIN 376 with reduced shank

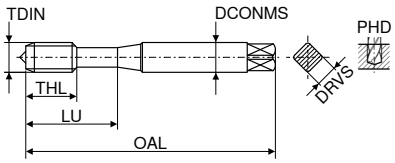
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 670 ...	
	mm	mm	mm	mm	mm	mm		EUR	
EG 3/8-16	1,588	100	9	7,0	10,00	22	3	82,88	**037**
EG 7/16-14	1,814	110	11	9,0	11,60	26	3	100,40	**043**
EG 1/2-13	1,954	110	12	9,0	13,30	27	3	107,00	**050**
EG 5/8-11	2,309	125	14	11,0	16,50	30	3	133,50	**062**
EG 3/4-10	2,540	140	18	14,5	19,75	32	3	173,80	**075**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – machine taps for wire thread inserts, right hand

EG UNC | Salo-Rex

UNI | E 1,5–2 | 2B | vap.



DIN 371 with reinforced shank



HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

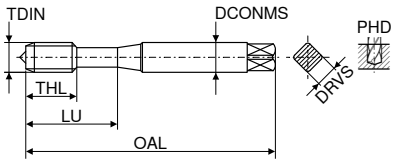
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 672 ... EUR	
	mm	mm	mm	mm	mm	mm	mm			
EG Nr. 4-40	0,635	63	4,5	3,4	3,1	7	21	3	56,70	**004**
EG Nr. 6-32	0,794	70	6,0	4,9	3,8	8	25	3	53,09	**006**
EG Nr. 8-32	0,794	80	6,0	4,9	4,4	8	30	3	56,38	**008**
EG Nr. 10-24	1,058	80	7,0	5,5	5,2	10	30	3	59,24	**010**
EG 1/4-20	1,270	90	8,0	6,2	6,7	14	35	3	65,38	**025**
EG 5/16-18	1,411	100	10,0	8,0	8,4	16	39	3	70,58	**031**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

UNJC | SL

Ti | C 2–3 | 3BX | TiCN





DIN 371 with reinforced shank

HSS-E
◁ 15°
≤ 1200 N/mm²
≤ 2xD

U0

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 166 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2	74,51	**004**
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	76,09	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	75,04	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	78,96	**010**
1/4-20	1,270	80	7,0	5,5	5,25	17	30	3	101,30	**025**
3/8-16	1,588	100	10,0	8,0	8,10	22	39	3	122,90	**037**

Steel	**6-8**
Stainless steel	**4-10**
Cast iron	
Non ferrous metals	**10-12**
Heat resistant alloys	**4-6**
Hardened materials	

Through hole – Machine taps, right hand

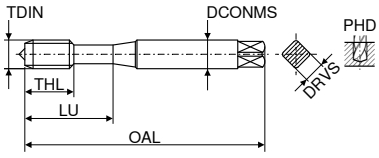
UNF | Stabil

UNI | Ti

B 4–5 | B 4–5

2B | 2BX

nitr. + vap. | TiN



DIN 371 with reinforced shank

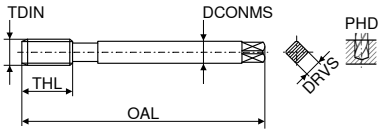




HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

HSS-PM
0°
≤ 44 HRC
≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 602 ...		U0 Article no. 22 317 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
Nr. 4-48	0,529	56	3,5	2,7	2,40	11	18	2	51,82	**004**		
Nr. 4-48	0,529	56	3,5	2,7	2,40	11	18	3			73,12	**004**
Nr. 5-44	0,577	56	3,5	2,7	2,70	11	18	3			80,23	**005**
Nr. 6-40	0,635	56	4,0	3,0	2,95	12	20	3	45,99	**006**	63,79	**006**
Nr. 8-36	0,706	63	4,5	3,4	3,50	13	21	3	45,99	**008**	73,65	**008**
Nr. 10-32	0,794	70	6,0	4,9	4,10	15	25	3	47,37	**010**	66,77	**010**
1/4-28	0,907	80	7,0	5,5	5,50	17	30	3	52,03	**025**	75,04	**025**
5/16-24	1,058	90	8,0	6,2	6,90	17	35	3	58,71	**031**	85,74	**031**
3/8-24	1,058	90	10,0	8,0	8,50	18	35	3			90,72	**037**



DIN 374 with reduced shank

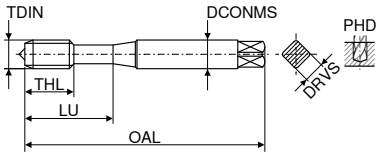
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 603 ...		U0 Article no. 22 421 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
7/16-20	1,270	100	8	6,2	9,90	22	3	70,05	**043**		
1/2-20	1,270	100	9	7,0	11,50	22	3	66,77	**050**	110,20	**050**
9/16-18	1,411	100	11	9,0	12,90	22	3	102,90	**056**		
5/8-18	1,411	100	12	9,0	14,50	22	3	93,89	**062**		
3/4-16	1,588	110	14	11,0	17,50	25	4	118,70	**075**		
7/8-14	1,814	125	18	14,5	20,50	25	4	154,80	**087**		
1-12	2,117	140	18	14,5	23,25	28	4	200,30	**100**		
1 1/8-12	2,117	150	22	18,0	26,50	28	4	526,70	**112**		
1 1/4-12	2,117	150	22	18,0	29,75	28	4	577,60	**125**		
1 3/8-12	2,117	170	28	22,0	33,00	30	5	608,30	**137**		

Steel	**6-20**	**2-5**
Stainless steel	**4-8**	
Cast iron	**6-15**	
Non ferrous metals		
Heat resistant alloys		**2-6**
Hardened materials		

Through hole – Machine taps, right hand

UNF

UNI	FE	VA
B 4–5	B 4–5	B 4–5
2B	2B	2B
TiN		nitr.

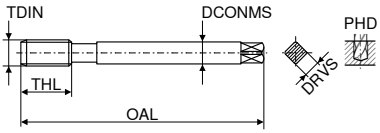


DIN 371 with reinforced shank



	HSS-E	HSS-E	HSS-E
	∢ 0° ≤ 1100 N/mm² ≤ 3xD	∢ 0° ≤ 850 N/mm² ≤ 3xD	∢ 0° ≤ 1100 N/mm² ≤ 3xD
	T9	T9	T9
	Article no. 23 180 ...	Article no. 23 280 ...	Article no. 23 480 ...
	EUR	EUR	EUR
TDIN			
Nr. 10-32	22,01 **010**	26,70 **010**	18,14 **010**
1/4-28	28,12 **025**	28,74 **025**	20,48 **025**
5/16-24	31,28 **031**	31,79 **031**	22,62 **031**
3/8-24	34,14 **037**	33,12 **037**	23,64 **037**

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
Nr. 10-32	0,794	70	6	4,9	4,1	15	25	3
1/4-28	0,907	80	7	5,5	5,5	17	30	3
5/16-24	1,058	90	8	6,2	6,9	17	35	3
3/8-24	1,058	90	10	8,0	8,5	18	35	4



DIN 374 with reduced shank

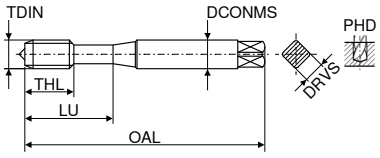
	T9	T9	T9
	Article no. 23 181 ...	Article no. 23 281 ...	Article no. 23 481 ...
	EUR	EUR	EUR
TDIN			
7/16-20	41,07 **043**	42,59 **043**	30,26 **043**
1/2-20	42,39 **050**	42,59 **050**	30,26 **050**
9/16-18	57,68 **056**	52,89 **056**	37,50 **056**
5/8-18	53,40 **062**	47,69 **062**	33,93 **062**
3/4-16	81,01 **075**	62,16 **075**	44,22 **075**

Steel	**5-45**	**5-25**	
Stainless steel	**5-15**		**3-10**
Cast iron	**10-25**		
Non ferrous metals	**15-40**		
Heat resistant alloys			
Hardened materials			

6

Blind hole – Machine taps, right hand

UNF | Salo-Rex



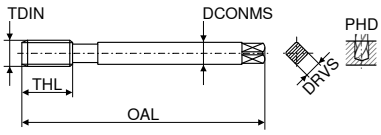
DIN 371 with reinforced shank

	VA	UNI	UNI
	E 1,5–2	C 2–3	E 1,5–2
	2B	2B	2B +0,05
	vap.	vap.	vap.



HSS-E ◁ 42° ≤ 900 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 308 ... EUR		U0 Article no. 22 606 ... EUR		U0 Article no. 22 307 ... EUR	
	mm	mm	mm	mm	mm	mm	mm							
Nr. 2-64	0,397	45	2,8	2,1	1,85	4,5	12	2	63,59	**002**				
Nr. 4-48	0,529	56	3,5	2,7	2,40	6,0	18	2	47,90	**004**	45,99	**004**		
Nr. 6-40	0,635	56	4,0	3,0	2,95	7,0	20	3	45,99	**006**	40,80	**006**		
Nr. 6-40	0,635	56	4,0	3,0	3,00	7,0	20	3					64,32	**006**
Nr. 8-36	0,706	63	4,5	3,4	3,50	8,0	21	3	45,99	**008**	40,80	**008**		
Nr. 10-32	0,794	70	6,0	4,9	4,10	10,0	25	3	49,17	**010**	43,02	**010**		
Nr. 10-32	0,794	70	6,0	4,9	4,15	10,0	25	3					68,04	**010**
1/4-28	0,907	80	7,0	5,5	5,50	10,0	30	3	50,55	**025**	47,05	**025**		
1/4-28	0,907	80	7,0	5,5	5,55	10,0	30	3					71,22	**025**
5/16-24	1,058	90	8,0	6,2	6,90	10,0	35	3	56,38	**031**	53,09	**031**		
5/16-24	1,058	90	8,0	6,2	6,95	10,0	35	3					81,07	**031**
3/8-24	1,058	90	10,0	8,0	8,50	10,0	35	3	59,03	**037**				
3/8-24	1,058	90	10,0	8,0	8,55	10,0	35	3					81,07	**037**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 607 ... EUR		U0 Article no. 22 409 ... EUR	
	mm	mm	mm	mm	mm	mm					
7/16-20	1,270	100	8	6,2	9,90	13	3	66,77	**043**		
7/16-20	1,270	100	8	6,2	9,95	13	4			102,40	**043**
1/2-20	1,270	100	9	7,0	11,50	13	4	66,77	**050**		
1/2-20	1,270	100	9	7,0	11,55	13	5			98,56	**050**
9/16-18	1,411	100	11	9,0	12,90	15	4	100,40	**056**		
9/16-18	1,411	100	11	9,0	12,95	15	5			139,90	**056**
5/8-18	1,411	100	12	9,0	14,50	15	4	87,96	**062**		
5/8-18	1,411	100	12	9,0	14,55	15	5			127,20	**062**
3/4-16	1,588	110	14	11,0	17,50	17	4	120,90	**075**		
3/4-16	1,588	110	14	11,0	17,55	17	5			171,70	**075**
7/8-14	1,814	125	18	14,5	20,50	17	4	146,20	**087**		
1-12	2,117	140	18	14,5	23,25	20	4	207,70	**100**		
1-12	2,117	140	18	14,5	23,30	20	5			269,20	**100**
1 1/8-12	2,117	150	22	18,0	26,50	22	4	283,00	**112**		
1 1/4-12	2,117	150	22	18,0	29,75	22	5	323,20	**125**		
1 3/8-12	2,117	170	28	22,0	33,00	24	5	393,20	**137**		

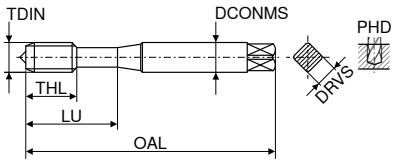
Steel		**6-20**	**6-20**
Stainless steel	**5-10**	**4-8**	**4-8**
Cast iron		**6-15**	**6-15**
Non ferrous metals			
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

UNF | SL

Ti | C 2–3 | 2BX | vap.

Ti | C 2–3 | 3BX | vap.







DIN 371 with reinforced shank

HSS-PM
◁ 30°
≤ 1400 N/mm²
≤ 1,5xD

HSS-PM
◁ 30°
≤ 1400 N/mm²
≤ 1,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 302 ...	EUR		U0 Article no. 22 303 ...	EUR	
	mm	mm	mm	mm	mm	mm	mm							
Nr. 10-32	0,794	70	6	4,9	4,1	10	25	3		89,44	**010**		89,44	**010**
1/4-28	0,907	80	7	5,5	5,5	10	30	3		97,18	**025**		97,18	**025**
5/16-24	1,058	90	8	6,2	6,9	10	35	3		115,50	**031**		105,00	**031**
3/8-24	1,058	90	10	8,0	8,5	10	35	3		114,50	**037**		114,50	**037**

Steel	**2-5**	**2-5**
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys	**2-6**	**2-6**
Hardened materials		

6

Blind hole – Machine taps, right hand

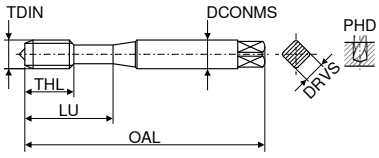
UNF

UNI | FE | VA

C 2–3

2B

TiN



DIN 371 with reinforced shank

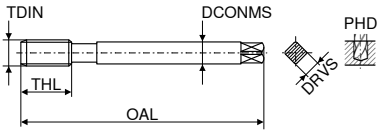


HSS-E
◁ 35°
≤ 1100 N/mm²
≤ 2,5xD

HSS-E
◁ 35°
≤ 850 N/mm²
≤ 2,5xD

HSS-E
◁ 35°
≤ 1100 N/mm²
≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 182 ... EUR		T9 Article no. 23 282 ... EUR		T9 Article no. 23 482 ... EUR	
	mm	mm	mm	mm	mm	mm	mm							
Nr. 10-32	0,794	70	6	4,9	4,1	10	25	3	23,23	**010**	28,23	**010**	30,98	**010**
1/4-28	0,907	80	7	5,5	5,5	10	30	3	29,75	**025**	30,67	**025**	33,83	**025**
5/16-24	1,058	90	8	6,2	6,9	10	35	3	31,49	**031**	32,71	**031**	35,87	**031**
3/8-24	1,058	90	10	8,0	8,5	10	35	3	35,05	**037**	35,46	**037**	38,93	**037**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 183 ... EUR		T9 Article no. 23 283 ... EUR		T9 Article no. 23 483 ... EUR	
	mm	mm	mm	mm	mm	mm							
7/16-20	1,270	100	8	6,2	9,9	13	3	42,19	**043**	43,92	**043**	48,40	**043**
1/2-20	1,270	100	9	7,0	11,5	13	4	44,53	**050**	44,53	**050**	48,81	**050**
9/16-18	1,411	100	11	9,0	12,9	15	4	60,12	**056**	62,16	**056**	68,48	**056**
5/8-18	1,411	100	12	9,0	14,5	15	4	54,41	**062**	54,62	**062**	60,12	**062**
3/4-16	1,588	110	14	11,0	17,5	17	4	86,31	**075**	73,88	**075**	81,32	**075**

Steel	**5-45**	**5-25**	
Stainless steel	**5-15**		**3-10**
Cast iron	**10-25**		
Non ferrous metals	**15-40**		
Heat resistant alloys			
Hardened materials			

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

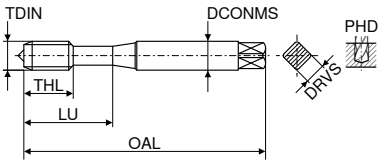
UNF | Spanlos

EC
SN

C
2–3

2BX

TiN

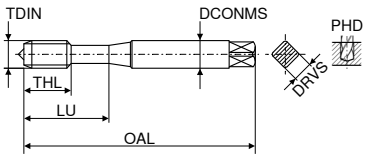


DIN 2174 with reduced shank



HSS-E
≤ 1100 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 312 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
Nr. 4-48	0,529	56	3,5	2,7	2,62	11	18	3	69,94	**004**
Nr. 6-40	0,635	56	4,0	3,0	3,22	12	20	3	64,96	**006**
Nr. 8-36	0,706	63	4,5	3,4	3,85	13	21	4	66,66	**008**
Nr. 10-32	0,794	70	6,0	4,9	4,45	15	25	4	72,06	**010**
1/4-28	0,907	80	7,0	5,5	5,95	17	30	4	84,57	**025**



DIN 2174 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 313 ...	
	mm	mm	mm	mm	mm	mm		EUR	
7/16-20	1,27	100	8	6,2	10,55	22	6	126,20	**043**
1/2-20	1,27	100	9	7,0	12,15	22	6	129,30	**050**

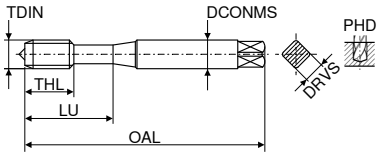
Steel	**8-30**
Stainless steel	**8-15**
Cast iron	
Non ferrous metals	**12-25**
Heat resistant alloys	
Hardened materials	

6

Through hole – machine taps for wire thread inserts, right hand

EG UNF | Stabil

UNI | B 4–5 | 2B | nitr. + vap.

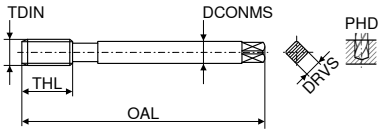


DIN 371 with reinforced shank



HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 676 ...	EUR
	mm	mm	mm	mm	mm	mm	mm			
EG Nr. 4-48	0,529	56	4	3,0	3,0	9	20	3	72,59	**004**
EG Nr. 6-40	0,635	70	6	4,9	3,7	11	25	3	70,05	**006**
EG Nr. 8-36	0,706	80	6	4,9	4,4	13	30	3	70,05	**008**
EG Nr. 10-32	0,794	80	6	4,9	5,1	13	30	3	74,51	**010**
EG 1/4-28	0,907	90	8	6,2	6,6	17	35	3	79,59	**025**



DIN 374 with reduced shank

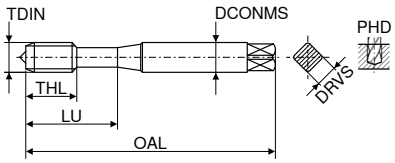
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 677 ...	EUR
	mm	mm	mm	mm	mm	mm			
EG 3/8-24	1,058	90	8	6,2	9,80	18	4	97,18	**037**
EG 7/16-20	1,270	100	9	7,0	11,50	22	3	121,90	**043**
EG 1/2-20	1,270	100	11	9,0	13,10	22	3	114,50	**050**
EG 5/8-18	1,411	110	14	11,0	16,25	25	4	174,80	**062**
EG 3/4-16	1,588	125	16	12,0	19,50	25	4	223,60	**075**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – machine taps for wire thread inserts, right hand

EG UNF | Salo-Rex

UNI | E 1,5–2 | 2B | vap.





DIN 371 with reinforced shank

HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 680 ...	EUR	
	mm	mm	mm	mm	mm	mm	mm				
EG Nr. 4-48	0,529	56	4	3,0	3,0	7	20	3		68,04	**004**
EG Nr. 6-40	0,635	70	6	4,9	3,7	8	25	3		67,51	**006**
EG Nr. 8-36	0,706	80	6	4,9	4,4	8	30	3		70,58	**008**
EG Nr. 10-32	0,794	80	6	4,9	5,1	8	30	3		74,51	**010**
EG 1/4-28	0,907	90	8	6,2	6,6	10	35	3		81,70	**025**

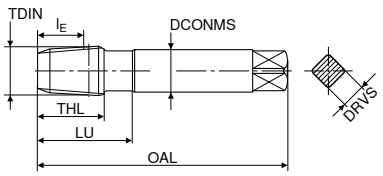
Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

NPT | Salo-Rex

VA | C 2–3 | vap.

VA | C 2–3 | TiN



DIN 371 with reinforced shank

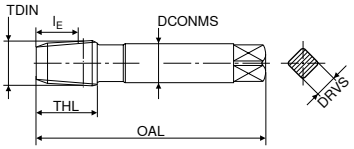




HSS-E
∢ 35°
≤ 900 N/mm²

HSS-E
∢ 42°
≤ 1100 N/mm²

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	LU	Flutes	U0 Article no. 22 364 ...		U0 Article no. 22 365 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
1/16-27	0,941	90	8	6,2	9,24	13,0	26,0	3	92,62	**006**		
1/8-27	0,941	90	10	8,0	9,28	13,0	26,0	3	107,00	**012**		
1/8-27	0,941	90	10	8,0	9,28	12,0	26,0	4			139,90	**012**
1/4-18	1,411	100	14	11,0	13,55	19,5	34,5	3	125,00	**025**		
1/4-18	1,411	100	14	11,0	13,55	18,0	34,5	4			143,10	**025**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	Flutes	U0 Article no. 22 371 ...		U0 Article no. 22 372 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
3/8-18	1,411	110	14	11	13,86	19,5	3	153,70	**037**		
3/8-18	1,411	110	14	11	13,86	18,0	5			232,10	**037**
1/2-14	1,814	140	16	12	18,11	25,0	5	223,60	**050**		
1/2-14	1,814	140	16	12	18,11	23,0	5			328,50	**050**
3/4-14	1,814	150	20	16	18,59	26,0	5	301,00	**075**		
1-11,5	2,209	170	25	20	22,31	32,0	5	440,90	**100**		

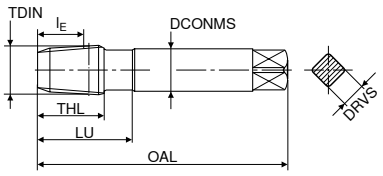
Steel		**2-4**
Stainless steel	**2-4**	**2-4**
Cast iron		
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

NPT | TWIN

VG

C
2–3



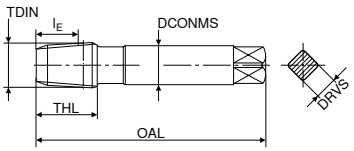
DIN 371 with reinforced shank



HSS-E
0°
≤ 1100 N/mm²

6

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	LU	Flutes	U0 Article no. 22 374 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
1/16-27	0,941	90	8	6,2	9,24	13,0	26,0	3	66,77	**006**
1/8-27	0,941	90	10	8,0	9,28	13,0	26,0	3	86,80	**012**
1/4-18	1,411	100	14	11,0	13,55	19,5	34,5	3	91,88	**025**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	Flutes	U0 Article no. 22 375 ...	
	mm	mm	mm	mm	mm	mm		EUR	
3/8-18	1,411	110	14	11	13,86	19,5	3	114,50	**037**
1/2-14	1,814	140	16	12	18,11	25,0	5	153,70	**050**
3/4-14	1,814	150	20	16	18,59	26,0	5	198,20	**075**
1-11,5	2,209	170	25	20	22,31	30,0	5	271,30	**100**

Steel	**2-6**
Stainless steel	
Cast iron	**4-6**
Non ferrous metals	**4-6**
Heat resistant alloys	
Hardened materials	

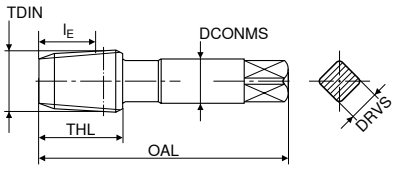
Through hole / Blind hole – Machine taps, right hand

▲ ES = extra short

NPT | TWIN

ST
ES

C
2–3





DIN 2181 with reduced shank

HSS-E
0°
≤ 750 N/mm²

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	Flutes	U0 Article no. 22 361 ...	
	mm	mm	mm	mm	mm	mm		EUR	
1/16-27	0,941	63	6	4,9	9,24	13,0	4	56,91	**006**
1/8-27	0,941	63	7	5,5	9,28	13,0	5	59,87	**012**
1/4-18	1,411	63	11	9,0	13,55	19,5	5	71,22	**025**
3/8-18	1,411	70	12	9,0	13,86	19,5	5	89,44	**037**
1/2-14	1,814	80	16	12,0	18,11	23,0	5	119,80	**050**
3/4-14	1,814	100	20	16,0	18,59	26,0	6	150,50	**075**
1-11,5	2,209	110	25	20,0	22,31	32,0	6	224,60	**100**
2-11,5	2,209	160	45	35,0	23,22	36,0	7	711,20	**200**

Steel	**4-6**
Stainless steel	
Cast iron	
Non ferrous metals	**4-6**
Heat resistant alloys	
Hardened materials	

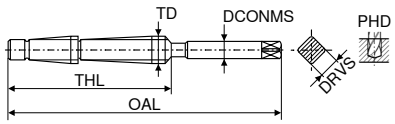
Through hole – Machine taps, right hand

- single finishing trapezoidal taps (2 steps)
- do not reverse

Tr

ST

7H





Factory standard

HSS-E

5°
≤ 900 N/mm²
≤ 2xD

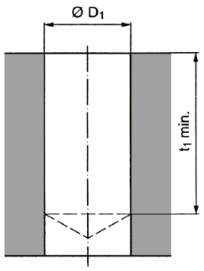
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 402 ... EUR	
	mm	mm	mm	mm	mm	mm			
Tr 8	1,5	105	6	4,9	6,60	55	3	498,10	**080**
Tr 9	2,0	130	7	5,5	7,20	70	3	498,10	**090**
Tr 10	2,0	130	7	5,5	8,20	70	3	498,10	**102**
Tr 10	3,0	155	7	5,5	7,25	95	3	458,90	**103**
Tr 12	3,0	160	9	7,0	9,25	95	3	550,10	**123**
Tr 14	3,0	170	10	8,0	11,25	100	3	637,90	**143**
Tr 14	4,0	195	10	8,0	10,25	125	3	539,50	**144**
Tr 16	4,0	225	12	9,0	12,25	130	3	539,50	**164**
Tr 18	4,0	225	14	11,0	14,25	116	3	556,40	**184**
Tr 20	4,0	225	16	12,0	16,25	130	3	644,40	**204**
Tr 22	5,0	260	16	12,0	17,25	160	3	750,40	**225**
Tr 24	5,0	285	18	14,5	19,25	165	3	868,00	**245**

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

6

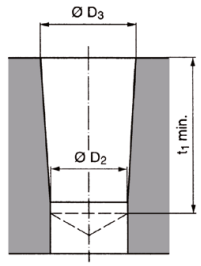
Core hole diameters for taper threads (taper 1:16)

Pre-drilling of cylindrical holes without reamer



		NPT		NPTF				Rc	
Ø D_1 inch	Pitch Gg/1"	Ø D_1 mm	t_1 min. mm	Ø D_1 mm	t_1 min. mm	Ø D_1 inch	Pitch Gg/1"	Ø D_1 mm	t_1 min. mm
1/16	27	6,15	12	6,1	12	1/16	28	6,2	11,9
1/8	27	8,5	12	8,45	12	1/8	28	8,2	11,9
1/4	18	11	17,5	10,9	17,5	1/4	19	10,85	16,3
3/8	18	14,5	17,6	14,3	17,6	3/8	19	14,5	18,1
1/2	14	17,85	22,9	17,6	22,9	1/2	14	18	24
3/4	14	23,2	23	23	23	3/4	14	23,5	25,3
1	11½	29,5	27,4	28,75	27,4	1	11	29,5	30,6
1¼	11½	37,8	28,1	37,5	28,1				
1½	11½	44	28,4	43,75	28,4				
2	11½	56	28,4	55,75	28,4				

Pre-drilling of cylindrical holes and conical boring with reamer

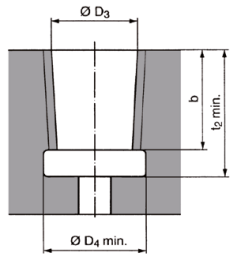


Taper 1:16

		NPT			NPTF		
Ø D_1 inch	Pitch Gg/1"	Ø D_2 mm	Ø D_3 mm	t_1 min. mm	Ø D_2 mm	Ø D_3 mm	t_1 min. mm
1/16	27	5,95	6,39	12	5,95	6,41	12
1/8	27	8,25	8,74	12	8,25	8,76	12
1/4	18	10,75	11,36	17,5	10,75	11,4	17,5
3/8	18	14,1	14,8	17,6	14,1	14,84	17,6
1/2	14	17,5	18,32	22,9	17,5	18,33	22,9
3/4	14	22,7	23,67	23	22,7	23,68	23
1	11½	28,6	29,69	27,4	28,6	29,72	27,4
1¼	11½	37,3	38,45	28,1	37,3	38,48	28,1
1½	11½	43,4	44,52	28,4	43,4	44,5	28,4
2	11½	55,5	56,56	28,4	55,5	56,59	28,4

		Rc		
Ø D_1 inch	Pitch Gg/1"	Ø D_2 mm	Ø D_3 mm	t_1 min. mm
1/16	28	6,1	6,56	11,9
1/8	28	8,1	8,57	11,9
1/4	19	10,75	11,45	17,7
3/8	19	14,25	14,95	18,1
1/2	14	17,75	18,63	24
3/4	14	23	24,12	25,3
1	11	29	30,29	30,6

Recommendation for the pre-drilling of blind hole threads



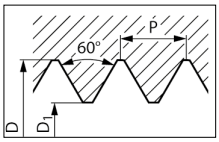
Taper 1:16

		NPT				NPTF			
Ø D_1 inch	Pitch Gg/1"	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 mm	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm
1/16	27	6,39	7	10	7,6	6,41	8	11	7,4
1/8	27	8,74	7	10	10	8,76	8	11	9,8
1/4	18	11,36	10,2	14,5	13,1	11,4	11,6	15,5	12,9
3/8	18	14,8	10,6	15	16,5	14,84	12	16	16,3
1/2	14	18,32	13,8	19	20,5	18,33	15,6	20,5	20,3
3/4	14	23,67	14,2	20	25,8	23,68	16	21,5	25,6
1	11½	29,69	17	24	32,2	29,72	19,2	26	32
1¼	11½	38,45	17,5	24,5	41	38,48	19,7	26,5	40,8
1½	11½	44,52	17,5	24,5	47,2	44,5	19,7	26,5	47
2	11½	56,56	18	25	59,2	56,59	20,2	27	59

		Rc			
Ø D_1 inch	Pitch Gg/1"	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm
1/16	28	6,56	5,6	9,5	7,6
1/8	28	8,57	5,6	9,5	9,6
1/4	19	11,45	8,4	14	13
3/8	19	14,95	8,8	14,4	16,5
1/2	14	18,63	11,4	19	20,6
3/4	14	24,12	12,7	20,3	26
1	11	30,29	14,5	24,3	32,8

Tapped hole pilot diameter

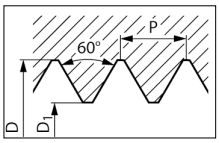
M ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 (M1–M1,4 = 5H)



Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M1	0,25	0,729	0,785	0,75
M1,1	0,25	0,829	0,885	0,85
M1,2	0,25	0,929	0,985	0,95
M1,4	0,3	1,075	1,142	1,1
M1,6	0,35	1,221	1,321	1,25
M1,8	0,35	1,421	1,521	1,45
M2	0,4	1,567	1,679	1,6
M2,2	0,45	1,713	1,838	1,75
M2,5	0,45	2,013	2,138	2,05
M3	0,5	2,459	2,599	2,5
M3,5	0,6	2,850	3,010	2,9
M4	0,7	3,242	3,422	3,3
M4,5	0,75	3,688	3,878	3,7
M5	0,8	4,134	4,334	4,2
M6	1,0	4,917	5,153	5
M7	1,0	5,917	6,153	6
M8	1,25	6,647	6,912	6,8
M9	1,25	7,647	7,912	7,8
M10	1,5	8,376	8,676	8,5
M11	1,5	9,376	9,676	9,5

Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M12	1,75	10,106	10,441	10,2
M14	2,0	11,835	12,210	12
M16	2,0	13,835	14,210	14
M18	2,5	15,294	15,744	15,5
M20	2,5	17,294	17,744	17,5
M22	2,5	19,294	19,744	19,5
M24	3,0	20,752	21,252	21
M27	3,0	23,752	24,252	24
M30	3,5	26,211	26,771	26,5
M33	3,5	29,211	29,771	29,5
M36	4,0	31,670	32,270	32
M39	4,0	34,670	35,270	35
M42	4,5	37,129	37,799	37,5
M45	4,5	40,129	40,799	40,5
M48	5,0	42,587	43,297	43
M52	5,0	46,587	47,297	47
M56	5,5	50,046	50,796	50,5
M60	5,5	54,046	54,796	54,5
M64	6,0	57,505	58,305	58
M68	6,0	61,505	62,305	62

MF ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1



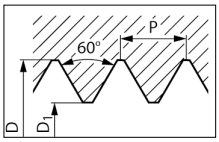
Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M2	x	0,25	1,729	1,774	1,75
M2,2	x	0,25	1,929	1,974	1,95
M2,5	x	0,35	2,121	2,221	2,15
M3	x	0,35	2,621	2,721	2,65
M3,5	x	0,35	3,121	3,221	3,15
M4	x	0,35	3,621	3,721	3,65
M4	x	0,5	3,459	3,599	3,5
M4,5	x	0,5	3,959	4,099	4
M5	x	0,5	4,459	4,599	4,5
M6	x	0,5	5,459	5,599	5,5
M6	x	0,75	5,188	5,378	5,2
M8	x	0,75	7,188	7,378	7,2
M8	x	1,0	6,917	7,153	7
M10	x	0,75	9,188	9,378	9,2
M10	x	1,0	8,917	9,153	9
M10	x	1,25	8,647	8,912	8,8
M12	x	1,0	10,917	11,153	11
M12	x	1,5	10,376	10,676	10,5
M14	x	1,25	12,647	12,912	12,8
M16	x	1,0	14,917	15,153	15
M16	x	1,5	14,376	14,676	14,5

Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M20	x	1,0	18,917	19,153	19
M20	x	1,5	18,376	18,676	18,5
M20	x	2,0	17,835	18,210	18
M24	x	1,5	22,376	22,676	22,5
M30	x	2,0	27,835	28,210	28
M36	x	1,5	34,376	34,676	34,5
M36	x	3,0	32,752	33,252	33
M42	x	2,0	39,835	40,210	40
M48	x	1,5	46,376	46,676	46,5
M48	x	3,0	44,752	45,252	45
M48	x	4,0	43,670	44,270	44
M56	x	1,5	54,376	54,676	54,5
M56	x	2,0	53,835	54,210	54
M56	x	3,0	52,752	53,252	53
M56	x	4,0	51,670	52,270	52
M64	x	3,0	60,752	61,252	61
M64	x	4,0	59,670	60,270	60
M72	x	4,0	67,670	68,270	68
M80	x	6,0	73,505	74,305	74
M95	x	6,0	88,505	89,305	89
M110	x	6,0	103,505	104,305	104

Dimensions in mm; P = Pitch

Thread former pilot hole diameter

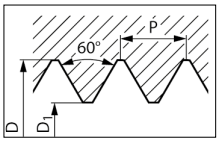
M ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 (M1–M1,4 = 5H)



Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M1	0,25	0,89		0,9
M1,2	0,25	1,09		1,1
M1,4	0,3	1,26		1,26
M1,6	0,35	1,45		1,45
M1,8	0,35	1,65		1,65
M2	0,4	1,83	1,86	1,85
M2,2	0,45	2,00	2,04	2,0
M2,5	0,45	2,30	2,34	2,3
M3	0,5	2,77	2,82	2,8
M3,5	0,6	3,23	3,28	3,25
M4	0,7	3,68	3,73	3,7
M4,5	0,75	4,15	4,21	4,15
M5	0,8	4,63	4,68	4,65

Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M6	1	5,51	5,59	5,55
M7	1	6,51	6,59	6,55
M8	1,25	7,39	7,48	7,4
M9	1,25	8,39	8,48	8,4
M10	1,5	9,25	9,35	9,3
M11	1,5	10,25	10,35	10,3
M12	1,75	11,12	11,25	11,2
M14	2	13,00	13,15	13,0
M16	2	15,00	15,15	15,0
M18	2,5	16,72	16,90	16,8
M20	2,5	18,72	18,90	18,8
M22	2,5	20,72	20,9	20,8
M24	3	22,46	22,7	22,5

MF ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1



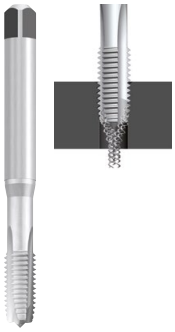
Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M2	x	0,25	1,89		1,9
M2,2	x	0,25	2,09		2,1
M2,5	x	0,25	2,39		2,4
M2,5	x	0,35	2,35		2,35
M3	x	0,25	2,89		2,9
M3	x	0,35	2,85		2,85
M3,5	x	0,35	3,35		3,35
M3,5	x	0,5	3,27	3,32	3,3
M4	x	0,35	3,85		3,85
M4	x	0,5	3,77	3,82	3,8
M4,5	x	0,5	4,27	4,32	4,3
M5	x	0,5	4,77	4,82	4,8
M5	x	0,75	4,65	4,71	4,65
M5,5	x	0,5	5,27	5,32	5,3
M6	x	0,5	5,78	5,83	5,8
M6	x	0,75	5,65	5,71	5,65
M7	x	0,5	6,78	6,83	6,8
M7	x	0,75	6,65	6,71	6,65
M8	x	0,5	7,78	7,83	7,8
M8	x	0,75	7,65	7,71	7,65
M8	x	1,0	7,51	7,59	7,55
M9	x	0,5	8,78	8,83	8,8
M9	x	0,75	8,65	8,71	8,65
M9	x	1,0	8,51	8,59	8,55
M10	x	0,5	9,78	9,83	9,8
M10	x	0,75	9,65	9,71	9,65
M10	x	1,0	9,51	9,59	9,55
M10	x	1,25	9,39	9,48	9,4
M11	x	0,75	10,65	10,71	10,7
M11	x	1,0	10,51	10,59	10,5
M12	x	0,75	11,66	11,72	11,7

Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M12	x	1,0	11,52	11,6	11,5
M12	x	1,25	11,4	11,49	11,4
M12	x	1,5	11,26	11,36	11,3
M13	x	0,75	12,66	12,72	12,7
M13	x	1,0	12,52	12,6	12,5
M13	x	1,5	12,26	12,36	12,3
M14	x	0,75	13,66	13,72	13,7
M14	x	1,0	13,52	13,6	13,5
M14	x	1,25	13,4	13,49	13,4
M14	x	1,5	13,26	13,36	13,3
M15	x	0,75	14,66	14,72	14,7
M15	x	1,0	14,52	14,6	14,5
M15	x	1,5	14,26	14,36	14,3
M16	x	0,75	15,66	15,72	15,7
M16	x	1,0	15,52	15,6	15,5
M16	x	1,5	15,26	15,36	15,3
M18	x	1,0	17,52	17,6	17,5
M18	x	1,5	17,26	17,36	17,3
M18	x	2,0	17	17,15	17
M20	x	1,0	19,52	19,6	19,5
M20	x	1,5	19,26	19,36	19,3
M20	x	2,0	19	19,15	19
M22	x	1,5	21,26	21,36	21,3
M22	x	2,0	21	21,15	21
M24	x	1,5	23,26	23,38	23,3
M24	x	2,0	23,01	23,16	23
M25	x	1,5	24,26	24,38	24,3
M26	x	1,5	25,26	25,38	25,3
M27	x	2,0	26,01	26,16	26
M28	x	1,5	27,26	27,38	27,25
M30	x	1,5	29,26	29,38	29,25
M30	x	2,0	29,01	29,16	29

Dimensions in mm; P = Pitch

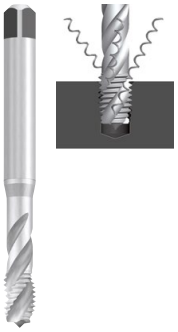
Tap Type Explanation

Stabil
Through hole tap type Stabil



- for through holes up to 4xD
- lead form B: 3,5–5 cutting leads, with spiral point
- straight Flutes
- also suitable for synchronised machining, with Wedlon flat and with extra long version
- due to the special geometry of the flutes, the chips are removed in the direction of cut

Salo-Rex
Blind hole tap type Salo-Rex



- for blind holes up to 3xD
- lead form C: 2–3 cutting leads, without spiral point
- lead form E: 1,5–2 cutting leads, without spiral point
- (35°, 42°, 45°, 50°) right hand helix
- also suitable for syncronised machining, with Weldon flat, with extra long version and through coolant
- the high helix angle ensures chips are discharged effectively against the direction of cut

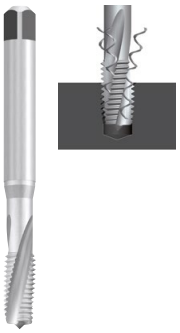
6

TWIN
Through and blind hole tap type TWIN



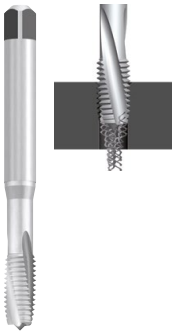
- for blind and through holes up to 2xD
- lead form C: 2–3 cutting leads, without spiral point
- lead form D: 3,5–5 cutting leads, without spiral point
- lead form E: 1,5–2 cutting leads, without spiral point
- straight Flutes
- for steel, short chipping and hardened materials to 55 (62) HRc
- also with extra long version and through coolant

SL
Blind hole tap type SL



- for blind holes up to 2xD
- lead form C: 2–3 cutting leads, without spiral point
- lead form E: 1,5–2 cutting leads, without spiral point
- (15°, 25°, 30°) slow right hand helix
- for steel, titanium alloys and Inconel 718
- also suitable for synchronised machining, with extra long version and through coolant
- also suitable for difficult operating conditions such as cross holes

DL
Through hole tap type DL



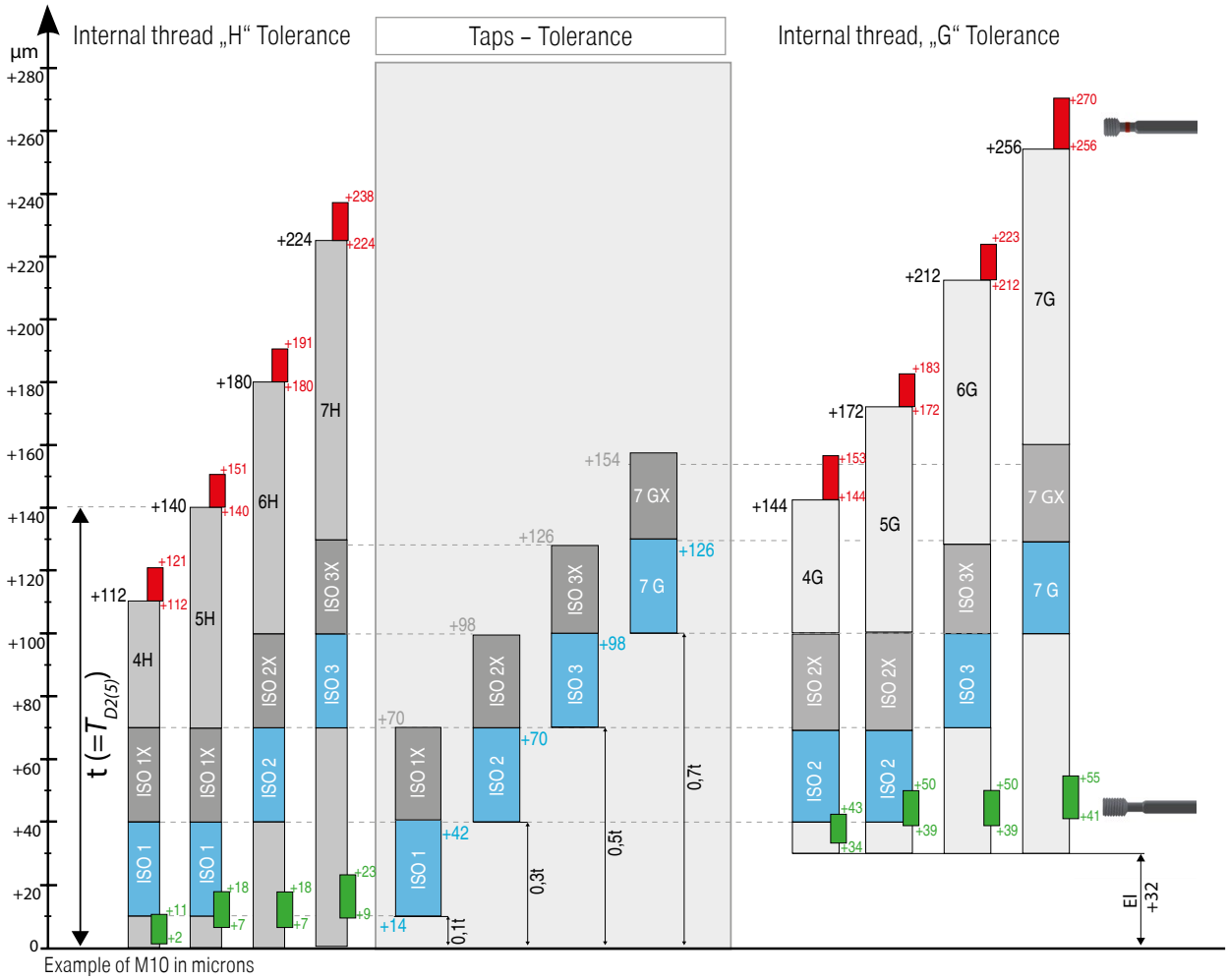
- for through holes up to 4xD
- lead form C: 3,5–5 cutting leads, without spiral point
- 15° left hand helix
- suitable for steel, titanium alloys and Inconel 718
- the chips are discharged in the direction of cut

Spanlos
Thread former type Spanlos



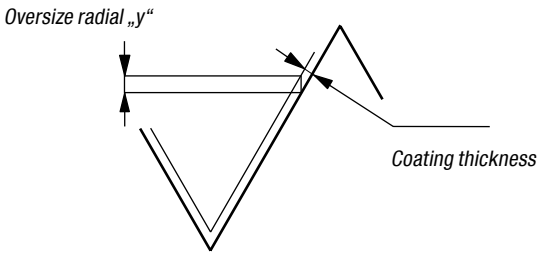
- for blind and through holes up to 3xD
- lead form C: 2–3 cutting leads, without spiral point
- for cold formable materials up to 1400 N/mm^2
- suitable for synchronised machining, with lubrication grooves and internal cooling

Thread tolerances and recommended manufacturing tolerances



Workpieces to be plated require oversize taps.
The interference depends on the coating thickness and the flank angle.

at	60° Flank angle	Oversize ≙ 4 x coating thickness
	55° Flank angle	Oversize ≙ 4.331 x coating thickness
	30° Flank angle	Oversize ≙ 7.727 x coating thickness

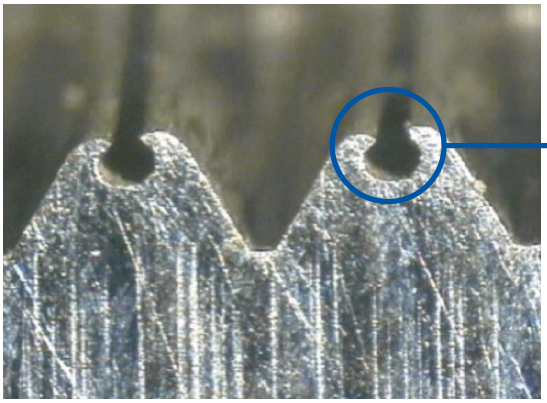


Application class of the tap designation according to		Tolerance class of the internal thread to be cut				
DIN	ISO					
4H	ISO1	4H	5H	–	–	–
6H	ISO2	4G	5G	6H	–	–
6G	ISO3	–	(4E)	6G	7H	8H
7G	–	–	–	(6E)	7G	8G

For special applications, e.g. abrasive cast iron materials or plastics other dimensions have to be chosen which are determined on previous experience. In such cases an „X“ is added to the short designation of the tolerance, e.g. ISO 2X, however the tolerance zone assignment may be limited (6HX for tolerance zone 6H and 5G). In addition it should be taken into account that the dimensions of the internal thread do not only depend on the dimensions of the tap but on the material to be machined and all production conditions. For first taps and intermediate taps no thread dimensions are determined.

Thread formers

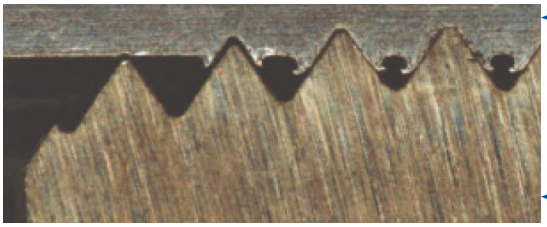
Spanlos thread forming taps for cold-formable materials up to 1400 N/mm² or at least 5 % elongation. The thread is produced by plastic deformation. The molded thread has very high strength.



Prior to forming a thread, you should ensure that a molded thread is acceptable. In certain sectors, the forming of a thread is **not** permitted. Dirt or bacteria can settle in the formed crown.

Important

Incremental pressure forming



Workpiece

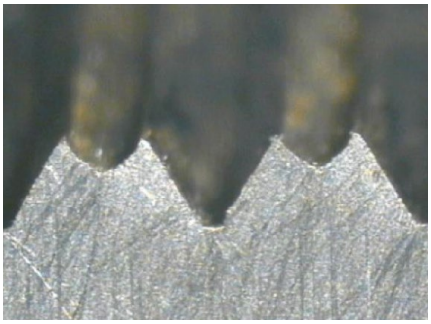
Thread formers



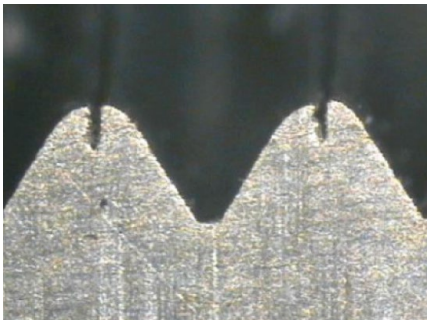
The thread profile is pressed gradually into the material via the start (leading edge) of the tap.

Properties

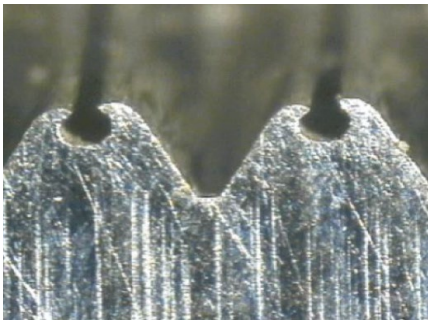
- one type can be used in different materials
- for through and blind holes
- very good thread surface quality
- high static and dynamic strength thread
- secure machining of deep and counterbored threads
- short machining times
- no chip problems
- no swarf
- high process security
- HSS-E and HSS-PM taps for materials up to 33 HRC with a minimum elongation of 5 %



Underformed – core hole too large



Overformed – core hole too small



Perfect form – core hole correct

Troubleshooting

Poor tool life

Cause

- overload fractures of the cutting edge on the lead
- hardness or tool material not suitable for the application
- core hole too small, or work hardened
- insufficient lubrication or incorrect application parameters

Remedy

- a longer lead or more flutes for the same lead length, giving a greater number of cutting teeth
- in reground tools the hardness can be reduced, apply correct parameters for regrinding
- increase frequency of changes or regrinding of the drill
- use the correct operating parameters for drilling
- select the correct lubricant and ensure adequate supply

Axial thread error

Cause

- selected geometry is not suitable
- spindle speed is wrong compared with feed (synchronisation error)
- blind hole taps are used with high feed pressure
- through hole taps are used with low feed pressure

Remedy

- check programming and pitch control or machine synchronisation
- use tapping chuck with length compensation
- increase retraction feed pessure
- increase feed pessure

Oversize thread

Cause

- thread tolerances of tool and thread gauge do not match
- burred tool edges after regrinding
- cold pressure welding

Remedy

- check the correct tolerances for tool and thread gauge
- carefully deburr
- use appropriate (positive) geometry
- reduce cutting speed
- use different surface treatment or coating
- use tapping chuck with length compensation
- use appropriate lubricant

Broken tool

Cause

- tool is worn
- tool has hit the bottom of the hole
- weld deposits
- core hole too small
- chip trapping
- incorrect cutting speed
- chip trapping in the flute
- insufficient cooling / lubrication

Remedy

- employ set taps
- use a tool with lower helix
- use tools with a shorter / longer lead
- check the pre-drilling depth and the thread depth
- drill core hole deeper
- correct cutting speed
- use a different coating or surface treatment
- use tool holder with length compensation
- use suitable lubricant
- use correct core hole
- change geometry and / or flute type
- note chip shape and chip formation

Coatings

vap.
- vaporised
- vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance

nitr.
- nitrided
- nitriding increases wear resistance and offers low friction properties

vap. + nitr.
- vaporized + nitrated
- combination of increased surface hardness and lubricant carrier

TiN
- TiN coating
- maximum application temperature: 450 °C

TiN GS
- titanium nitride low friction layer
- high wear resistance with low friction properties
- maximum application temperature: 450 °C

TiCN
- TiCN multilayer coating
- maximum application temperature: 450 °C

Ti200
- TiN coating
- well suited for high cutting speeds during thread forming
- maximum application temperature: 450 °C

OSM
- hard material layer and anti-friction layer
- for use in high-strength steels

CH
- amorphous carbon layer
- for use in non-ferrous metals or aluminum
- reduces the material adhesion

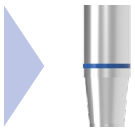
HCr
- hard chromed
- for use in non-ferrous metals or aluminum
- very low surface roughness

CrN
- chromium-nitrogen coating
- very wear-resistant coating
- especially suitable for use in aluminum, but also for P, M and S materials

6

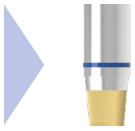
Coloured rings – overview

WNT \ Performance



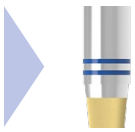
for steel up to 750 N/mm²

Type ST uncoated tap for steel up to 750 N/mm² tensile strength



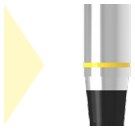
for steel to 1100 N/mm²

Type ST and VG coated tap for steel up to 1100 N/mm² tensile strength



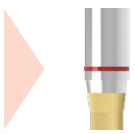
for steel up to 1400 N/mm²

Type HR for steel up to 1400 N/mm² tensile strength



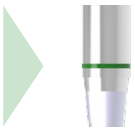
for corrosion and acid-resistant steels

Type VA for stainless steel



for cast iron materials

Type GG for cast iron



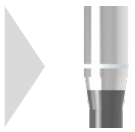
for aluminium and non-ferrous metal

Type NW, Soft and Ms for aluminium, short-chipping brass and soft materials



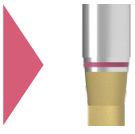
for heat resistant alloys

Type Ti, Ni and AMPCO for heat-resistant steel, titanium and Inconel



for hardened steels

Type HT for hard machining



for universal application up to 1100 N/mm²

Type UNI for the all-purpose use

New products for machining technicians

NEW Circular Thread Milling Cutter – Type H



▲ Specialist for thread production in hardened and difficult-to-machine materials



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Overview Circular and Thread Milling Cutters	3
Toolfinder	4+5
Product programme	6–66
Technical Information	
Cutting Data	67–71
Milling Procedures	72
Calculation of cutting data for thread milling	73
Thread type – Tool type – Coatings	74

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Version


No drilling required


Central internal coolant


Lateral internal coolant


Coolant supply either via the flange or centrally

VHM — Solid carbide

Shank







Thread / Flank angle

M — Explanation of the types of thread can be found on → **Page 74.**



Flank angle 60°

Applications



Circlip grooves


Full radius slot milling


Slot milling


Multipurpose milling


Chamfering and deburring


Gear milling



IR = internal right, IL = internal left



ER = external right, EL = external left


IR/IL + ER/EL

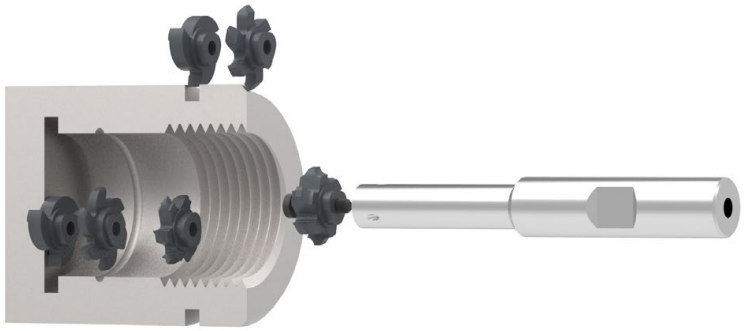
● = **Main application**

○ = Extended application

Overview Circular and Thread Milling Cutters

Modular Circular Milling Cutters with Carbide Indexable Inserts

- the perfect tool for every application
- various holders, depending on overhang
- the same threading insert for different pitches and diameters
- highest flexibility and stability
- in addition to circular thread milling, circular and linear milling operations can also be carried out



1st choice for small batch sizes
and large threads

Thread Milling Cutters with Indexable Carbide Inserts

- exchange of the insert for different threads
- same threading insert for different diameters



Solid Carbide Thread Milling Cutters

- short machining times, ideal for volume production
- one tool for all thread types
- one thread milling cutter for different diameters with the same pitch



MicroMill



SGF



UNI

Toolfinder

			from bore diameter in mm
Modular Circular Milling Cutters with Carbide Indexable Inserts	Polygon	▲ high power transmission through polygon connection ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9,6
	Mini Mill	▲ three interlocking rib location ▲ compatible with popular manufacturer systems ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9,6
	System 300	▲ proven circular milling tool ▲ 3 edged inserts	7,9
Thread Milling Cutters with Indexable Carbide Inserts	MWN	▲ multi tooth thread milling cutter ▲ double sided inserts ▲ exclusively for thread production ▲ holder for tapered threads	9,0
	GZD	▲ multi tooth drilling and thread milling cutter ▲ for thread milling in solid material ▲ core hole and thread with one tool	14,0
	GZG	▲ multi tooth thread milling cutter ▲ exclusively for thread production	18,5
	EAW	▲ single point thread milling cutter ▲ inserts with 2 or 4 cutting edges ▲ exclusively for thread production ▲ insert holder with cylindrical shank DIN 1835	17,5
	EWM	▲ single point thread milling cutter ▲ inserts with 2 or 4 cutting edges ▲ exclusively for thread production ▲ integral insert holder to DIN 69871	43,0
Solid Carbide Thread Milling Cutters	Micro Mill	▲ solid carbide circular milling cutter for small diameters	1,25
	UNI	▲ circular hole and thread milling cutter ▲ core hole, countersink and thread with one tool ▲ up to 3xD in short or long chipping materials	4,5
	H	▲ circular thread milling cutters ▲ core hole, countersink and thread with one tool ▲ specifically for hardened materials, up to 2xD	2,3
	HR	▲ single point thread milling cutter ▲ exclusively for thread production ▲ up to 3xD in materials up to 63 HRC	4,0
	SFSE	▲ solid carbide thread milling cutter with chamfering facet ▲ only one tool for threading and chamfering	2,4
	SGF	▲ solid carbide thread milling cutter without chamfering facet ▲ exclusively for thread production	3,15

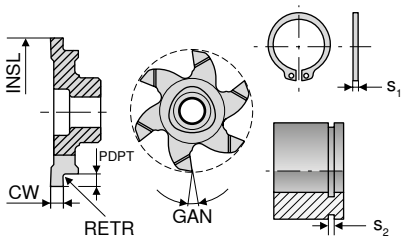
Thread / Flank angle								Applications					Tool holder
60° M MF	55° G	55° BSW BSF	60° UN	60° UNC UNF	80° Pg	60° NPT	30° Tr	DIN 471/472					
11+12	13	13		15			14	6+7	8+9	10	10	16+17	18+19
27+28	28							20+21	22+23 24	23	25		29+30
34	35	35						31+32	33		33		36
37	38		38		39	39							40+41
42	42												43
44	45		46		45								47
48	48		48										49
50	50		50										51
53									52		52		
54													
55				55									
56													
57+59	57+59			58+60		58+60							
61+63 66	62+63	64		64+65									

7

Milling inserts for circlip grooves without chamfer

Polygon

DIN 471/472



Ti500



Solid carbide

W2

Size	$s_{2\ H13}$ mm	INSL mm	CW $_{-0,03}$ mm	PDPT mm	RETR mm	GAN °	s_1 mm	NOF	Article no. 50 880 ...	
									EUR	
6	0,90	9,6	0,98	1,20	0,3	6	0,80	3	34,28	292
	1,10	11,7	1,18	1,00	0,3	6	1,00	3	32,62	294
	1,30	11,7	1,38	1,00	0,3	6	1,20	3	32,62	296
	1,60	11,7	1,68	1,00	0,3	6	1,50	3	32,62	298
7	1,10	16,0	1,18	0,90	0,3	6	1,00	6	45,41	301
	1,30	16,0	1,38	1,10	0,3	6	1,20	6	45,74	302
	1,60	16,0	1,68	1,25	0,3	6	1,50	6	45,74	304
	1,85	16,0	1,93	1,25	0,3	6	1,75	6	45,74	306
	1,10	17,7	1,18	0,90	0,3	6	1,00	6	46,19	308
	1,30	17,7	1,38	1,10	0,3	6	1,20	6	46,19	309
	1,60	17,7	1,68	1,25	0,3	6	1,50	6	46,19	310
	1,85	17,7	1,93	1,25	0,3	6	1,75	6	46,19	311
9	1,10	20,0	1,18	0,90	0,3	6	1,00	6	47,51	313
	1,30	20,0	1,38	1,10	0,3	6	1,20	6	47,51	314
	1,60	20,0	1,68	1,25	0,3	6	1,50	6	47,51	315
	1,85	20,0	1,93	1,25	0,3	6	1,75	6	47,51	316
	1,60	21,7	1,68	1,25	0,3	6	1,50	6	48,06	318
	1,85	21,7	1,93	1,25	0,3	6	1,75	6	48,06	319
	2,15	21,7	2,23	1,75	0,3	6	2,00	6	48,06	320
	2,65	21,7	2,73	1,75	0,3	6	2,50	6	48,06	321
10	1,30	26,0	1,38	1,10	0,3	6	1,20	6	49,82	322
	1,60	26,0	1,68	1,25	0,3	6	1,50	6	49,82	324
	1,85	26,0	1,93	1,25	0,3	6	1,75	6	49,82	326
	2,15	26,0	2,23	1,75	0,3	6	2,00	6	49,82	328
	2,65	26,0	2,73	1,75	0,3	6	2,20	6	49,82	330
	3,15	26,0	3,23	2,20	0,3	6	3,00	6	49,82	332

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

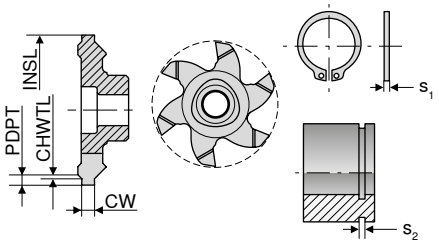
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Milling inserts for circlip grooves with chamfer

▲ both edges chamfered 0,1x45°

Polygon | DIN 471/472



Ti500



Size	$s_{2\ H13}$ mm	INSL mm	CW $_{-0,03}$ mm	PDPT mm	CHWTL mm	s_1 mm	NOF	Solid carbide W2 Article no. 50 879 ... EUR	
7	1,10	16,0	1,18	0,50	0,10	1,00	6	48,61	292
	1,30	16,0	1,38	0,85	0,15	1,20	6	50,14	302
	1,60	16,0	1,68	1,00	0,15	1,50	6	50,14	304
	1,85	16,0	1,93	1,25	0,20	1,75	6	50,14	306
9	1,10	20,0	1,18	0,50	0,10	1,00	6	52,02	307
	1,30	20,0	1,38	0,85	0,15	1,20	6	52,02	308
	1,60	20,0	1,68	1,00	0,15	1,50	6	52,02	309
	1,60	21,7	1,68	1,00	0,15	1,50	6	52,02	312
	1,85	20,0	1,93	1,25	0,20	1,75	6	52,02	310
	1,85	21,7	1,93	1,25	0,20	1,75	6	52,02	314
	2,15	21,7	2,23	1,50	0,20	2,00	6	52,02	316
	2,65	21,7	2,73	1,75	0,20	2,50	6	52,02	318
10	1,30	26,0	1,38	0,85	0,15	1,20	6	54,11	322
	1,60	26,0	1,68	1,00	0,15	1,50	6	54,11	324
	1,85	26,0	1,93	1,25	0,20	1,75	6	54,11	326
	2,15	26,0	2,23	1,50	0,20	2,00	6	54,11	328
	2,65	26,0	2,73	1,75	0,20	2,50	6	54,11	330
	3,15	26,0	3,23	1,75	0,20	3,00	6	54,11	332

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

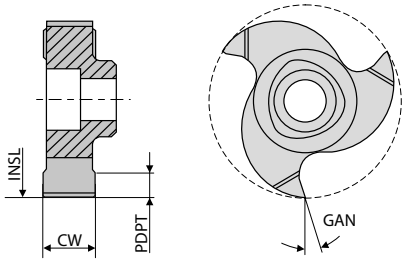
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Milling insert without profile

- ▲ with double sided edge break of 0,1x45°
- ▲ size 7: from 5,0 mm groove width with ground chip breaker
- ▲ size 10: from 6,5 mm groove width with ground chip breaker

Polygon



Ti500



Size	CW +/-0,02 mm	INSL mm	PDPT mm	GAN °	NOF	Solid carbide W2 Article no. 50 875 ... EUR	
6	1,5	11,7	2,25	6	3	34,28	302
	2,0	11,7	2,25	6	3	34,28	304
	2,5	11,7	2,25	6	3	35,05	306
	3,0	11,7	2,25	6	3	35,05	308
7	3,5	16,0	3,50	0	3	38,24	310
	3,5	16,0	3,50	8	3	38,24	312
	3,5	16,0	3,50	12	3	38,24	314
	5,0	16,0	3,50	0	3	43,20	316
	5,0	16,0	3,50	8	3	43,20	318
	5,0	16,0	3,50	12	3	43,20	320
10	4,0	25,0	5,70	0	3	39,68	330
	4,0	25,0	5,70	8	3	39,68	332
	4,0	25,0	5,70	12	3	39,68	334
	5,0	25,0	5,70	8	3	46,29	337
	6,5	25,0	5,70	0	3	48,50	340
	6,5	25,0	5,70	8	3	48,50	342
	6,5	25,0	5,70	12	3	48,50	344
	8,0	25,0	5,70	0	3	53,79	350
	8,0	25,0	5,70	8	3	53,79	352
	8,0	25,0	5,70	12	3	53,79	354

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

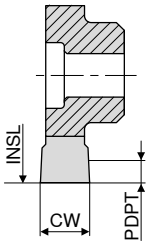
→ v_c/f_z Page 70

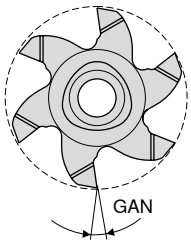
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Milling insert without profile

▲ both edges chamfered 0,1x45°

Polygon





Ti500



Size	CW +/-0,02 mm	INSL mm	PDPT mm	GAN °	NOF	Solid carbide W2 Article no. 50 876 ... EUR	
7	1,5	17,7	4,0	6	6	41,66	307
	2,0	17,7	4,0	6	6	41,88	308
	2,5	17,7	4,0	6	6	42,21	309
	3,0	16,0	3,5	6	6	47,83	302
	4,0	16,0	3,5	6	6	50,59	304
	5,0	16,0	3,5	6	6	52,14	306
9	1,5	21,7	5,0	6	6	48,06	314
	2,0	21,7	5,0	6	6	48,38	315
	2,5	21,7	5,0	6	6	48,38	316
	3,0	21,7	5,0	6	6	48,71	317
	3,0	20,0	4,2	6	6	48,71	311
	4,0	20,0	4,2	6	6	50,14	312
	5,0	20,0	4,2	6	6	53,01	313
10	1,5	27,7	6,8	6	6	59,19	330
	2,0	27,7	6,8	6	6	60,07	332
	2,5	27,7	6,8	6	6	60,07	334
	3,0	26,0	6,2	6	6	50,59	322
	3,0	27,7	6,8	6	6	60,94	336
	4,0	26,0	6,2	6	6	53,46	324
	5,0	26,0	6,2	6	6	53,68	326
	6,5	26,0	6,2	6	6	55,00	328

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

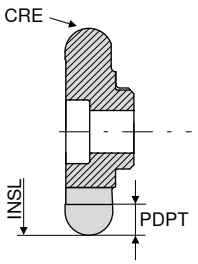
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Milling inserts for radius milling

Polygon



Ti500



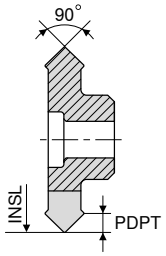
Size	CRE mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 886 ... EUR	
6	1,100	9,6	1,20	3	35,91	702
	0,788	11,7	2,25	3	35,91	704
	1,100	11,7	2,25	3	35,91	708
	1,190	11,7	2,25	3	35,91	706
7	0,788	17,7	4,20	6	45,39	712
	1,100	17,7	4,20	6	45,39	714
9	0,785	21,7	5,00	6	54,71	720
	1,000	21,7	5,00	6	54,71	722
	1,200	21,7	5,00	6	54,71	724
	1,400	21,7	5,00	6	54,71	726
	1,500	21,7	5,00	6	54,71	728

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

Milling inserts for chamfering and deburring

Polygon



Ti500



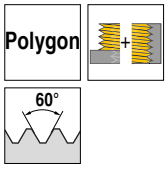
Size	PDPT mm	INSL mm	NOF	Solid carbide W2 Article no. 50 884 ... EUR	
6	1,2	9,6	3	32,62	292
	1,5	11,7	3	32,62	294
7	1,9	16,0	6	49,38	302
	1,3	17,7	6	49,48	304
9	1,9	20,0	6	51,14	312
	1,6	21,7	6	49,82	314
10	2,1	26,0	6	54,11	322

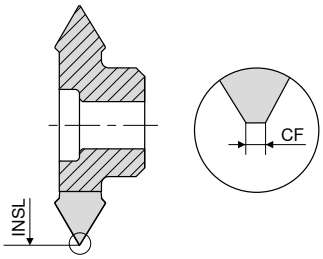
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

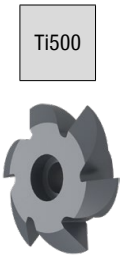
→ v_c/f_z Page 70

Thread milling insert – Partial profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!







Size	TP mm	INSL mm	CF mm	NOF	Solid carbide W2 Article no. 50 882 ... EUR	
6	1 - 3	11,7	0,10	3	47,29	292
7	1 - 3	17,7	0,10	6	53,01	306
	1 - 4	16,0	0,10	6	53,46	302
	2,5 - 4	16,0	0,25	6	53,01	304
9	1 - 2	21,7	0,10	6	53,89	314
	1 - 3	20,0	0,10	6	53,89	312
	2 - 4	21,7	0,15	6	53,89	316
10	1 - 3	26,0	0,10	6	57,42	322
	2,5 - 5	26,0	0,25	6	56,98	324

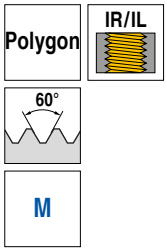
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

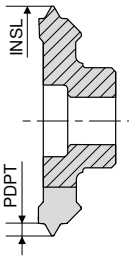
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread milling insert – Full profile







Size	TP	INSL	PDPT	NOF	Solid carbide W2 Article no. 50 881 ... EUR	
	mm	mm	mm			
6	1	9,6	0,572	3	57,64	292
	1,5	9,6	0,875	3	57,64	293
	2	10,5	1,157	3	57,64	296
7	1,5	16,0	0,875	6	66,02	302
	2	16,0	1,157	6	66,02	304
	2,5	16,0	1,430	6	66,02	306
	3	16,0	1,702	6	66,02	310
	M20x2,5	16,0	1,430	6	70,87	308 [1]
9	1,5	20,0	0,875	6	67,67	312
	2	20,0	1,157	6	67,67	314
	M24x3	20,0	1,702	6	67,67	316 [1]
10	1,5	26,0	0,875	6	70,31	322
	2	26,0	1,157	6	70,31	324
	3	26,0	1,702	6	70,31	330
	3,5	26,0	1,982	6	70,31	332
	4	26,0	2,263	6	70,31	334
	4,5	26,0	2,553	6	70,31	336
	5	26,0	2,836	6	69,66	337
	M30x3,5	24,0	1,982	6	69,66	331 [1]
	M36x4	26,0	2,263	6	69,66	335 [1]

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

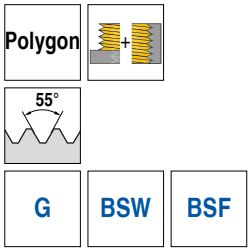
1) profile corrected

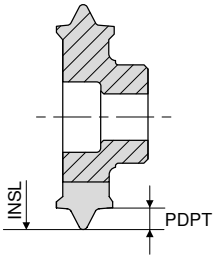
→ v_c/f_z Page 70

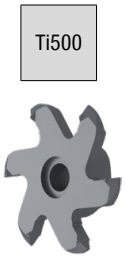
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Full profile

▲ 50 883 322 for threads > 1"







Size	TPI 1/"	TP mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 883 ... EUR	
6	19	1,337	9,6	0,871	3	57,64	292
7	14	1,814	17,7	1,177	6	64,37	308
	14	1,814	16,0	1,177	6	65,69	304
	11	2,309	16,0	1,494	6	66,02	302
	10	2,540	16,0	1,646	6	65,69	306
9	14	1,814	20,0	1,177	6	67,67	316
	11	2,309	20,0	1,494	6	67,67	314
10	11	2,309	26,0	1,494	6	70,31	322

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

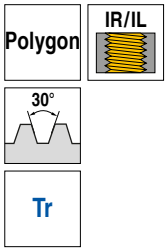
→ v_c/f_z Page 70

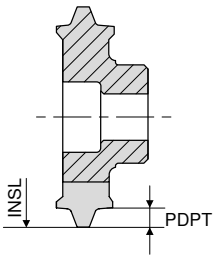
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

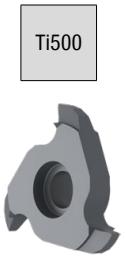
7

Thread milling insert – Full profile

▲ DIN 103







Size	TP mm	INSL mm	PDPT mm	NOF	Thread	Solid carbide W2 Article no. 50 872 ... EUR	
6	2	11,7	1,25	3	Tr 16x2 - Tr 20x2	62,94	292
	3	11,0	1,75	3	Tr 18x3 - Tr 20x3	62,94	294
	4	12,0	2,25	3	Tr 20x4	62,94	296 1)
7	3	14,0	1,75	3	Tr 24x3 - Tr 32x3	85,84	302 2)
	5	15,3	2,75	3	Tr 28x5 - Tr 36x5	85,84	306 3)
	5	15,3	2,75	3	Tr 26x5	85,84	304 3)
	6	16,2	3,50	3	Tr 34x6 - Tr 42x6	85,84	310 2)
	6	16,2	3,50	3	Tr 30x6 - Tr 32x6	85,84	308 2)
10	5	25,0	2,75	3	Tr 44x5 - Tr 48x5	108,70	322 4)
	7	22,0	3,75	3	Tr 38x7 - Tr 42x7	108,70	324 4)
	7	22,0	3,75	3	Tr 44x7	108,70	326 1)
	8	25,0	4,50	3	Tr 46x8 - Tr 48x8	125,90	328 4)
	8	25,0	4,50	3	Tr 50x8 - Tr 52x8	125,90	330 4)
	9	25,0	5,00	3	Tr 55x9 - Tr 60x9	125,90	332 4)
	10	25,0	5,50	3	Tr 65x10 - Tr 80x10	125,90	334 4)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

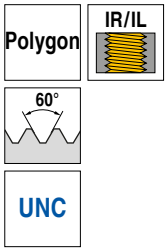
1) profile corrected
2) Not suitable for the 50 805 011 and 50 805 010 holders
3) Not suitable for the 50 805 011 and 50 805 010 holders / profile corrected
4) Not suitable for the 50 805 026, 50 805 025 and 50 805 024 holders

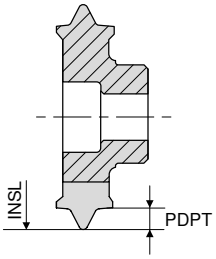
→ v_c/f_z Page 70

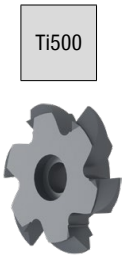
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!







Size	TPI 1/"	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 886 ... EUR	
6	12,0	9,6	1,228	3	57,64	202
	11,0	10,5	1,355	3	57,64	204
	10,0	11,7	1,485	3	57,64	206
7	9,0	16,0	1,577	6	65,69	212
9	8,0	18,0	1,809	6	67,67	222
	7,0	20,0	2,043	6	67,67	224
10	6,0	24,0	2,454	6	69,66	232
	5,0	26,0	2,979	6	69,66	234
	4,5	26,0	3,289	6	69,66	236

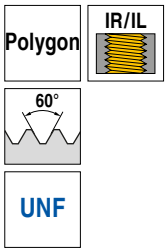
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

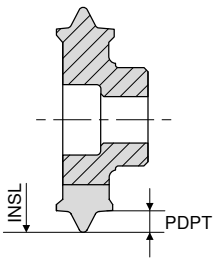
→ v_c/f_z Page 70

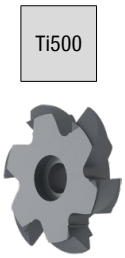
7

Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!







Size	Thread	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 886 ... EUR	
6	1/2 - 20	9,6	0,733	3	57,64	302
	9/16 - 18	10,5	0,827	3	57,64	304
	3/4 - 16	11,7	0,945	3	57,64	306
7	7/8 - 14	17,7	1,071	6	64,37	312
9	1 - 12	20,0	1,228	6	64,37	322

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

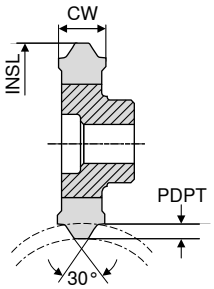
Gear cutters, DIN 5480

▲ Z_W = Tooth Number Wave

Polygon



Ti500





Size	Wave	Module	Z_w	CW mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 874 ... EUR	
7	W11	0,80	12	3	15,85	0,80	6	87,62	011
	W14	0,80	16	3	16,00	0,80	6	87,62	014
	W16	0,80	18	3	16,00	0,80	6	87,62	016
	W20	0,80	24	3	16,00	0,80	6	87,62	020
	W24	1,25	18	4	16,00	1,25	6	94,45	024
	W25	2,00	11	7	16,00	2,00	3	108,10	025
	W30	1,25	22	4	16,00	1,25	6	94,45	031
	W30	1,25	20	5	16,00	1,25	6	94,45	030
	W35	2,00	16	5	16,00	2,00	6	97,22	035
	W42	1,25	32	4	16,00	1,25	6	94,45	042
	W50	2,00	24	5	16,00	2,00	6	97,22	050

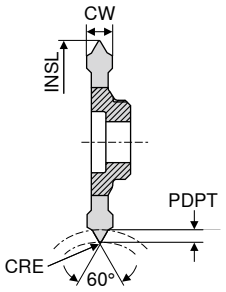
Gear cutters, DIN 5481

▲ Z_W = Tooth Number Wave

Polygon



Ti500





Size	Wave	Z_w	CW mm	INSL mm	CRE mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 874 ... EUR	
10	26 x 30	35	3	26	0,3	1,638	6	87,62	126
	40 x 44	38	3	26	0,4	1,940	6	87,62	140

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

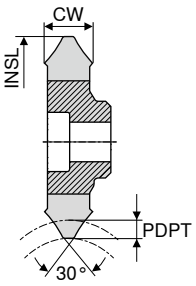
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Gear cutters, DIN 5482

▲ Z_W = Tooth Number Wave

Polygon





Ti500



Size	Wave	Module	Z_w	CW mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 874 ... EUR	
7	15 x 12	1,60	8	3,0	16	1,50	6	97,22	215
	17 x 14	1,60	9	5,0	16	1,50	6	87,62	217
	20 x 17	1,60	12	5,0	16	1,50	6	87,62	220
	25 x 22	1,60	14	5,0	16	1,65	6	97,22	225
10	35 x 31	1,75	18	6,5	26	2,00	6	101,20	235
	55 x 50	2,00	26	6,5	26	2,75	6	101,20	255

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

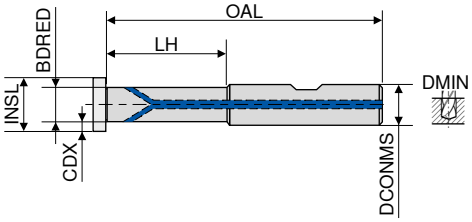
→ v_c/f_z Page 70

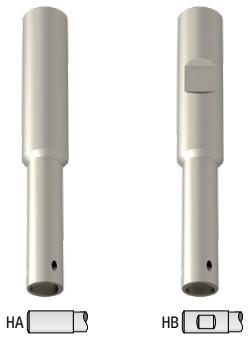
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Polygon circular end milling cutter

- ▲ for maximum machining depth, note insert width (CW)
- ▲ size 6 = for INSL 9,6; 10,5; 11,7; 12
- ▲ size 7 = for INSL 16; 17,7
- ▲ size 9 = for INSL 18; 20; 21,7
- ▲ size 10 = for INSL 24; 25; 26; 27,7

Polygon





Size	LH	CDX	DCONMS $_{h6}$	OAL	BDRED	DMIN	torque moment	HM W1 Article no. 50 805 ...		HM W1 Article no. 50 805 ...	
	mm	mm	mm	mm	mm	mm	Nm	EUR		EUR	
	20,00	2,25	12	67,5	7,0	12	1,0			139,90	050 [1]
	20,00	2,25	12	67,5	7,0	12	1,0			220,50	051
	20,00	2,25	12	67,5	7,0	12	1,0	220,50	052		
6	30,00	2,25	12	80,0	7,0	12	1,0			231,00	053
	30,00	2,25	12	80,0	7,0	12	1,0	231,00	054		
	40,00	2,25	12	100,0	7,0	12	1,0			250,10	055
	40,00	2,25	12	100,0	7,0	12	1,0	250,10	056		
	20,90	4,00	12	67,4	9,0	18	1,1			139,90	002 [1]
	21,00	4,00	12	67,4	9,0	18	1,1			220,50	004
	21,00	4,00	12	67,4	9,0	18	1,1	220,50	005		
7	36,00	4,00	12	82,4	9,0	18	1,1			225,80	008
	36,00	4,00	12	82,4	9,0	18	1,1	234,20	085		
		4,00	12	122,5	12,0	18	1,1	275,50	010		
		4,00	12	82,4	12,0	18	1,1	216,20	011		
	29,75	5,00	16	80,0	11,5	22	3,8			139,90	070 [1]
	30,00	5,00	16	80,0	11,5	22	3,8			258,50	071
9	30,00	5,00	16	80,0	11,5	22	3,8	258,50	072		
	50,00	5,00	16	100,0	11,5	22	3,8			267,10	073
	50,00	5,00	16	100,0	11,5	22	3,8	267,10	074		
	20,50	5,70	16	105,0	15,5	28	5,5	260,70	025		
	20,50	6,80	16	149,7	15,5	28	5,5	372,00	024		
	20,50	6,80	20	175,4	15,5	28	5,5	431,30	026		
	30,40	6,80	16	79,6	13,6	28	5,5			145,20	012 [1]
10	30,50	6,80	16	79,6	13,6	28	5,5	258,50	015		
	30,50	6,80	16	79,6	13,6	28	5,5			258,50	014
	45,50	6,80	16	94,6	13,6	28	5,5	267,10	021		
	45,50	6,80	16	94,6	13,6	28	5,5			267,10	020
	60,50	6,80	16	109,6	13,6	28	5,5			283,00	022
	60,50	6,80	16	109,6	13,6	28	5,5	283,00	023		

1) Steel version


Key D

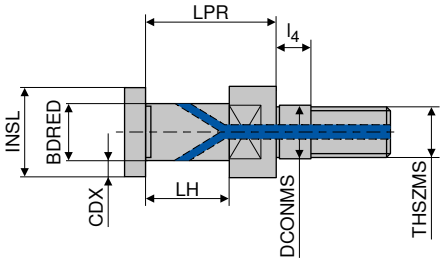

Clamping screw

Spare parts Size		Y7 Article no. 80 950 ... EUR			2A Article no. 70 960 ... EUR	
6	T08 - IP	10,20	125	M2,5x7	6,27	246
7	T08 - IP	10,20	125	M3x13	6,27	231
9	T15 - IP	11,89	128	M4x13	6,27	236
10	T20 - IP	12,54	129	M5x13,5	6,27	243

Polygon circular screw-in milling cutter

- size 7 = for INSL 16; 17,7
- size 10 = for INSL 25; 26
- steel version

Polygon





Size	CDX	LH	DCONMS $_{h6}$	LPR	THSZMS	TQX	BDRED	l_4	torque moment	W1 Article no. 50 799 ...	
	mm	mm	mm	mm		Nm	mm	mm	Nm	EUR	
7	3,5	16,0	8,5	26,0	M8	25	9,0	5,5	1,1	199,30	002
10	5,7	25,5	12,5	38,5	M12	60	13,6	5,0	5,5	199,30	012

7


Key D


Clamping screw

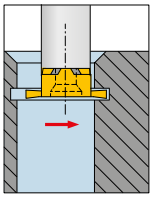
Spare parts		Y7 Article no. 80 950 ...		2A Article no. 70 960 ...	
Size		EUR		EUR	
7	T08 - IP	10,20	125	M3x13	6,27	231
10	T20 - IP	12,54	129	M5x13,5	6,27	243

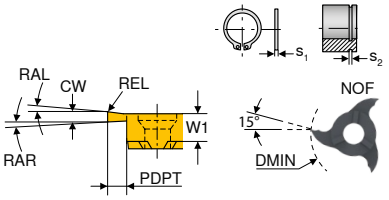
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for circlip grooves

Mini Mill | ≥ Ø 10 mm | DIN 471/472

CWX500







Size	DMIN mm	$s_{2\ H13}$ mm	CW $_{-0,02}$ mm	PDPT mm	W1 mm	RAR °	REL mm	s_1 mm	NOF	W2 Article no. 53 006 ... EUR	
10	10	0,70	0,74	1,5	3,50	1		0,60	3	33,40	070
	10	0,80	0,84	1,5	3,50	1		0,70	3	33,40	080
	10	0,90	0,94	1,5	3,50	1		0,80	3	33,40	090
	10	1,10	1,21	1,5	3,50	3		1,00	3	29,86	110
	10	1,30	1,41	1,5	3,50	3	0,10	1,20	3	29,86	130
	10	1,60	1,71	1,5	3,50	3	0,10	1,50	3	29,86	160
	12	1,10	1,21	2,5	3,50	3		1,00	3	29,86	112
	12	1,30	1,41	2,5	3,50	3	0,10	1,20	3	29,86	132
	12	1,60	1,71	2,5	3,50	3	0,10	1,50	3	29,86	162
18	18	0,70	0,74	1,5	5,75	1		0,60	3	34,06	270
	18	0,80	0,84	1,7	5,75	1		0,70	3	34,06	280
	18	0,90	0,94	1,9	5,75	1		0,80	3	34,06	290
	18	1,10	1,21	3,5	5,75	3		1,00	3	31,96	310
	18	1,30	1,41	3,5	5,75	3	0,10	1,20	3	31,96	330
	18	1,60	1,71	3,5	5,75	3	0,10	1,50	3	31,96	360
22	22	0,70	0,74	1,5	5,70	1		0,60	3	36,15	470
	22	0,80	0,84	1,7	5,70	1		0,70	3	35,48	480
	22	0,90	0,94	1,9	5,70	1		0,80	3	32,41	490
	22	1,00	1,04	2,1	5,70	1		0,90	3	34,28	500
	22	1,10	1,21	2,5	5,70	1		1,00	3	34,28	510
	22	1,30	1,41	4,5	5,70	3	0,10	1,20	3	32,62	530
	22	1,60	1,71	4,5	5,70	3	0,10	1,50	3	32,62	560
	22	1,85	1,96	4,5	5,70	3	0,15	1,75	3	32,62	585
	22	2,15	2,26	4,5	5,70	3	0,15	2,00	3	32,62	615
	22	2,65	2,76	4,5	5,70	3	0,15	2,50	3	32,62	665
	22	3,15	3,26	4,5	5,70	3	0,20	3,00	3	32,62	415
	22	4,15	4,26	4,5	5,70	3	0,20	4,00	3	32,62	515
	22	5,15	5,26	4,5	5,70	3	0,20	5,00	3	32,62	605

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

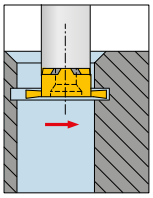
→ v_c/f_z Page 71

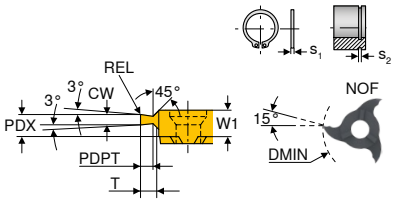
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for circlip grooves with chamfer facet

Mini Mill | ≥ Ø 22 mm | DIN 471/472

CWX500







Size	DMIN mm	$s_{2\ H13}$ mm	CW $_{-0,02}$ mm	T mm	PDPT mm	W1 mm	PDX mm	REL mm	s_1 mm	NOF	W2 Article no. 53 006 ... EUR	
22	22	1,10	1,21	0,50	0,49	5,85	5,07		1,00	3	35,48	805
	22	1,30	1,41	0,70	0,67	5,85	5,17		1,20	3	35,48	807
	22	1,30	1,41	0,85	0,83	5,85	5,17		1,20	3	35,48	808
	22	1,60	1,71	0,85	0,83	5,85	5,07		1,50	3	35,48	809
	22	1,60	1,71	1,00	0,97	5,85	5,07		1,50	3	35,48	810
	22	1,85	1,96	1,25	1,23	5,85	5,19	0,15	1,75	3	35,48	812
	22	2,15	2,26	1,50	1,47	5,85	5,34	0,15	2,00	3	35,48	815
	22	2,65	2,76	1,75	1,72	5,85	5,09	0,15	2,50	3	35,48	817
	22	2,65	2,76	1,50	1,47	5,85	5,09	0,15	2,50	3	35,48	816
	22	3,15	3,26	1,75	1,72	5,85	5,34	0,20	3,00	3	35,48	818
	22	4,15	4,26	2,50	2,47	5,85	5,34	0,20	4,00	3	35,48	825
	22	4,15	4,26	2,00	1,97	5,85	5,34	0,20	4,00	3	35,48	820

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

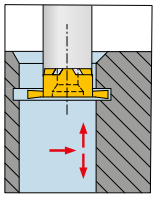
→ v_c/f_z Page 71

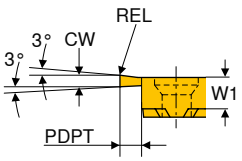
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

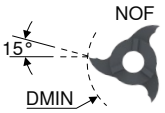
7

MiniMill – Milling insert for groove milling

Mini Mill | ≥ Ø 10 mm | CWX500









Size	DMIN	CW +0,02	PDPT	W1	REL	NOF	W2 Article no. 53 007 ...	
	mm	mm	mm	mm	mm		EUR	
10	10	1,0	1,5	3,50		3	33,40	010
	10	1,5	1,5	3,50	0,2	3	29,86	015
	10	2,0	1,5	3,50	0,2	3	29,86	020
	10	2,5	1,5	3,50	0,2	3	29,86	025
	12	1,5	2,0	3,50	0,2	6	51,69	114
	12	1,5	2,5	3,50	0,2	3	29,86	115
	12	2,0	2,0	3,50	0,2	6	51,69	119
	12	2,0	2,5	3,50	0,2	3	29,86	120
	12	2,5	2,5	3,50	0,2	3	29,86	125
14	14	1,0	2,5	4,50		3	34,06	210
	14	1,5	2,5	4,50	0,2	3	31,30	215
	14	2,0	2,5	4,50	0,2	3	31,30	220
	14	2,5	2,5	4,50	0,2	3	31,30	225
	16	1,5	3,5	4,50	0,2	3	31,30	315
	16	2,0	3,5	4,50	0,2	3	31,30	320
	16	2,5	3,5	4,50	0,2	3	31,30	325
18	18	1,5	3,5	5,75	0,1	6	58,52	414
	18	1,5	3,5	5,75	0,2	3	31,96	415
	18	2,0	3,5	5,75	0,2	6	58,52	419
	18	2,0	3,5	5,75	0,2	3	31,96	420
	18	2,5	3,5	5,75	0,2	6	58,52	424
	18	2,5	3,5	5,75	0,2	3	31,96	425
	18	3,0	3,5	5,75	0,2	6	58,52	429
	18	3,0	3,5	5,75	0,2	3	31,96	430
	18	4,0	3,5	5,75	0,2	3	31,96	440
22	22	1,0	4,5	6,20	0,1	6	57,31	810
	22	1,5	4,5	6,20	0,1	6	56,21	815
	22	1,5	4,5	5,70	0,2	3	33,40	515
	22	2,0	4,5	5,70	0,2	3	33,40	520
	22	2,0	4,5	6,20	0,2	6	56,21	820
	22	2,5	4,5	5,70	0,2	3	33,40	525
	22	2,5	4,5	6,20	0,2	6	56,21	825
	22	3,0	4,5	5,70	0,2	3	33,40	530
	22	3,0	4,5	6,20	0,2	6	56,21	830
	22	3,5	4,5	5,70	0,2	3	33,40	535
	22	4,0	4,5	5,70	0,2	3	33,40	540
	22	4,0	4,5	6,20	0,2	6	56,21	840
28	25	2,0	5,0	6,50	0,2	3	38,24	620
	25	2,5	5,0	6,50	0,2	3	38,24	625
	25	3,0	5,0	6,50	0,2	3	38,24	630
	25	3,5	5,0	6,50	0,2	3	38,24	635
	25	4,0	5,0	6,50	0,2	3	38,24	640
	28	1,0	6,5	6,25	0,1	6	63,71	610
	28	1,5	6,5	6,25	0,1	6	62,82	615
	28	1,5	6,5	6,50	0,2	3	38,24	715
	28	2,0	6,5	6,25	0,2	6	63,60	721
	28	2,0	6,5	6,50	0,2	3	38,24	720
	28	2,5	6,5	6,25	0,2	6	64,26	726
	28	2,5	6,5	6,50	0,2	3	38,24	725
	28	3,0	6,5	6,50	0,2	3	38,24	730
	28	3,0	6,5	6,25	0,2	6	64,92	731
	28	3,5	6,5	6,50	0,2	3	38,24	735
	28	4,0	6,5	6,25	0,2	6	66,34	741
	28	4,0	6,5	6,50	0,2	3	38,24	740
	28	5,0	6,5	6,50	0,2	3	38,24	750
	28	6,0	6,5	6,50	0,2	3	39,01	760

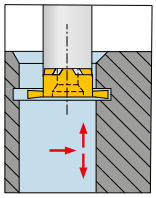
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

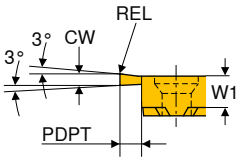
→ v_c/f_z Page 71

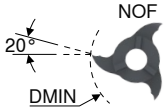
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for groove milling (specialist for aluminium)

Mini Mill | ≥ Ø 32 mm | CWX500









Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 007 ...	EUR
28	32	2,0	8,5	6,5	0,2	3	42,66	920
	32	2,5	8,5	6,5	0,2	3	42,66	925
	32	3,0	8,5	6,5	0,2	3	42,66	930

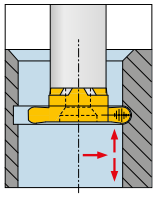
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

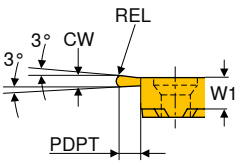
→ v_c/f_z Page 71

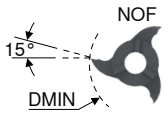
7

MiniMill – Milling insert for groove milling with full radius

Mini Mill | ≥ Ø 22 mm | CWX500









Size	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 008 ...	EUR
10	12	2,2	2,5	3,50	1,1	3	38,24	011
14	16	2,2	3,5	4,60	1,1	3	38,91	111
18	18	2,2	3,5	5,75	1,1	3	39,68	211
22	22	1,0	4,5	5,75	0,5	3	39,68	305
	22	1,6	4,5	5,75	0,8	3	40,34	308
	22	2,0	4,5	5,75	1,0	3	39,68	310
	22	2,4	4,5	5,75	1,2	3	41,11	312
	22	2,8	4,5	5,75	1,4	3	39,68	314
	22	3,0	4,5	5,75	1,5	3	39,68	315
	22	4,0	4,5	5,75	2,0	3	39,68	320
	22	4,4	4,5	5,75	2,2	3	40,88	322
	22	5,0	4,5	5,75	2,5	3	42,43	325

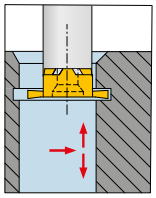
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

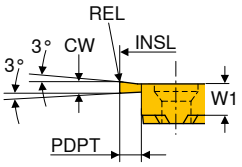
→ v_c/f_z Page 71

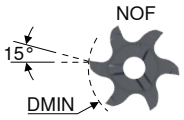
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for groove milling, cross-pitched

Mini Mill | ≥ Ø 22 mm | CWX500









Size	DMIN	INSL	CW +0,02	PDPT	W1	REL	NOF	W2 Article no. 53 015 ...
	mm	mm	mm	mm	mm	mm		EUR
10	12	11,7	1,5	2,0	3,5	0,2	6	51,47 **114**
	12	11,7	2,0	2,0	3,5	0,2	6	51,47 **119**
14	16	15,7	1,5	2,5	4,5	0,2	6	52,14 **314**
	16	15,7	2,0	2,5	4,5	0,2	6	52,14 **319**
	16	15,7	2,5	2,5	4,5	0,2	6	52,14 **324**
18	18	17,7	2,0	4,0	5,8	0,2	6	58,19 **419**
	18	17,7	2,5	4,0	5,8	0,2	6	58,19 **424**
	18	17,7	3,0	4,0	5,8	0,2	6	58,19 **429**
	20	19,7	2,0	5,0	5,8	0,2	6	58,19 **469**
	20	19,7	2,5	5,0	5,8	0,2	6	58,19 **474**
	20	19,7	3,0	5,0	5,8	0,2	6	58,19 **479**
22	22	21,7	2,0	4,5	6,2	0,2	6	56,21 **820**
	22	21,7	2,5	4,5	6,2	0,2	6	56,21 **825**
	22	21,7	3,0	4,5	6,2	0,2	6	56,21 **830**
	22	21,7	4,0	4,5	6,2	0,2	6	56,21 **840**
	37	36,7	1,5	12,0	6,2	0,1	6	76,49 **865**
	37	36,7	2,0	12,0	6,2	0,2	6	77,59 **870**
28	25	24,8	2,5	5,0	6,4	0,2	6	65,58 **626**
	25	24,8	3,0	5,0	6,4	0,2	6	66,34 **631**
	25	24,8	4,0	5,0	6,4	0,2	6	67,67 **641**
	25	24,8	5,0	5,0	6,4	0,2	6	69,87 **651**
	25	24,8	6,0	5,0	6,4	0,2	6	74,17 **661**
	28	27,7	2,5	6,5	6,2	0,2	6	63,92 **726**
	28	27,7	3,0	6,5	6,2	0,2	6	64,58 **731**
	28	27,7	4,0	6,5	6,2	0,2	6	66,02 **741**
	28	27,7	5,0	6,5	6,2	0,2	6	66,89 **751**
	28	27,7	6,0	6,5	6,2	0,2	6	66,89 **761**
	35	34,7	2,0	10,0	6,2	0,2	6	70,21 **770**
	35	34,7	2,5	10,0	6,2	0,2	6	70,87 **775**
	35	34,7	3,0	10,0	6,2	0,2	6	71,53 **780**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

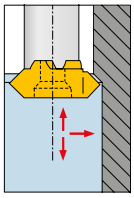
→ v_c/f_z Page 71

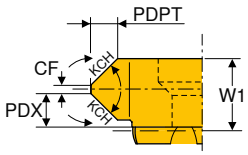
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

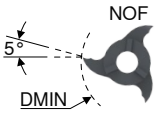
MiniMill – Milling insert for groove milling and chamfering

Mini Mill | ≥ Ø 10 mm

CWX500









Size	DMIN mm	CF +0,03 mm	PDPT mm	W1 mm	KCH °	PDX mm	NOF	W2 Article no. 53 009 ... EUR	
10	10	0,2	0,35	3,60	15	1,80	6	52,02	015
	10	0,2	0,45	3,60	20	1,80	6	52,02	020
	10	0,2	0,70	3,60	30	1,80	6	52,02	030
	10	0,2	1,20	3,60	45	1,80	6	52,02	045
	12	1,2	0,80	3,50	45	1,20	3	25,68	035
14	16	1,4	1,20	4,50	45	1,60	3	26,33	145
18	18	2,5	1,40	5,85	45	1,70	3	26,88	258
	18	0,2	2,20	5,75	45	3,00	6	57,64	259
22	22	2,0	1,70	5,85	45	2,00	3	28,43	358
	22	0,2	2,50	6,40	45	3,90	6	56,43	463
	22	3,0	3,00	9,40	45	3,25	3	29,86	394 1)
28	28	0,2	1,90	6,05	45	3,75	6	62,71	560

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

1) use clamping screw 73 082 006

→ v_c/f_z Page 71

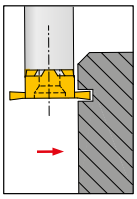
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

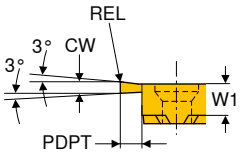
7

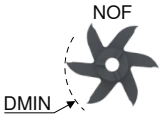
MiniMill – Milling insert for part-off

▲ PDPT = 12,0 mm in combination with holder 53 003 624
▲ reduce feed rate by 50 %

Mini Mill | ≥ Ø 37 mm | CWX500









Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 013 ...	EUR	
22	37	0,5	12	5,6		6	91,37	705	1)
	37	0,6	12	5,7		6	91,04	706	1)
	37	0,8	12	6,0		6	89,82	708	1)
	37	1,0	12	6,2	0,1	6	87,29	710	
	37	1,5	12	6,2	0,1	6	74,39	715	

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

1) the end face is not ground free to the center

→ v_c/f_z Page 71

MiniMill – Set for cut off

▲ size 22

Mini Mill

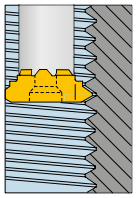


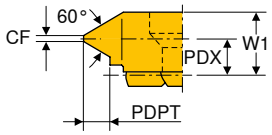
Tool	Designation	Article no.	Hole-Ø mm	Piece	W1 Article no. 53 014 ... EUR	
Inserts	Milling inserts for separating	53 013 715	37	2		
Tool holder	Endmill short	53 003 624		1	210,90	990
Screw	M5 x 12	73 082 005		1		
Tightening Key	T20			1		

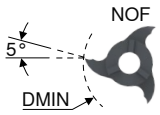
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for internal thread milling – Partial profile

Mini Mill | ≥ M12 | 60° | CWX500









Size	Thread$_{min}$	TP mm	DMIN mm	CF mm	PDPT mm	W1 mm	PDX mm	NOF	W2 Article no. 53 010 ... EUR	
10	M12	1,0 - 1,75	9,8	0,13	1,08	3,20	2,4	6	58,31	017
	M14	1,0 - 1,75	11,7	0,13	1,08	3,60	2,8	3	39,68	010
	M14	1,0 - 2,0	10,1	0,13	1,25	3,20	2,2	6	58,31	021
	M14	1,0 - 2,0	11,7	0,13	1,25	3,60	2,8	3	39,68	020
	M16	1,5 - 2,75	11,0	0,19	1,67	3,20	2,0	6	58,31	027
	M16	1,5 - 2,75	11,7	0,19	1,67	3,60	2,4	3	39,68	015
	M16	2,0 - 3,0	11,1	0,25	1,78	3,20	1,9	6	58,31	029
	M16	2,0 - 3,0	11,7	0,25	1,78	3,60	2,2	3	39,68	030
14	M18	1,0 - 1,75	15,7	0,12	1,08	4,60	3,8	3	40,34	210
	M18	1,0 - 2,0	15,7	0,12	1,25	4,60	3,5	3	40,34	220
	M20	1,5 - 2,75	15,7	0,18	1,67	4,60	3,5	3	40,34	215
	M22	2,5 - 3,0	15,7	0,31	1,78	4,60	3,4	3	40,34	230
18	M22	1,0 - 1,75	17,7	0,12	1,03	5,85	5,0	3	43,09	410
	M22	1,0 - 2,0	17,7	0,12	1,19	5,85	4,7	3	40,34	412
	M22	1,0 - 2,0	17,7	0,12	1,19	5,85	5,0	6	68,00	416
	M22	1,5 - 2,75	17,7	0,19	1,62	5,85	4,6	3	40,34	415
	M24	2,0 - 3,0	17,7	0,25	1,73	5,85	4,4	3	40,34	425
	M24	2,0 - 3,5	17,7	0,25	2,06	5,85	4,2	3	40,34	455
	M24	2,0 - 3,5	17,7	0,25	2,06	5,85	4,3	6	69,44	434
	M24	2,0 - 3,75	17,7	0,25	2,22	5,85	4,2	3	40,34	420
	M24	2,5 - 5,0	17,7	0,31	2,98	5,85	3,8	3	40,34	430
	M24	3,0 - 5,5	17,7	0,38	3,25	5,85	4,2	3	40,34	435
22	M27	1,0 - 2,0	21,7	0,12	1,19	5,85	4,6	3	41,77	610
	M27	1,0 - 2,0	21,7	0,12	1,19	6,20	5,0	6	66,68	710
	M27	1,5 - 2,75	21,7	0,18	1,62	5,85	4,5	3	41,77	615
	M27	2,0 - 3,75	21,7	0,25	2,22	5,85	4,2	3	41,77	620
	M27	2,5 - 4,5	21,7	0,25	2,70	5,85	3,7	3	43,09	655
	M27	2,0 - 4,5	21,7	0,25	2,70	6,05	4,2	6	67,89	755
	M30	2,5 - 5,0	21,7	0,31	2,98	5,85	3,8	3	41,77	630
	M30	3,5 - 6,0	21,7	0,44	3,52	5,85	3,4	3	43,09	640
	M30	3,5 - 6,5	21,7	0,44	3,84	5,85	3,2	3	43,09	645
28	M33	1,0 - 2,0	27,7	0,12	1,20	6,60	4,5	3	48,83	820
	M33	1,5 - 2,5	27,7	0,18	1,49	6,60	4,3	3	48,83	825
	M33	1,5 - 2,5	27,7	0,19	1,60	6,10	5,0	6	73,07	826
	M36	2,5 - 5,0	27,7	0,38	2,93	6,10	2,3	6	73,07	850
	M36	2,5 - 5,0	27,7	0,37	2,93	6,60	4,0	3	48,83	840
	M39	4,0 - 6,0	27,7	0,62	3,37	6,60	3,6	3	48,83	860

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

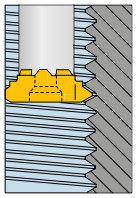
7

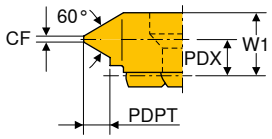
MiniMill – Milling insert for internal thread milling – Full profile

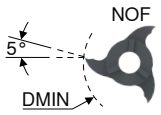
Mini Mill | ≥ M22

60° | M

CWX500









Size	Thread$_{min}$	TP mm	DMIN mm	CF mm	PDPT mm	W1 mm	PDX mm	NOF	W2 Article no. 53 011 ...	
									EUR	
18	M22	1,50	17,7	0,18	0,81	5,85	4,8	3	41,77	415
	M22	1,75	17,7	0,20	0,95	5,85	4,7	3	44,53	417
	M22	2,00	17,7	0,25	1,08	5,85	4,6	3	44,53	420
	M24	2,50	17,7	0,31	1,35	5,85	4,4	3	44,53	425
	M27	3,00	17,7	0,37	1,62	5,85	4,3	3	44,53	430
	M27	3,50	17,7	0,43	1,89	5,85	4,0	3	44,53	435
22	M24	1,50	21,7	0,19	0,81	5,85	4,8	3	43,87	615
	M24	1,50	21,7	0,19	0,81	6,20	5,3	6	66,57	715
	M27	1,75	21,7	0,22	0,95	6,20	5,2	6	69,99	717
	M27	1,75	21,7	0,22	0,95	5,85	4,7	3	43,87	617
	M27	2,00	21,7	0,25	1,08	5,85	4,6	3	45,85	620
	M27	2,00	21,7	0,25	1,08	6,20	5,0	6	69,99	720
	M30	3,00	21,7	0,37	1,62	5,85	4,3	3	45,85	630
	M30	3,00	21,7	0,37	1,62	6,20	4,8	6	71,31	730
	M30	3,50	21,7	0,43	1,89	5,85	4,0	3	49,26	635
	M33	4,00	21,7	0,50	2,16	5,85	3,9	3	49,26	640
	M33	4,00	21,7	0,50	2,16	6,20	4,4	6	75,06	740
	M33	4,50	21,7	0,56	2,43	5,85	3,7	3	49,26	645

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

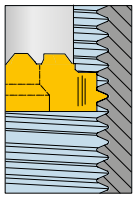
→ v_c/f_z Page 71

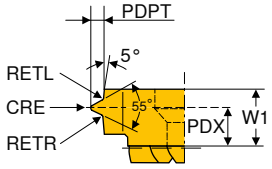
MiniMill – Milling insert for internal thread milling – Full profile

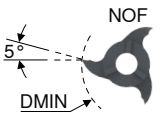
Mini Mill | ≥ G 3/8"

55° | G

CWX500









Size	Thread$_{min}$	TP mm	DMIN mm	TPI 1/"	W1 mm	PDX mm	PDPT mm	CRE mm	RETL mm	RETR mm	NOF	W2 Article no. 53 012 ... EUR	
10	G 3/8"	1,34	11,7	19	3,60	2,5	0,860	0,18	0,18	0,18	3	49,16	113
	G 1/2"	1,81	11,7	14	3,60	2,3	1,160	0,24	0,24	0,24	3	49,16	118
	G 1"	2,31	11,7	11	3,60	2,0	1,480	0,31	0,31	0,31	3	49,16	123
18	-	1,34	17,7	19	5,85	4,9	0,856	0,18	0,18	0,18	3	42,43	219
	G 3/4"	1,81	17,7	14	5,85	4,6	1,160	0,24	0,24	0,24	3	42,43	214
	G 1"	2,31	17,7	11	5,85	4,4	1,480	0,31	0,31	0,31	3	42,43	211
22	G 1"	2,31	21,7	11	5,85	4,0	1,480	0,31	0,31	0,31	3	50,69	311
	-	3,17	21,7	8	5,85	3,5	2,030	0,43	0,43	0,43	3	54,89	308
	BSW 1 1/2"	4,23	21,7	6	5,85	3,1	2,710	0,58	0,58	0,58	3	54,89	306

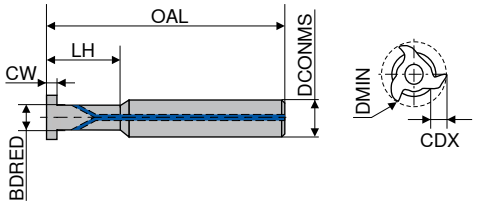
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c/f_z Page 71

MiniMill – Circular milling cutter, extra short

▲ steel Version

Mini Mill





Steel
W1

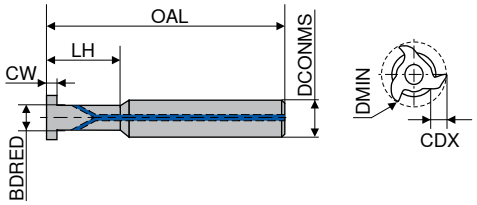
Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	Article no. 53 004 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	EUR	
10	10	6,0	60	15,2	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	104,90	015
14	10	8,0	60	17,7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	104,90	217
	13	8,0	70	25,7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	108,10	225
18	10	9,0	60	17,0	17,7	≤5,6	3,5	4,5	104,90	417
	13	9,0	70	25,0	17,7	≤5,6	3,5	4,5	108,10	425
22	10	11,3	60	10,7	21,7	≤9,15	4,5	7,0	108,10	610
	13	11,3	70	25,7	21,7	≤9,15	4	7,0	112,20	625
28	13	14,0	70	10,7	27,7	≤10	6,5	7,0	108,10	810
	20	14,0	100	35,7	27,7	≤10	6,5	7,0	112,20	835

7

MiniMill – Circular milling cutter, short

▲ steel Version

Mini Mill





Steel
W1



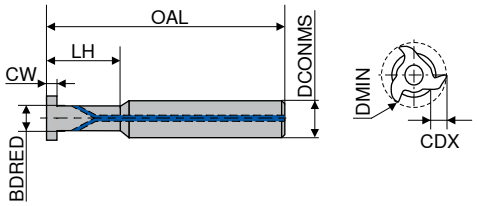
Steel
W1

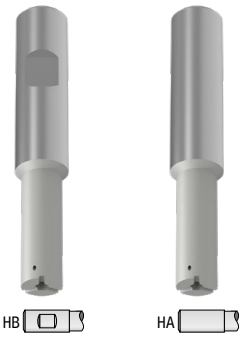
Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	Article no. 53 002 ...		Article no. 53 003 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	EUR		EUR	
10	16	6	80	12,0	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	121,60	012	121,60	012
14	16	8	80	16,0	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	121,60	216	121,60	216
18	16	9	80	18,0	17,7	≤5,6	3,5	4,5	118,50	418	118,50	418
22	16	12	80	24,0	21,7	≤9,15	4,5	7,0	119,60	624	119,60	624
28	20	14	100	35,7	27,7	≤10	6,5	7,0			112,20	835

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Circular milling cutter, vibration-damped

Mini Mill





HM W1 — HM W1

Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	Article no. 53 001 ...		Article no. 53 000 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	EUR		EUR	
10	12	6,0	80	21	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	156,80	021	156,80	021
	12	6,0	90	30	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	168,50	030	168,50	030
	12	6,0	100	42	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	191,80	042	191,80	042
	12	7,3	90	30	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	177,00	130	177,00	130
	16	7,3	100	25	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	260,70	025	260,70	025
14	12	8,0	95	29	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	156,80	229	156,80	229
	12	8,0	110	42	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	169,50	242	169,50	242
	12	8,0	120	56	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	191,80	256	191,80	256
	12	9,5	110	42	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	191,80	342	191,80	342
	16	9,5	110	33	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	238,50	233	238,50	233
18	12	9,0	100	32	17,7	≤5,6	3,5	4,5	195,00	432	195,00	432
	12	9,0	100	45	17,7	≤5,6	3,5	4,5	218,30	445	218,30	445
	12	9,0	120	64	17,7	≤5,6	3,5	4,5	258,50	464	258,50	464
	16	9,0	93	25	17,7	≤5,6	3,5	4,5	218,30	425	218,30	425
	16	9,0	100	32	17,7	≤5,6	3,5	4,5	229,90	532	229,90	532
	16	9,0	110	45	17,7	≤5,6	3,5	4,5	270,30	545	270,30	545
	16	9,0	130	64	17,7	≤5,6	3,5	4,5	310,50	564	310,50	564
	16	13,0	110	64	17,7	≤5,6	1,5	4,5	238,50	465	238,50	465
	16	13,0	130	66	17,7	≤5,6	1,5	4,5	302,00	466	302,00	466
22	12		100	42	21,7	≤9,15	4,5	7,0	171,70	642	171,70	642
	12		130	60	21,7	≤9,15	4,5	7,0	203,50	660	203,50	660
	16	11,5	90	30	21,7	≤9,15	4,5	7,0	218,30	630	218,30	630
	16	12,0	100	42	21,7	≤9,15	4,5	7,0	226,80	742	226,80	742
	16	12,0	130	60	21,7	≤9,15	4,5	7,0	271,30	760	271,30	760
	16	12,0	160	85	21,7	≤9,15	4,5	7,0	307,30	685	307,30	685
	20	16,0	110	45	21,7	≤9,15	2,5	7,0	330,60	645	330,60	645
	20	16,0	130	65	21,7	≤9,15	2,5	7,0	332,80	665	332,80	665
28	16	14,3	100	42	27,7 / 24,8	≤10	6,5 / 5	7,0	240,60	842	240,60	842
	16	14,3	130	60	27,7 / 24,8	≤10	6,5 / 5	7,0	286,10	860	286,10	860
	16	14,3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	333,80	885	333,80	885
	20	13,5	104	35	27,7 / 24,8	≤10	6,5 / 5	7,0	297,80	835	297,80	835
	20	14,3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	380,40	985	380,40	985

Y7 — Y5 — Y5


Key D


Clamping screw


Clamping screw

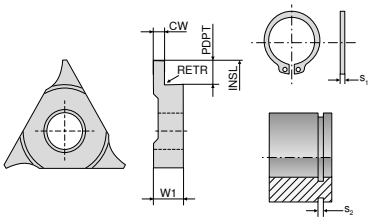
Spare parts		Article no. 80 950 ...			Article no. 73 082 ...			Article no. 73 082 ...	
Size		EUR			EUR			EUR	
10	T08	7,80	110				M2,6	3,15	002
14	T10	9,14	112				M3,5	3,15	003
18	T15	9,28	113				M4	3,15	004
22	T20	9,95	114	M5	6,80	006	M5	3,15	005
28	T20	9,95	114				M5	3,15	005

Clamping screw 73 082 006 only for insert 53 009 394.

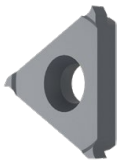
Milling inserts for circlip grooves without chamfer

System 300

DIN 471/472



Ti500



Solid carbide
W2

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	$CW_{-0,03}$ mm	PDPT mm	RETR mm	s_1 mm	Article no. 50 853 ... EUR	
04	0,90	7,9	2,34	0,98	0,70	0,3	0,80	39,68	300
03	0,90	10,6	2,34	0,98	0,70	0,3	0,80	32,73	302
	1,10	10,6	2,34	1,18	0,90	0,3	1,00	32,73	304
	1,30	10,6	2,34	1,38	1,10	0,3	1,20	32,73	306
	1,60	10,6	2,34	1,68	1,25	0,3	1,50	32,73	308
	1,85	10,6	2,34	1,93	1,25	0,3	1,75	32,73	310
02	0,90	17,5	3,50	0,98	0,70	0,3	0,80	29,54	312
	1,10	17,5	3,50	1,18	0,90	0,3	1,00	29,54	314
	1,30	17,5	3,50	1,38	1,10	0,3	1,20	29,54	316
	1,60	17,5	3,50	1,68	1,25	0,3	1,50	29,54	318
	1,85	17,5	3,50	1,93	1,25	0,3	1,75	29,54	320
	2,15	17,5	3,50	2,23	1,75	0,3	2,00	29,54	322
	2,65	17,5	3,50	2,73	1,75	0,3	2,50	29,54	324
	3,15	17,5	3,50	3,23	2,20	0,3	3,00	29,54	326
01	0,90	23,0	4,00	0,98	0,70	0,3	0,80	29,54	328
	1,10	23,0	4,00	1,18	0,90	0,3	1,00	29,54	330
	1,30	23,0	4,00	1,38	1,10	0,3	1,20	29,54	332
	1,60	23,0	4,00	1,68	1,25	0,3	1,50	29,54	334
	1,85	23,0	4,00	1,93	1,25	0,3	1,75	29,54	336
	2,15	23,0	4,00	2,23	1,75	0,3	2,00	29,54	338
	2,65	23,0	4,00	2,73	1,75	0,3	2,50	29,54	340
	3,15	23,0	4,00	3,23	2,20	0,3	3,00	29,54	342

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c/f_z Page 70

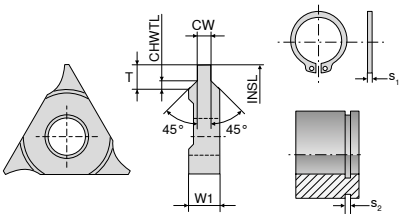
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Milling inserts for circlip grooves with chamfer

System 300

DIN 471/472



Ti500



Solid carbide

W2

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	$CW_{-0,03}$ mm	T mm	CHWTL mm	s_1 mm	Article no. 50 852 ...	
								EUR	
03	1,10	10,6	2,34	1,18	0,50	0,10	1,00	34,61	302
02	1,10	17,5	3,50	1,18	0,50	0,10	1,00	31,41	312
	1,30	17,5	3,50	1,38	0,85	0,15	1,20	31,41	314
	1,60	17,5	3,50	1,68	1,00	0,15	1,50	31,41	316
	1,85	17,5	3,50	1,93	1,25	0,20	1,75	31,41	317
	2,15	17,5	3,50	2,23	1,50	0,20	2,00	31,41	318
	2,65	17,5	3,50	2,73	1,50	0,20	2,50	31,41	319
01	1,10	23,0	4,00	1,18	0,50	0,10	1,00	31,41	320
	1,30	23,0	4,00	1,38	0,70	0,15	1,20	31,41	321
	1,30	23,0	4,00	1,38	0,85	0,15	1,20	31,41	322
	1,60	23,0	4,00	1,68	1,00	0,15	1,50	31,41	324
	1,60	23,0	4,00	1,68	0,85	0,15	1,50	31,41	323
	1,85	23,0	4,00	1,93	1,25	0,20	1,75	31,41	325
	2,15	23,0	4,00	2,23	1,50	0,20	2,00	31,41	326
	2,65	23,0	4,00	2,73	1,75	0,20	2,50	31,41	328
	2,65	23,0	4,00	2,73	1,50	0,20	2,50	31,41	327
	3,15	23,0	4,00	3,32	1,75	0,20	3,00	31,41	329

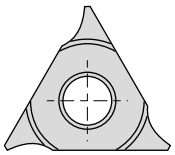
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

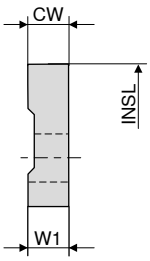
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Milling inserts without profile, ground ready-for-use

System 300





Ti500



Size	CW +0,02 mm	INSL mm	W1 mm	Solid carbide W2 Article no. 50 851 ... EUR	
04	2,00	7,9	2,34	39,68	302
03	2,34	10,6	2,34	32,73	304
	3,00	10,6	3,00	34,61	306
02	3,50	17,5	3,50	29,54	312
	5,00	17,5	5,00	34,61	314
	6,00	17,5	6,00	38,24	316
01	4,00	23,0	4,00	36,38	322 1)
	6,50	23,0	6,50	36,38	324 1)

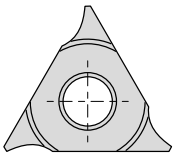
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

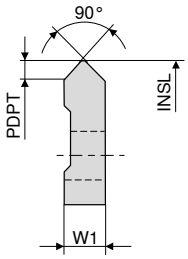
1) with circular milling cutter 50 800 090 PDPT = 3,0 mm

→ v_c/f_z Page 70

Milling inserts for chamfering and deburring

System 300





Ti500



Size	PDPT mm	INSL mm	W1 mm	Solid carbide W2 Article no. 50 857 ... EUR	
03	1,50	10,6	3,0	32,73	304
02	2,50	17,5	5,0	32,73	314
01	3,25	23,0	6,5	32,73	322 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

1) with circular milling cutter 50 800 090 PDPT = 3,0 mm

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

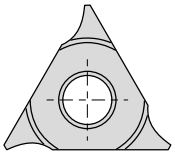
7

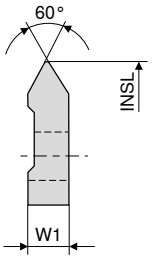
Thread milling insert – Partial profile

System 300



60°





Ti500



Solid carbide

W2

Size	TP	INSL	W1	Article no. 50 855 ...	EUR	
	mm	mm	mm			
02	1 - 3,5	17,5	3,5		36,38	314
01	1 - 4,0	23,0	4,0		36,38	324

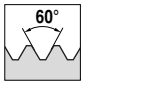
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c/f_z Page 70

Thread milling insert – Full profile

System 300

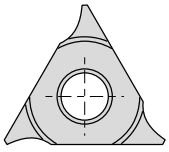
IR/IL

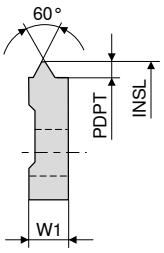


60°

M

MF





Ti500



Solid carbide

W2

Size	TP	INSL	W1	PDPT	Article no. 50 859 ...	EUR	
	mm	mm	mm	mm			
03	1,0	10,6	2,34	0,578		45,08	304
	1,5	10,6	2,34	0,864		45,08	308
	2,0	10,6	2,34	1,159		45,08	310
02	1,0	17,5	3,50	0,578		45,08	311
	1,5	17,5	3,50	0,864		45,08	312
	2,0	17,5	3,50	1,159		45,08	314
	2,5	16,0	3,50	1,444		48,50	317 [1]
	2,5	17,5	3,50	1,444		45,08	316
	3,0	17,5	3,50	1,728		55,55	318
01	1,0	23,0	4,00	0,578		46,74	320
	1,5	23,0	4,00	0,864		46,74	322
	2,0	23,0	4,00	1,159		46,74	324
	2,5	23,0	4,00	1,444		46,74	326
	3,0	23,0	4,00	1,728		46,74	328
	3,5	23,0	4,00	2,023		46,74	330
	4,0	23,0	4,00	2,308		46,74	332
	4,5	23,0	6,50	2,602		53,79	334
	5,0	23,0	6,50	2,887		53,79	336
	6,0	23,0	6,50	3,467		53,79	338 [2]

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

1) M20x2,5 – profile corrected

2) with circular milling cutter 50 800 090 PDPT = 3,0 mm

→ v_c/f_z Page 70

Thread milling insert – Full profile

System 300

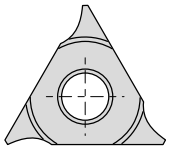


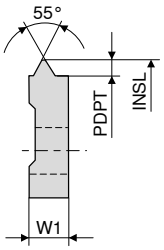
55°

G

BSW

BSF





Ti500



Solid carbide

W2

Size	TP mm	TPI 1/"	INSL mm	W1 mm	PDPT mm	Article no. 50 858 ... EUR	
02	1,814	14	17,5	3,5	1,162	45,08	314
	2,309	11	17,5	3,5	1,494	45,08	312
01	2,309	11	23,0	4,0	1,494	46,74	322

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

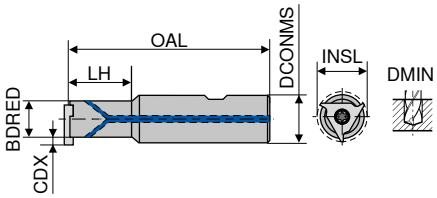
7

Circular milling cutter

▲ size refers to milling inserts

System 300







HB 

Size	INSL	CDX	LH	DCONMS $_{h6}$	OAL	BDRED	DMIN	torque moment	W1 Article no. 50 800 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	EUR	
04	7,9	0,35	17,2	10	57,20	7,1	8	0,9	127,20	015 [1]
03	10,6	1,60	17,2	10	57,20	7,4	11	0,9	127,20	020 [1]
	10,6	1,60	34,2	10	74,20	7,4	11	0,9	184,40	025 [2]
02	17,5	2,60	28,7	12	74,05	12,0	20	3,8	134,60	030
	17,5	2,60	63,7	12	108,70	12,0	20	3,8	291,40	045 [2]
01	23,0	3,45	38,5	16	87,00	16,1	25	5,5	139,90	050
	23,0	3,45	67,5	16	116,00	16,1	25	5,5	147,30	070
	23,0	3,00	88,5	16	137,00	17,0	25	5,5	322,20	090 [2]

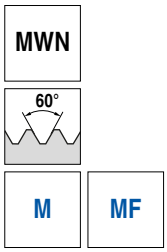
1) without through coolant
2) carbide version

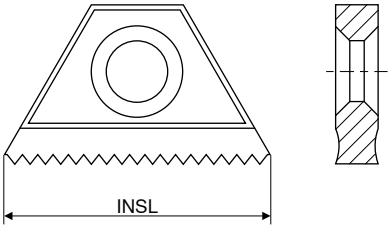
Spare parts	Y7  Key D			2A  Clamping screw		
for Article no.	Article no. 80 950 ... EUR			Article no. 70 960 ... EUR		
50 800 050	T20 - IP	12,54	129	M5x15	6,27	234
50 800 070	T20 - IP	12,54	129	M5x15	6,27	234
50 800 090	T20 - IP	12,54	129	M5x15	6,27	234
50 800 030	T15 - IP	11,89	128	M4x12,3	6,27	233
50 800 045	T15 - IP	11,89	128	M4x12,3	6,27	233
50 800 020	T06 - IP	10,39	123	M2x9	4,17	232
50 800 025	T06 - IP	10,39	123	M2x9	4,17	232
50 800 015	T06 - IP	10,39	123	M2x9	4,17	232

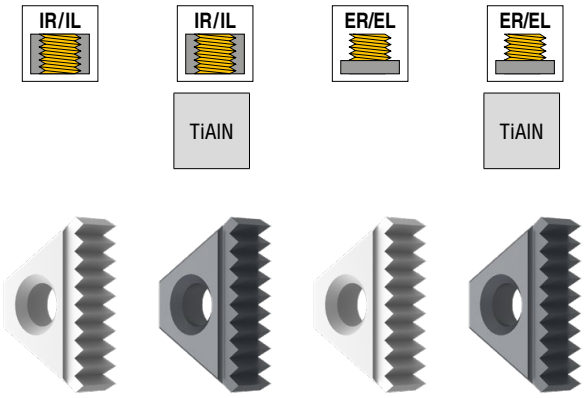
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert

▲ can be used on both sides (except for INSL 10,4)







INSL	TP	Solid carbide W2 Article no. 50 890 ...		Solid carbide W2 Article no. 50 890 ...		Solid carbide W2 Article no. 50 891 ...		Solid carbide W2 Article no. 50 891 ...	
mm	mm	EUR		EUR		EUR		EUR	
10,4	0,50	60,51	100						
	0,75	60,51	101						
	1,00	48,50	102	58,74	302				
	1,25	48,50	103						
	1,50	48,50	104	58,74	304				
11,0	0,50	41,88	120						
	0,75	52,79	121						
	1,00	41,88	122	51,03	322				
	1,25	41,88	123						
	1,50	41,88	124	50,14	324				
16,0	0,50	61,71	140						
	0,75	49,16	141						
	1,00	49,16	142	63,37	342	49,16	142	59,96	342
	1,25	49,16	143			49,16	143		
	1,50	49,16	144	59,96	344	49,16	144	59,96	344
	1,75	49,16	145			49,16	145		
	2,00	49,16	146	59,96	346	49,16	146	59,96	346
27,0	1,00	94,12	162	109,50	362	94,12	162	109,50	362
	1,25	94,12	163			94,12	163		
	1,50	94,12	164	109,50	364	94,12	164	109,50	364
	1,75	94,12	165						
	2,00	94,12	166	109,50	366	94,12	166	109,50	366
	2,50	94,12	167			94,12	167		
	3,00	94,12	168	109,50	368	94,12	168	109,50	368
	3,50	94,12	169			94,12	169		
	4,00	94,12	170			94,12	170		

Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	●	●	●
Non ferrous metals	●	●	●	●
Heat resistant alloys				
Hardened materials				

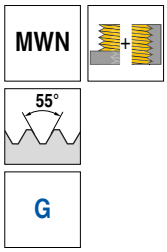
→ v_c/f_z Page 69

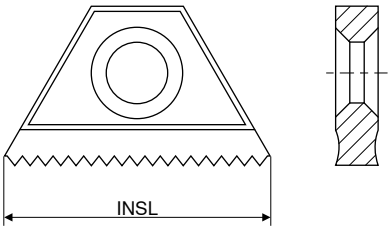
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

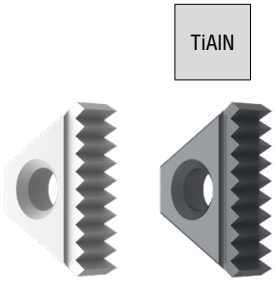
7

Thread milling insert

▲ can be used on both sides (except for INSL 10,4)







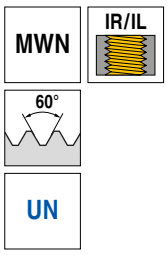
INSL	TPI	TP	Solid carbide W2 Article no. 50 895 ...		Solid carbide W2 Article no. 50 895 ...	
mm	1/"	mm	EUR		EUR	
10,4	19	1,337	48,50	100	58,74	300
16,0	14	1,814	49,16	142	58,74	342
	11	2,309	49,16	144	58,74	344
27,0	11	2,309	94,12	166	134,50	366

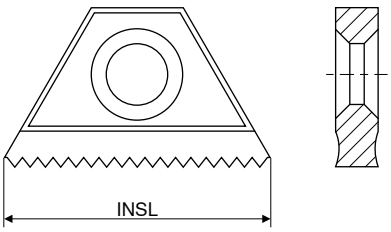
Steel	●	●
Stainless steel		●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys		
Hardened materials		

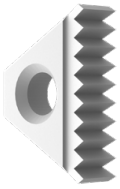
→ v_c/f_z Page 69

Thread milling insert

▲ can be used on both sides (except for INSL 10,4)







INSL	TPI	TP	Solid carbide W2 Article no. 50 892 ...	
mm	1/"	mm	EUR	
10,4	20	1,270	48,50	100
	18	1,411	48,50	102
16,0	16	1,588	49,16	144
	12	2,117	49,16	146
27,0	12	2,117	94,12	166
	8	3,175	94,12	168

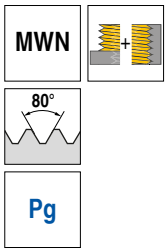
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

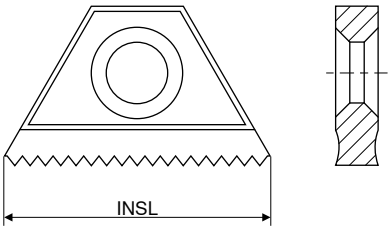
→ v_c/f_z Page 69

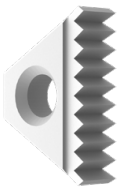
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert

▲ double sided







Solid carbide

W2

INSL mm	TPI 1/"	TP mm	Article no. 50 896 ...	EUR	
11	18	1,411		50,14	122
16	18	1,411		59,07	142
	16	1,588		49,16	144

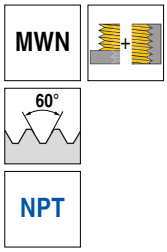
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

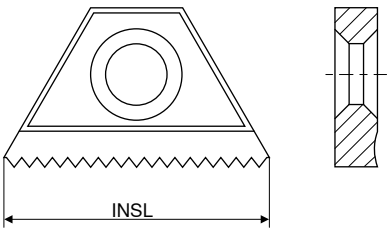
→ v_c/f_z Page 69

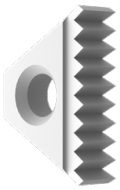
7

Thread milling insert

▲ double sided







Solid carbide

W2

INSL mm	TPI 1/"	TP mm	Article no. 50 897 ...	EUR	
16	14,0	1,814		49,16	142
	11,5	2,209		49,16	144
27	11,5	2,209		94,12	164
	8,0	3,175		94,12	166

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c/f_z Page 69

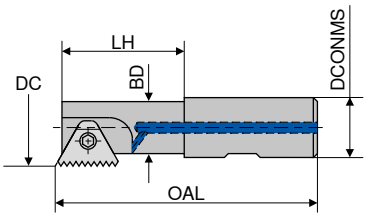
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Note! Thread milling inserts are marked R (right-hand thread) and L (left-hand thread). The standard tool holder cannot be used to produce a left-hand thread! Tool holder for left-hand thread available on special request.

Circular milling cutter

▲ INSL refers to milling inserts

MWN





B

INSL mm	BD mm	LH mm	DCONMS h6 mm	OAL mm	DC mm	torque moment Nm	W1 Article no. 50 843 ... EUR	
10,4	6,8	12	12	69	9,0	0,9	177,20	101
	6,8	17	20	84	9,0	0,9	187,70	102
11,0	8,9	12	12	70	11,5	1,2	177,20	111
	8,9	20	20	85	11,5	1,2	187,70	112
16,0	13,6	22	16	90	17,0	2,5	206,50	161
	16,6	43	20	95	20,0	2,5	206,50	162
	18,6	25	25	125	22,0	2,5	258,00	163
27,0	24,0	52	25	110	30,0	9,0	261,10	271
	31,0	58	32	120	37,0	9,0	281,00	273
	24,0	92	25	150	30,0	9,0	301,00	272
	31,0	98	32	160	37,0	9,0	349,10	274

Pilot hole diameter for circular end mill 50 843 ...

BD	TP in mm									
	0,5 mm 48 G/"	0,75 mm 32 G/"	1,0 mm 24 G/"	1,25 mm 20 G/"	1,5 mm 16 G/"	2,0 mm 12 G/"	2,5 mm 10 G/"	3,0 mm 8 G/"	3,5 mm 7 G/"	4,0 mm 6 G/"
6,8	9,5	10	10,7	11,4	12					
8,9	12	12,5	13,2	13,9	14,5					
13,6	17,6	18,2	19	19,6	20	21				
16,6	20,7	21,4	22	22,6	23	24				
18,6	22,7	23,4	24	24,6	25	26				
24,0	30,7	31,4	32	32,8	33,5	34,6	36,6	39	42	45
31,0	38	38,6	39,5	40,4	41	42	44	46,5	49	52

Y7



Key D

2A



Clamping screw

Spare parts INSL		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
10,4	T07	7,80	109	M2,2x5,0	1,88	200
11	T08	7,80	110	M2,6x6,5	1,88	201
16	T10	9,14	112	UNC5-40 x 8	1,88	202
27	T25	10,22	115	M5x15	2,92	203

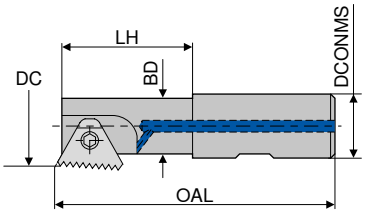
Circular milling cutter NPT

▲ INSL refers to milling inserts

MWN



NPT





B

W1

INSL mm	BD mm	Thread	LH mm	DCONMS h6 mm	OAL mm	DC mm	torque moment Nm	Article no. 50 844 ... EUR	
16	12,5	NPT 1/2	22	16	90	15,5	2,5	187,70	161
	15,0	NPT 3/4 - 1 1/4	23	20	85	19,0	2,5	205,50	162
27	24,0	NPT 1 1/2 - 2	52	25	110	30,0	9,0	261,10	271
	31,0	NPT > 2	58	32	120	37,0	9,0	281,00	272

7

Y7



Key D

2A

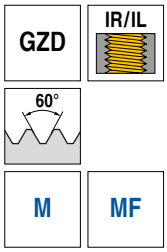


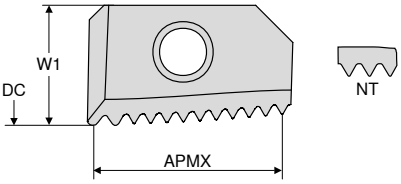
Clamping screw

Spare parts INSL		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
16	T10	9,14	112	UNC5-40 x 8	1,88	202
27	T25	10,22	115	M5x15	2,92	203

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert





Ti500



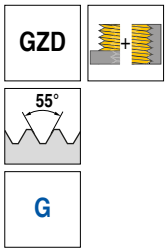
Solid carbide

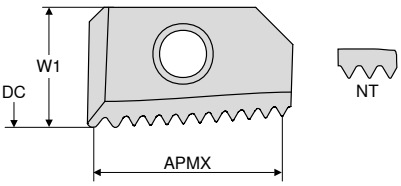
DC	TP	W1	APMX	NT	W2 Article no. 50 863 ...
mm	mm	mm	mm		EUR
12	1,0	7,5	12,0	13	43,20 300
	1,5	7,5	10,5	8	43,20 302
17	1,0	11,0	16,0	17	43,20 310
	1,5	11,0	16,5	12	43,20 312
	2,0	11,0	16,0	9	43,20 314
20	1,0	7,5	12,0	13	43,20 320
	1,5	7,5	10,5	8	43,20 322
25	1,0	11,0	16,0	17	43,20 330
	1,5	11,0	16,5	12	43,20 332
	2,0	11,0	16,0	9	43,20 334

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 70

Thread milling insert





Ti500



Solid carbide

DC	TPI	W1	APMX	NT	W2 Article no. 50 864 ...
mm	1/"	mm	mm		EUR
12	14	7,5	9,07	6	43,20 300
17	14	11,0	16,33	10	55,55 312 1)
	14	11,0	16,33	10	55,55 314 2)
	11	11,0	16,16	8	55,55 310
25	14	11,0	16,33	10	55,55 332
	11	11,0	16,16	8	55,55 330

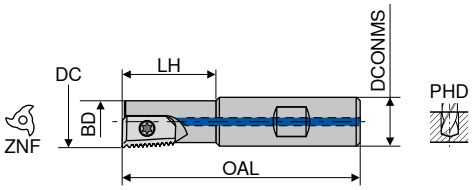
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) Thread: 5/8 – 3/4 – 7/8
2) 1/2" Profile corrected

→ v_c/f_z Page 70

Circular milling cutter

GZD





B

W1

DC	LH	DCONMS $_{h6}$	OAL	BD	ZNF	PHD	torque moment	Article no. 50 842 ...	
mm	mm	mm	mm	mm		mm	Nm	EUR	
12	18	16	74,0	9,4	1	14	1,1	173,80	121
17	30	16	79,0	13,7	1	19	3,8	173,80	171
20	32	20	83,0	17,5	3	22	1,1	207,70	201
25	50	25	107,6	21,7	3	26	3,8	272,40	251
	85	25	142,6	21,7	3	26	3,8	715,30	252 1)

1) heavy metal version with mounted head

7

Y7



Key D

2A



Clamping screw

Spare parts for Article no.		Article no. 80 950 ... EUR			Article no. 70 960 ... EUR	
50 842 121	T08 - IP	10,20	125	M2,5x6,5	4,17	244
50 842 171	T15 - IP	11,89	128	M4x7,5	4,17	245
50 842 201	T08 - IP	10,20	125	M2,5x6,5	4,17	244
50 842 251	T15 - IP	11,89	128	M4x7,5	4,17	245
50 842 252	T15 - IP	11,89	128	M4x7,5	4,17	245

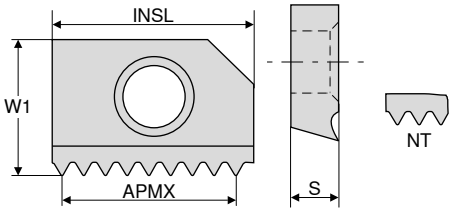
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert

GZG

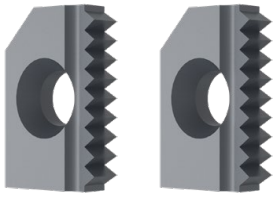
60°

M MF



ER/EL Ti500

IR/IL Ti500



INSL	TP	W1	APMX	S	NT	Solid carbide W2 Article no. 50 887 ...		Solid carbide W2 Article no. 50 885 ...	
mm	mm	mm	mm	mm		EUR		EUR	
14,5	0,50	10,0	13,50	3,18	28			67,44	350
	0,75	10,0	13,50	3,18	19			67,44	352
	1,00	10,0	13,00	3,18	14	52,02	304	39,68	354
	1,25	10,0	12,50	3,18	11			52,02	356
	1,50	10,0	12,00	3,18	9	52,02	308	39,68	358
	1,75	10,0	12,25	3,18	8			52,02	360
	2,00	10,0	12,00	3,18	7	52,02	312	39,68	362
	2,50	10,0	10,00	3,18	5			46,74	364
	2,50	10,0	10,00	3,18	5			46,74	366 1)
15,0	3,00	10,5	12,00	3,18	5			55,55	370
	3,50	10,5	10,50	3,18	4			55,55	372
21,0	1,00	10,0	19,00	3,18	20			45,08	380
	1,50	10,0	19,50	3,18	14			45,08	382
	1,50	10,0	18,00	3,18	13	52,02	320		
	2,00	10,0	18,00	3,18	10			45,08	384
26,0	1,50	15,0	24,00	5,00	17			76,26	390
	2,00	15,0	24,00	5,00	13			76,26	392
	3,00	15,0	21,00	5,00	8			76,26	396
	3,50	15,0	20,00	5,00	7			112,40	398
	4,00	15,0	20,00	5,00	6			112,40	400

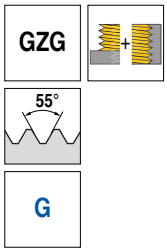
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys		
Hardened materials		

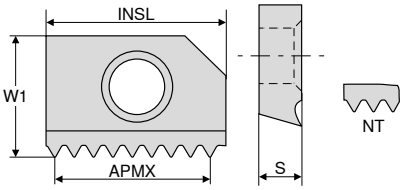
1) M20x2,5 – profile corrected

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert







Solid carbide

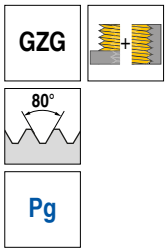
INSL	TPI	TP	W1	APMX	S	NT	W2 Article no. 50 888 ...	
mm	1/"	mm	mm	mm	mm		EUR	
14,5	18	1,411	10	11,28	3,18	9	43,20	310
	16	1,587	10	11,11	3,18	8	43,20	312
	14	1,814	10	12,69	3,18	8	43,20	314
	12	2,116	10	10,58	3,18	6	43,20	316
	11	2,309	10	11,54	3,18	6	43,20	318
21,0	14	1,814	10	18,14	3,18	11	52,02	320
	11	2,309	10	18,47	3,18	9	52,02	322
26,0	11	2,309	15	23,09	5,00	11	83,10	330

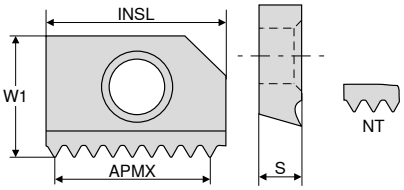
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c/f_z Page 70

7

Thread milling insert







Solid carbide

INSL	TPI	TP	W1	APMX	S	NT	W2 Article no. 50 894 ...	
mm	1/"	mm	mm	mm	mm		EUR	
14,5	18	1,411	10	12,69	3,18	10	62,26	302
	16	1,587	10	11,11	3,18	8	62,26	304

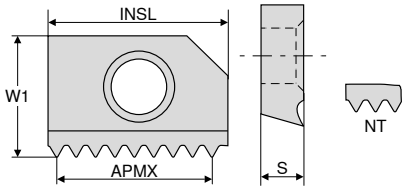
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert

GZG | IR/IL | 60° | UN



Ti500



Solid carbide

INSL	TPI	TP	W1	APMX	S	NT	W2 Article no. 50 889 ...	
mm	1/"	mm	mm	mm	mm		EUR	
14,5	18	1,411	10	12,69	3,18	10	64,15	310
	16	1,587	10	12,70	3,18	9	64,15	312
21,0	16	1,587	10	19,05	3,18	13	77,92	320
	14	1,814	10	18,14	3,18	11	77,92	322
	12	2,116	10	18,04	3,18	10	77,92	324

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

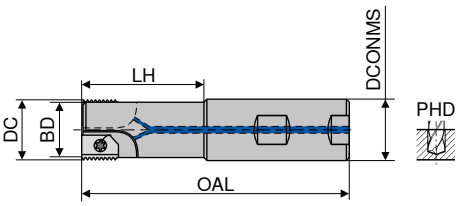
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Circular milling cutter

▲ INSL refers to milling inserts

GZG





B

INSL	DC	LH	DCONMS $_{h6}$	OAL	BD	ZNP	PHD	torque moment	W1 Article no. 50 841 ...	
mm	mm	mm	mm	mm	mm		mm	Nm	EUR	
	16	30,0	16	78	12,7	1	18,5	3,8	159,00	016
	16	50,0	16	98	12,7	1	18,5	3,8	248,00	017 [1]
14,5	20	60,0	20	110	16,8	1	23,0	3,8	188,70	020
	25	48,2	25	106	21,5	2	30,0	3,8	281,90	025
	25	92,2	25	150	21,5	2	30,0	3,8	602,00	026 [1]
	22	30,0	16	79	12,7	1	20,0	3,8	173,80	218
15,0	27	48,2	25	106	21,5	2	32,0	3,8	281,90	227
	27	60,0	20	110	16,8	1	26,0	3,8	188,70	222
	16	31,3	20	85	12,7	1	18,5	3,8	165,40	316
	22	32,8	25	92	18,7	1	26,0	3,8	173,80	322
21,0	22	62,8	25	122	18,7	1	26,0	3,8	593,40	323 [1]
	28	38,3	32	102	24,7	2	35,0	3,8	321,20	328
	28	78,3	32	142	24,5	2	35,0	3,8	887,00	327 [1]
26,0	18	48,5	25	107	20,0	1	30,0	3,8	223,60	125

1) heavy metal version

Key D



Clamping screw

Spare parts for Article no.	Y7 Article no. 80 950 ... EUR		2A Article no. 70 960 ... EUR	
50 841 016	T15 - IP	11,89 128	M4x6,9	6,27 237
50 841 017	T15 - IP	11,89 128	M4x6,9	6,27 237
50 841 020	T15 - IP	11,89 128	M4x7,5	4,17 245
50 841 025	T15 - IP	11,89 128	M4x8	6,27 242
50 841 026	T15 - IP	11,89 128	M4x8	6,27 242
50 841 218	T15 - IP	11,89 128	M4x6,9	6,27 237
50 841 227	T15 - IP	11,89 128	M4x8	6,27 242
50 841 222	T15 - IP	11,89 128	M4x6,9	6,27 237
50 841 316	T15 - IP	11,89 128	M4x6,9	6,27 237
50 841 322	T15 - IP	11,89 128	M4x6,9	6,27 237
50 841 323	T15 - IP	11,89 128	M4x8	6,27 242
50 841 328	T15 - IP	11,89 128	M4x8	6,27 242
50 841 327	T15 - IP	11,89 128	M4x8	6,27 242
50 841 125	T15 - IP	11,89 128	M4x11,5	6,27 241

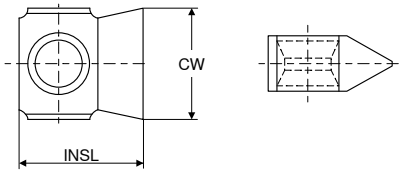
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Partial profile

EAW

60°

M UN



TiN



Solid carbide

DC	TP	TPI	CW	INSL	W2 Article no. 50 867 ...	
mm	mm	1/"	mm	mm	EUR	
16,5	1,5 - 3,0	16 - 10	5	7,0	52,57	115
18	2,5 - 3,5	10 - 7	5	7,8	52,57	225

55° G

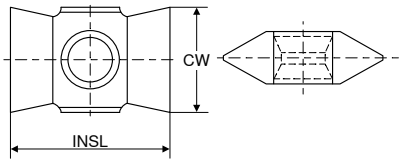
DC	TP	TPI	CW	INSL	W2 Article no. 50 868 ...	
mm	mm	1/"	mm	mm	EUR	
16,5	1,814	14	5	7	64,37	114

Thread milling insert – Partial profile

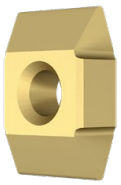
EAW

60°

M UN



TiN



Solid carbide

DC	TP	TPI	CW	INSL	W2 Article no. 50 860 ...	
mm	mm	1/"	mm	mm	EUR	
23,85	1,5 - 2,5	16 - 10	6,35	9,52	39,46	315
23,85	2,5 - 4,0	10 - 6	6,35	9,52	39,46	325
32,85	1,5 - 2,5	16 - 10	8,50	13,50	44,53	415
32,85	2,5 - 5,5	10 - 4,5	8,50	13,50	44,53	425

55° G

DC	TP	TPI	CW	INSL	W2 Article no. 50 861 ...	
mm	mm	1/"	mm	mm	EUR	
23,85	2,309	11	6,35	9,52	44,53	311
32,85	2,309	11	8,50	13,50	52,02	411

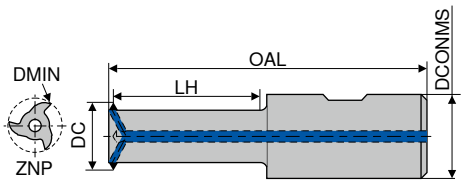
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	

→ v_c/f_z Page 69

Circular milling cutter

Scope of supply:
including key







DC	DMIN	TP	TPI	LH	DCONMS $_{h6}$	OAL	ZNP	torque moment	W1 Article no. 50 848 ...	
mm	mm	mm	1/"	mm	mm	mm		Nm	EUR	
16,5 / 18,0	17,5 / 19,0	1,5 - 3,0	16 - 10	60	20	114	2	0,9	323,00	**020**
23,85	25,5	1,5 - 4,0	24 - 6	90	32	154	3	0,9	380,60	**030**
32,85	35,0	1,5 - 5,5	16 - 4,5	115	32	179	3	2,5	394,20	**040**





Spare parts for Article no.	Y7 Article no. 80 950 ...	EUR		2A Article no. 70 950 ...	EUR	
50 848 020	T07 - IP	10,22	**124**	M2,5x8,5	10,42	**739**
50 848 030	T07 - IP	10,22	**124**	M2,5x8,5	10,42	**739**
50 848 040	T09 - IP	11,24	**126**	M3x11	10,42	**740**

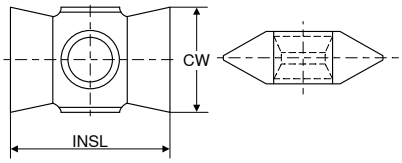
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Partial profile

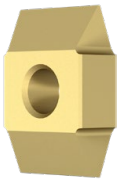
EWM

60°

M UN



TiN



Solid carbide

DC	TP	TPI	CW	INSL	W2 Article no. 50 870 ...	
mm	mm	1/"	mm	mm	EUR	
40,25	1,5 - 3,0	16 - 9	9,5	15,50	50,37	**515**
40,25	3,0 - 6,0	9 - 4	9,5	15,50	50,37	**530**
52,55 / 66,55	1,5 - 3,0	16 - 9	12,5	19,00	55,76	**615**
52,55 / 66,55	3,0 - 6,0	9 - 4	12,5	19,00	55,76	**630**
92	6,0 - 8,0	4	14,3	28,58	89,06	**760**

55°

G

DC	TP	TPI	CW	INSL	W2 Article no. 50 871 ...	
mm	mm	1/"	mm	mm	EUR	
40,25	2,309	11	9,5	15,5	57,87	**511**
52,55	2,309	11	12,5	19,0	68,22	**611**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 69

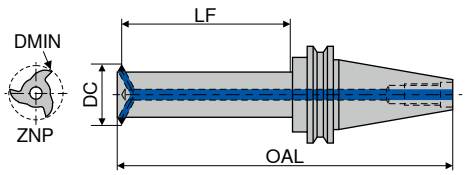
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Circular milling cutter

Scope of supply:

including key

EWM | IR/IL







DIN 69871

DC	DMIN	TP	TPI	LF	OAL	Adapter	ZNP	torque moment	W1 Article no. 50 849 ...	
mm	mm	mm	1/"	mm	mm			Nm	EUR	
40,25	43,0	1,5 - 6,0	16 - 4,0	145	280,5	SK 50	4	5,5	817,90	**148**
40,25	43,0	1,5 - 6,0	16 - 4,0	145	247,0	SK 40	4	5,5	793,80	**048**
52,55	56,0	1,5 - 6,0	16 - 4,0	195	279,6	SK 40	4	8,0	911,20	**064**
52,55	56,0	1,5 - 6,0	16 - 4,0	195	331,0	SK 50	4	8,0	934,20	**164**
66,55	70,5	1,5 - 6,0	16 - 4,0	260	398,0	SK 50	7	8,0	1.284,00	**080**
92,00	100,0	6,0 - 8,0	4,0	360	497,0	SK 50	7	8,0	1.495,00	**115**

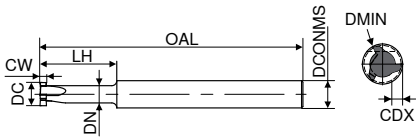
Spare parts DC	Y7  Key D Article no. 80 950 ...			2A  Clamping screw Article no. 70 950 ...		
		EUR			EUR	
40,25	T15 - IP	11,89	**128**	M4x13	10,42	**741**
52,55	T20 - IP	12,54	**129**	M5x15	10,42	**742**
66,55	T20 - IP	12,54	**129**	M5x15	10,42	**742**
92	T20 - IP	12,54	**129**	M5x15	10,42	**742**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MicroMill – Solid Carbide Circular End Milling Cutter

Micro Mill

CWX500







Solid carbide

DC	CW ±0,02	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 050 ...	
mm	mm	mm	mm	mm	mm	mm		mm	EUR	
5,8	0,7	0,8	15,2	58	3,8	6	3	6	55,99	070
	0,8	0,8	15,2	58	3,8	6	3	6	55,99	080
	0,9	0,8	15,2	58	3,8	6	3	6	55,99	090
	1,0	0,8	15,2	58	3,8	6	3	6	55,99	100
	1,5	0,8	15,2	58	3,8	6	3	6	55,99	150
7,8	0,7	1,2	25,4	68	5,0	8	3	8	70,65	170
	0,8	1,2	25,4	68	5,0	8	3	8	70,65	180
	0,9	1,2	25,4	68	5,0	8	3	8	70,65	190
	1,0	1,2	25,4	68	5,0	8	3	8	70,65	200
	1,5	1,2	25,4	68	5,0	8	3	8	70,65	250
	2,0	1,2	25,4	68	5,0	8	3	8	70,65	300

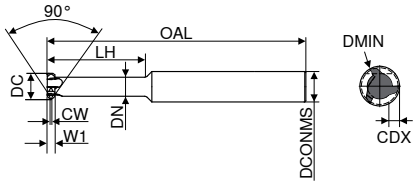
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

MicroMill – Solid Carbide Circular End Milling Cutter

Micro Mill

CWX500







Solid carbide

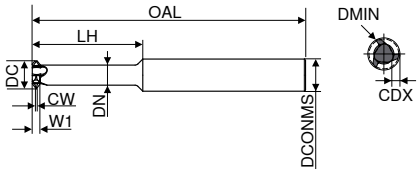
DC	W1	CW	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 051 ...	
mm	mm	mm	mm	mm	mm	mm	mm		mm	EUR	
5,8	2	0,2	0,8	15	58	4,2	6	3	6	54,01	010
	2	0,2	0,8	25	68	4,2	6	3	6	68,56	020
7,8	2	0,2	1,2	25	68	5,0	8	3	8	83,21	110
	2	0,2	1,2	35	78	5,0	8	3	8	87,62	120

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

MicroMill – Solid Carbide Circular Thread Milling Cutter – Full profile

Micro Mill | IR/IL | 60° | M



CWX500





Solid carbide

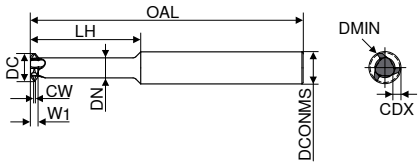
Thread	TP	DC	W1	CW	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 052 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	EUR	
M1,6	0,35	1,18	0,40	0,04	0,19	4,0	32	0,64	3	3	1,38	65,79	**160**
M1,8	0,35	1,38	0,50	0,04	0,19	5,0	32	0,70	3	3	1,58	65,02	**180**
M2	0,40	1,50	0,56	0,05	0,22	5,0	32	0,90	3	4	1,70	72,42	**200**
M2,5	0,45	1,95	0,60	0,06	0,25	6,0	32	1,15	3	4	2,15	71,65	**250**
M3	0,50	2,40	0,60	0,06	0,27	7,0	32	1,60	3	4	2,60	70,97	**300**
M3,5	0,60	2,80	0,74	0,08	0,33	8,0	32	1,80	3	4	3,00	69,44	**350**
M4	0,70	3,10	0,82	0,09	0,38	9,0	44	1,98	5	4	3,30	75,39	**400**
M5	0,80	3,60	0,98	0,10	0,43	10,0	44	2,20	5	4	3,80	73,18	**500**
M6	1,00	4,10	0,98	0,13	0,54	12,2	44	2,70	5	4	4,30	71,65	**600**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

MicroMill – Solid Carbide Circular Thread Milling Cutter – Partial profile

Micro Mill | IR/IL | 60°



CWX500





Solid carbide

TP	DC	W1	CW	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 053 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	EUR	
0,5 - 1,5	5,8	2	0,06	0,91	15,2	58	3,5	6	3	6	58,42	**010**
0,5 - 1,5	7,8	2	0,06	0,91	25,4	68	5,5	8	3	8	77,37	**110**
1,0 - 2,0	7,8	2	0,12	1,19	25,4	68	5,0	8	3	8	77,37	**120**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Circular Thread Milling Cutter

UNI

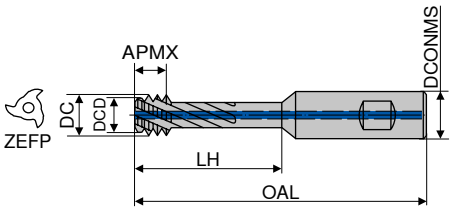
≤ 2xD

IR/IL

60°

M

OSM





HB

Solid carbide

W1

DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS h6 mm	DCD mm	OAL mm	ZEFP	Article no. 50 815 ... EUR	
4,51	M6x1 - M7x1	1,00	4,1	16	8	3,41	60	3	190,70	060
6,23	M8x1,25 - M9x1,25	1,25	5,1	21	10	4,91	71	4	215,00	080
7,75	M10x1,5 - M11x1,5	1,50	6,0	26	10	6,11	76	4	216,00	100
9,16	M12x1,75	1,75	7,0	31	12	7,21	86	4	242,50	120

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 68

Circular Thread Milling Cutter

UNI

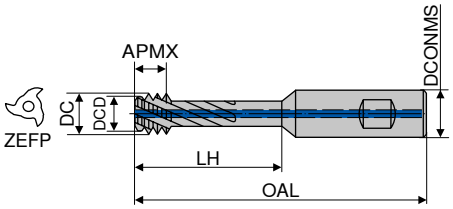
≤ 3xD

IR/IL

60°

M

OSM





HB

Solid carbide

W1

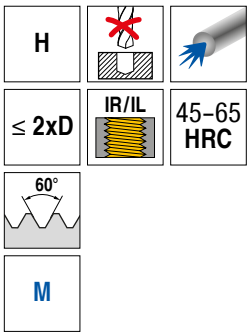
DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS h6 mm	DCD mm	OAL mm	ZEFP	Article no. 50 821 ... EUR	
4,51	M6x1 - M7x1	1,00	4,1	23	8	3,41	65	3	276,60	060
6,23	M8x1,25 - M9x1,25	1,25	5,1	30	10	4,91	80	4	303,10	080
7,75	M10x1,5 - M11x1,5	1,50	6,0	37	10	6,11	85	4	306,40	100
9,16	M12x1,75	1,75	7,0	43	12	7,21	100	4	328,50	120
11,08	M14x2 - M16x2	2,00	8,1	57	16	8,91	113	4	351,60	140
14,38	M18x2,5 - M20x2,5	2,50	10,0	71	20	11,71	129	5	441,90	180

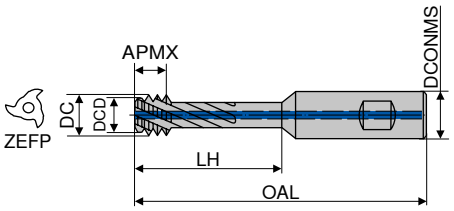
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c/f_z Page 68

Circular Thread Milling Cutter

▲ note: left-hand cutting (M04)







Solid carbide

NEW W1

DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS $_{h6}$ mm	DCD mm	OAL mm	ZEFP	Article no. 50 840 ... EUR	
2,3	M3x0,5	0,50	2,0	7,0	6	2,10	51	4	161,50	030 1)
3,0	M4x0,7	0,70	2,8	9,4	6	2,60	51	4	161,70	040 1)
3,8	M5x0,8	0,80	3,2	11,6	6	3,40	51	4	160,30	050 1)
4,6	M6x1 - M7x1	1,00	4,0	14,0	8	4,10	60	4	160,20	060 1)
6,2	M8x1,25 - M10x1,25	1,25	5,0	19,0	10	5,60	71	4	172,60	080
7,8	M10x1,5 - M12x1,5	1,50	6,0	25,0	10	7,00	76	4	186,00	100
9,2	M12x1,75	1,75	7,0	31,0	12	8,30	86	4	197,70	120
11,1	M14x2 - M16x2	2,00	8,0	36,0	16	10,04	98	4	216,10	140

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	○
Hardened materials	●

1) without through coolant

→ v_c/f_z Page 68

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

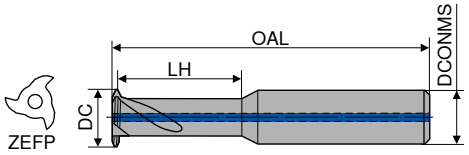
Caution: left-hand cutting (M04) → spindle rotation left!

7

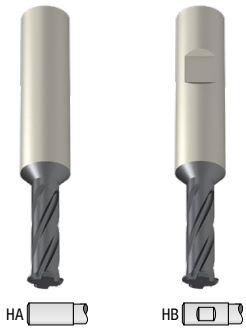
Thread Milling Cutter

▲ available on request: M1 / M1,1 / M1,2 / M1,4 / M1,6 / M1,7 / M1,8 / M2 / M2,2 / M2,3 / M2,5 / M2,6 / M3

HR | IR/IL | ≤ 3xD | 60° | M



OSM | OSM



Solid carbide | Solid carbide

W1 | W1

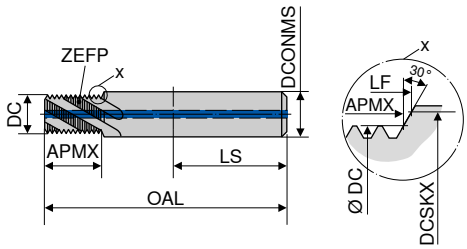
DC mm	Thread	TP mm	LH mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	Article no. 50 846 ... EUR		Article no. 50 847 ... EUR	
3,15	M4	0,70	9	6	55	3	143,30	**040**	145,50	**040**
4,00	M5	0,80	11	6	55	3	143,30	**050**	145,50	**050**
4,80	M6 - M7	1,00	16	8	60	3	146,50	**060**	148,80	**060**
6,40	M8 - M9	1,25	22	10	71	4	166,50	**080**	167,50	**080**
8,00	M10 - M12	1,50	26	10	76	4	167,50	**100**	169,70	**100**
9,60	M12	1,75	27	12	86	4	186,30	**120**	187,30	**120**

Steel	●	●
Stainless steel	●	●
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys	●	●
Hardened materials	●	●

→ v_c/f_z Page 68

Thread Milling Cutter with Chamfer Facet

SFSE | IR/IL | ≤ 2xD | 60° | M | TiAlN





Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 811 ... EUR	
4,0	M5	0,80	62	11	36	8	5,3	11,16	3	130,00	050
4,7	M6	1,00	62	13	36	8	6,3	13,93	3	130,00	060
6,5	M8	1,25	74	18	40	10	8,3	18,62	3	154,30	080
8,0	M10	1,50	74	22	40	10			3	154,30	100 1)
10,0	M12	1,75	90	26	45	14	12,3	26,47	4	238,10	120
12,5	M16	2,00	100	35	48	16			4	282,20	160 2)

1) without chamfer
2) chamfer section at the front of the tool

60° | MF

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 816 ... EUR	
6,5	M8x1	1,00	74	18	40	10	8,3	18,00	3	154,30	082
8,0	M10x1	1,00	74	22	40	10			3	154,30	102 1)
8,0	M10x1,25	1,25	74	22	40	10			3	154,30	103 1)
10,0	M12x1,25	1,25	90	26	45	14	12,3	26,61	4	238,10	123
10,0	M12x1,5	1,50	90	26	45	14	12,3	27,30	4	238,10	124
11,0	M14x1	1,00	100	31	48	16	14,3	32,70	4	282,20	142
11,0	M14x1,5	1,50	100	31	48	16	14,3	32,08	4	282,20	144
12,5	M16x1,5	1,50	100	35	48	16			4	282,20	164 2)

1) without chamfer
2) chamfer section at the front of the tool

55° | G

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 818 ... EUR	
7,6	G 1/8-28	0,907	80	20	45	12	10,0	20,97	3	212,80	018
11,0	G 1/4-19	1,337	100	27	48	16	13,5	28,39	4	315,20	014
13,0	G 3/8-19	1,337	100	34	48	16			4	315,20	038 1)
16,0	G1/2-14	1,814	110	44	50	20			5	445,30	012 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

1) chamfer section at the front of the tool

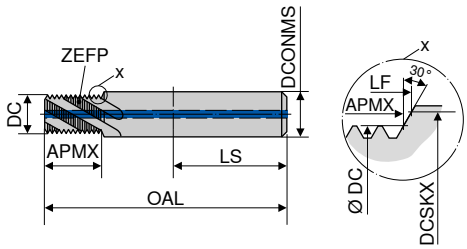
→ v_c/f_z Page 69

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread Milling Cutter with Chamfer Facet

SFSE | IR/IL | ≤ 2xD | 60° | UNC | TiAlN





Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 823 ... EUR	
4,7	UNC 1/4-20	1,270	62	14	36	8	6,65	15,14	3	141,00	014
6,1	UNC 5/16-18	1,411	74	17	40	10	8,25	18,23	3	172,00	516
7,6	UNC 3/8-16	1,588	80	21	45	12	9,83	22,05	3	212,80	038
8,8	UNC 7/16-14	1,814	90	24	45	14	11,43	25,21	3	263,30	716
10,1	UNC 1/2-13	1,954	90	26	45	14	13,00	27,67	4	263,30	012
11,4	UNC 9/16-12	2,117	100	31	48	16	14,61	32,15	4	315,20	916
12,7	UNC 5/8-11	2,309	100	34	48	16			4	315,20	058 1)
15,2	UNC 3/4-10	2,540	110	42	50	20	19,35	43,74	5	445,30	034

1) chamfer section at the front of the tool

60° | UNF

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 824 ... EUR	
4,7	UNF 1/4-28	0,907	62	14	36	8	6,65	15,59	3	141,00	014
6,1	UNF 5/16-24	1,058	74	17	40	10	8,25	18,05	3	172,00	516
7,6	UNF 3/8-24	1,058	80	21	45	12	9,83	22,30	3	212,80	038
8,8	UNF 7/16-20	1,270	90	24	45	14	11,43	25,49	3	263,30	716
10,1	UNF 1/2-20	1,270	90	26	45	14	13,00	28,46	4	263,30	012
11,4	UNF 9/16-18	1,411	100	31	48	16	14,61	33,03	4	315,20	916
12,7	UNF 5/8-18	1,411	100	34	48	16			4	315,20	058 1)
15,2	UNF 3/4-16	1,588	110	42	50	20	19,35	43,69	5	445,30	034

1) chamfer section at the front of the tool

60° | NPT

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	ZEFP	W1 Article no. 50 819 ... EUR	
5,8	NPT 1/16-27	0,941	62	10	36	8	3	174,10	116 1)
7,6	NPT 1/8-27	0,941	74	10	40	10	3	201,80	018 1)
10,1	NPT 1/4-18	1,411	90	15	45	14	3	302,00	014 1)
16,0	NPT 1/2-14	1,814	110	19	50	20	5	512,50	012 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

1) without chamfer

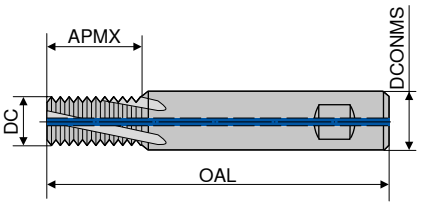
→ v_c/f_z Page 69

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter with Chamfer Facet

- ▲ profile-corrected
- ▲ hard machining to Ø DC = 4 mm possible
- ▲ chamfer section at end of shank

SFSE | IR/IL | ≤ 2xD | 60° | M



Ti500



HB

Solid carbide

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	Article no. 54 801 ... EUR	
4,00	M5	0,80	11	8	62	3	131,30	050 1)
4,80	M6	1,00	13	8	62	3	131,30	060 1)
6,50	M8	1,25	18	10	74	3	149,90	080
7,95	M10	1,50	22	12	80	3	174,10	100
9,90	M12	1,75	26	14	90	4	261,30	120
11,60	M14	2,00	31	16	100	4	277,80	140
11,95	M16	2,00	35	12	90	4	188,60	160 2)
13,95	M18	2,50	39	20	110	4	354,90	180
15,95	M20	2,50	44	16	100	4	277,80	200 2)

1) without through coolant
2) chamfer section at the front of the tool

60° | MF

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	Article no. 54 803 ... EUR	
6,0	M8x1	1,00	18	10	74	3	177,50	080
8,0	M10x1	1,00	22	12	80	3	209,40	100
8,0	M10x1,25	1,25	22	12	80	3	209,40	101
9,9	M12x1	1,00	26	14	90	4	261,30	120
9,9	M12x1,25	1,25	26	14	90	4	261,30	121
9,9	M12x1,5	1,50	26	14	90	4	261,30	122
11,6	M14x1	1,00	31	16	100	4	277,80	140
11,6	M14x1,5	1,50	31	16	100	4	277,80	141
12,0	M16x1,5	1,50	35	12	90	4	209,40	160 1)
14,0	M18x1,5	1,50	39	20	110	4	354,90	180
16,0	M20x1,5	1,50	44	16	100	4	277,80	200 1)

1) chamfer section at the front of the tool

55° | G

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	Article no. 54 805 ... EUR	
6,00	G 1/16-28	0,907	16	10	74	3	201,80	116
7,95	G 1/8-28	0,907	20	12	80	3	215,00	018
9,90	G 1/4-19	1,337	27	16	100	4	321,90	014
13,95	G 3/8-19	1,337	34	14	90	4	261,30	038 1)
15,95	G 1/2-14	1,814	43	16	100	4	321,90	012 1)
17,95	G 5/8-14	1,814	47	18	110	4	370,30	058 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	●

1) chamfer section at the front of the tool

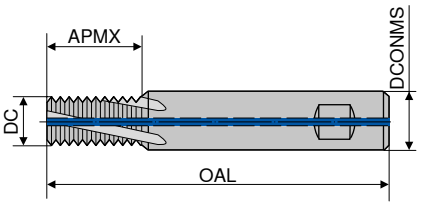
→ v_c/f_z Page 71

7

Thread Milling Cutter with Chamfer Facet

- ▲ profile-corrected
- ▲ hard machining to Ø DC = 4 mm possible
- ▲ chamfer section at end of shank

SFSE | IR/IL | ≤ 2xD | 60° | UNC | Ti500





HB

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 811 ... EUR	
4,80	UNC 1/4-20	1,270	14	8	62	3	166,50	014 1)
5,95	UNC 5/16-18	1,411	18	10	74	3	185,20	516
7,95	UNC 3/8-16	1,588	22	12	80	3	209,40	038
7,95	UNC 7/16-14	1,814	22	14	90	3	240,20	716
9,90	UNC 1/2-13	1,954	27	14	90	4	240,20	012
11,80	UNC 9/16-12	2,117	31	16	100	4	313,00	916
12,70	UNC 5/8-11	2,309	34	14	90	4	245,80	058 2)
15,20	UNC 3/4-10	2,540	38	20	110	5	354,90	034

1) without through coolant
2) chamfer section at the front of the tool

60° | UNF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 813 ... EUR	
4,80	UNF 1/4-28	0,907	14	8	62	3	166,50	014 1)
5,95	UNF 5/16-24	1,058	18	10	74	3	185,20	516
7,60	UNF 3/8-24	1,058	21	12	80	3	209,40	038
7,95	UNF 7/16-20	1,270	22	14	90	3	240,20	716
9,90	UNF 1/2-20	1,270	26	14	90	4	245,80	012
12,00	UNF 9/16-18	1,411	30	16	100	4	313,00	916
13,50	UNF 5/8-18	1,411	33	14	90	4	245,80	058 2)
17,00	UNF 3/4-16	1,588	38	20	110	5	354,90	034

1) without through coolant
2) chamfer section at the front of the tool

60° | NPT

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 809 ... EUR	
10,1	NPT 1/4-18	1,411	15	14	90	3	229,30	014 1)
12,8	NPT 3/8-18	1,411	15	16	100	4	234,80	038 1)
16,0	NPT 1/2-14	1,814	19	20	110	5	362,70	012 1)
18,5	NPT 3/4-14	1,814	19	20	110	5	362,70	034 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	●

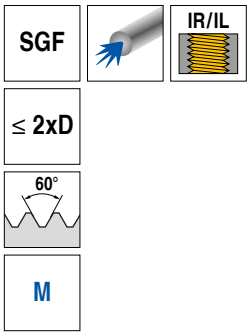
1) chamfer section at the front of the tool

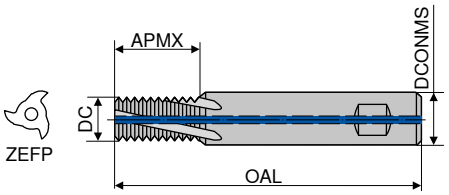
→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter

▲ available on request: M30, M36, M42, M48, M56, M64



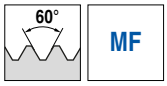




Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W1 Article no. 50 825 ... EUR	
2,40	M3	0,50	6	4	42	3	112,40	030 [1]
3,15	M4	0,70	8	6	55	3	125,70	040
4,00	M5	0,80	10	6	55	3	125,70	050
4,80	M6	1,00	12	6	55	3	125,70	060
6,00	M8	1,25	16	6	63	3	125,70	080
8,00	M10	1,50	20	8	70	3	146,50	100
9,90	M12	1,75	24	10	80	4	176,30	120
11,60	M14	2,00	28	12	90	4	212,80	140
12,00	M16	2,00	32	12	90	4	212,80	160
14,00	M18	2,50	36	14	90	4	277,80	180
14,00	M22	2,50	44	14	95	4	286,50	220
14,00	M20	2,50	40	14	90	4	277,80	200

1) without through coolant



DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W1 Article no. 50 826 ... EUR	
3,35	M4x0,5	0,50	8	6	55	3	125,70	040
4,20	M5x0,5	0,50	10	6	55	3	125,70	050
5,00	M6x0,75	0,75	12	6	55	3	125,70	061
6,00	M8x0,75	0,75	16	6	63	3	125,70	081
6,00	M8x1	1,00	16	6	63	3	125,70	082
8,00	M10x1	1,00	20	8	70	3	146,50	102
10,00	M12x1	1,00	24	10	80	4	176,30	122
10,00	M12x1,5	1,50	24	10	80	4	176,30	124
10,00	M14x1,5	1,50	28	10	80	4	176,30	144
12,00	M16x1,5	1,50	32	12	90	4	212,80	164
14,00	M18x1,5	1,50	36	14	90	4	277,80	184
14,00	M20x1,5	1,50	40	14	90	4	277,80	204
14,00	M22x1,5	1,50	44	14	95	4	286,50	224
16,00	M24x1,5	1,50	36	16	90	5	320,70	244

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	

→ v_c/f_z Page 69

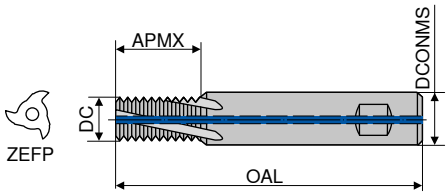
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread Milling Cutter

▲ available on request: M30, M36, M42, M48, M56, M64

SGF | IR/IL | ≤ 2xD | 55° | G



TiAlN



HA

Solid carbide

W1

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	Article no. 50 827 ...	
							EUR	
8	G 1/8-28	0,907	19,5	8	70	3	154,30	**018**
11	G 1/4-19	1,337	26,5	12	90	4	222,60	**014**
12	G 3/8-19	1,337	33,0	12	90	4	222,60	**038**
14	G 1/2-14	1,814	42,0	14	95	4	289,90	**012**
16	G 3/4-14	1,814	34,0	16	90	5	336,10	**034**
16	G 1-11	2,309	33,0	16	90	5	336,10	**100**
16	G 5/8-14	1,814	34,0	16	90	5	336,10	**058**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	

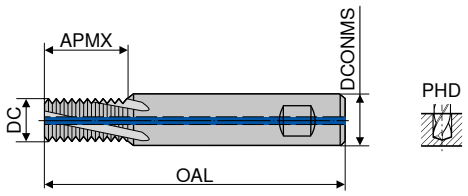
→ v_c/f_z Page 69

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter

▲ profile corrected
▲ hard machining to Ø DC = 4 mm possible

SGF | IR/IL | ≤ 2xD | 60° | M



Ti500



HB

Solid carbide

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	Article no. 54 800 ... EUR	
2,40	M3	0,50	6,5	4	42	2	2,50	94,90	030 [1]
3,15	M4	0,70	9,0	6	55	3	3,30	108,10	040 [2]
4,00	M5	0,80	11,0	6	55	3	4,20	108,10	050 [2]
4,80	M6	1,00	13,0	6	55	3	5,00	111,30	060 [2]
6,00	M8	1,25	18,0	6	60	3	6,75	119,10	080
8,00	M10	1,50	21,0	8	70	3	8,50	148,80	100
9,90	M12	1,75	26,0	10	75	4	10,25	170,90	120
11,60	M14	2,00	30,0	12	85	4	12,00	209,40	140
12,00	M16	2,00	34,0	12	85	4	14,00	215,00	160
14,00	M18	2,50	40,0	14	90	4	15,50	256,80	180
16,00	M20	2,50	42,0	16	90	4	17,50	262,30	200

1) DIN 6535 HA shank / without through coolant
2) without through coolant

60° | MF

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	Article no. 54 802 ... EUR	
4,0	M5	0,50	11	6	55	3	4,50	108,10	050 [1]
4,8	M6	0,75	13	6	55	3	5,25	111,30	060 [1]
6,0	M8	1,00	18	6	60	3	7,00	119,10	080
8,0	M10	1,25	21	8	70	3	8,75	148,80	100
9,9	M12	1,00	26	10	75	4	11,00	170,90	120
9,9	M12	1,25	26	10	75	4	10,75	170,90	121
9,9	M12	1,50	26	10	75	4	10,50	170,90	122
11,6	M14	1,00	30	12	85	4	13,00	209,40	140
11,6	M14	1,50	30	12	85	4	12,50	209,40	141
12,0	M16	1,50	34	12	85	4	14,50	215,00	160
14,0	M18	1,50	40	14	90	4	16,50	256,80	180
16,0	M20	1,50	42	16	90	4	18,50	262,30	200

1) DIN 6535 HA shank / without through coolant

55° | G

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	Article no. 54 804 ... EUR	
8,0	G 1/8-28	0,907	21	8	70	3	8,80	158,70	018
9,9	G 1/4-19	1,337	26	10	75	4	11,80	177,50	014
14,0	G 3/8-19	1,337	40	14	90	4	15,25	259,10	038
16,0	G 1/2-14	1,814	42	16	90	4	19,00	264,60	012

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

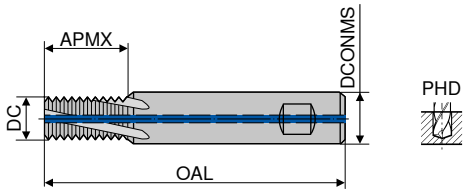
→ v_c/f_z Page 71

7

Thread Milling Cutter

▲ profile corrected

SGF | IR/IL | ≤ 2xD | 55° | BSW



Ti500



HB

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 806 ... EUR	
6,0	BSW 5/16 - 18	1,411	18	6	60	3	6,50	136,80	516
6,0	BSW 3/8 - 16	1,588	18	6	60	3	7,90	136,80	038
8,0	BSW 7/16 - 14	1,814	21	8	70	3	9,25	169,70	716
8,0	BSW 1/2 - 12	2,117	21	8	70	3	10,50	169,70	012
9,9	BSW 5/8 - 11	2,309	26	10	75	4	13,50	195,10	058

55° | BSF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 808 ... EUR	
6,0	BSF 5/16 - 22	1,155	18	6	60	3	6,8	136,80	516
6,0	BSF 3/8 - 20	1,270	18	6	60	3	8,3	136,80	038
8,0	BSF 7/16 - 18	1,411	21	8	70	3	9,7	169,70	716
8,0	BSF 1/2 - 16	1,588	21	8	70	3	11,1	169,70	012
9,9	BSF 5/8 - 14	1,814	26	10	75	4	14,0	195,10	058

60° | UNC

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 810 ... EUR	
4,80	UNC 1/4-20	1,270	13	6	55	3	5,1	136,80	014 [1]
6,00	UNC 5/16-18	1,411	18	6	60	3	6,6	136,80	516
7,95	UNC 3/8-16	1,588	21	8	70	3	8,0	169,70	038
7,95	UNC 7/16-14	1,814	21	8	70	3	9,4	169,70	716
9,90	UNC 1/2-13	1,954	26	10	75	4	10,8	195,10	012

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

1) DIN 6535 HA shank / without through coolant

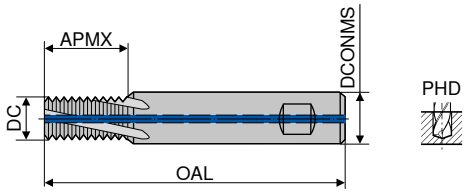
→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter

▲ profile corrected

SGF | IR/IL | ≤ 2xD | 60° | UNF



Ti500



HB

Solid carbide

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	Article no. 54 812 ...	EUR	
4,8	UNF 1/4-28	0,907	13	6	55	3	5,5	136,80	**014**	1)
6,0	UNF 5/16-24	1,058	18	6	60	3	6,9	136,80	**516**	
8,0	UNF 3/8-24	1,058	21	8	70	3	8,5	169,70	**038**	
8,0	UNF 7/16-20	1,270	21	8	70	3	9,9	169,70	**716**	
9,9	UNF 1/2-20	1,270	26	10	75	4	11,5	195,10	**012**	

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

1) without through coolant

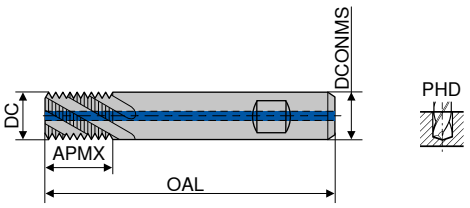
→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread Milling Cutter

SGF | IR/IL | ≤ 2xD | 60° | M



Ti500



HB

Solid carbide

W8

DC	TP	APMX	DCONMS $_{h6}$	OAL	ZEFP	PHD	Article no. 54 832 ...
mm	mm	mm	mm	mm		mm	EUR	
8	0,50	12	8	70	3	10	133,30	**008**
8	0,75	12	8	70	3	11	133,30	**080**
10	1,00	16	10	75	4	14	138,80	**100**
10	1,50	16	10	75	4	14	138,80	**101**
12	1,00	20	12	85	4	16	161,00	**120**
12	1,50	20	12	85	4	16	161,00	**121**
12	2,00	20	12	85	4	18	161,00	**122**
16	1,00	25	16	90	5	22	223,80	**160**
16	1,50	25	16	90	5	22	223,80	**161**
16	2,00	25	16	90	5	22	223,80	**162**
16	3,00	25	16	90	5	24	223,80	**164**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

7

Cutting data appoximate values

	UNI VHM OSM 2xD 50 815 ...			UNI VHM OSM 3xD 50 821 ...			H VHM 2xD 50 840 ...				HR VHM 50 846 ..., 50 847 ...		
Index	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	Ø 3–5 f_z	Ø 6–10 f_z	Ø 12–16 f_z	v_c m/min	< 10 f_z	> 10 f_z
1.1	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.2	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.3	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.4	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.5	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.6	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.7	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.8	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.9	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.10	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.11	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.12	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.13	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.14	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.15	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.16	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
2.1	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.2	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.3	**100–200**	0,02–0,03	0,04–0,05								**60–120**	0,015–0,03	0,03–0,06
2.4	**100–200**	0,02–0,03	0,04–0,05								**60–120**	0,015–0,03	0,03–0,06
2.5	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.6	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.7	**100–200**	0,02–0,03	0,04–0,05								**60–120**	0,015–0,03	0,03–0,06
3.1	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.2	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.3	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.4	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.5	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
3.6	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
3.7	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
3.8	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
4.1													
4.2													
4.3													
4.4													
4.5	**220–250**	0,05–0,07	0,06–0,08	**180–200**	0,05–0,07	0,06–0,08							
4.6													
4.7													
4.8													
4.9											**60–80**	0,02–0,04	0,03–0,05
4.10											**60–80**	0,02–0,04	0,03–0,05
4.11	**250–300**	0,05–0,07	0,06–0,08	**200–240**	0,05–0,07	0,06–0,08							
4.12													
4.13													
4.14													
4.15	**250–300**	0,05–0,07	0,06–0,08	**180–200**	0,05–0,07	0,06–0,08					**400–500**	0,05–0,08	0,07–0,10
4.16	**250–300**	0,05–0,07	0,06–0,08	**180–200**	0,05–0,07	0,06–0,08							
4.17													
4.18	**50–80**	0,015–0,025	0,020–0,035								**40–60**	0,015–0,025	0,020–0,035
4.19	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
5.1	**200–250**	0,04–0,06	0,07–0,10	150–200	0,04–0,06	0,07–0,10							
5.2											**60–80**	0,02–0,03	0,03–0,04
5.3											**60–80**	0,02–0,03	0,03–0,04
5.4							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**30–60**	0,01–0,02	0,02–0,03
5.5							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**30–60**	0,01–0,02	0,02–0,03
5.6							60–100	0,005–0,015	0,02–0,04	0,03–0,06	**30–60**	0,01–0,02	0,02–0,03
5.7	**70–100**	0,02–0,03	0,04–0,05				80–120	0,005–0,015	0,02–0,04	0,03–0,06	**40–60**	0,01–0,02	0,02–0,03
5.8							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**30–60**	0,01–0,02	0,02–0,03
5.9											**60–80**	0,02–0,03	0,03–0,04
5.10											**60–80**	0,02–0,03	0,03–0,04
5.11							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**60–80**	0,02–0,03	0,03–0,04
6.1	**80–120**	0,02–0,04	0,04–0,06				**80–120**	0,005–0,015	0,03–0,06	0,03–0,06	**60–100**	0,02–0,04	0,03–0,06
6.2	**80–120**	0,02–0,04	0,04–0,06				**60–100**	0,005–0,015	0,02–0,04	0,02–0,04	**60–100**	0,02–0,04	0,03–0,06
6.3	**50–80**	0,015–0,025	0,020–0,035				**30–60**	0,005–0,01	0,01–0,03	0,01–0,03	**40–60**	0,015–0,025	0,020–0,035
6.4	**50–80**	0,015–0,025	0,020–0,035				**30–60**	0,005–0,01	0,005–0,015	0,005–0,02	**40–60**	0,015–0,025	0,020–0,035
6.5													

Cutting data appoximate values

	SFSE VHM TiAlN 50 811 ..., 50 816 ..., 50 818 ..., 50 819 ..., 50 823 ..., 50 824 ...			SGF VHM TiAlN 50 825 ..., 50 826 ..., 50 827 ...			MWN uncoated 50 890 ..., 50 891 ..., 50 892 ..., 50 895 ..., 50 896 ..., 50 897 ...		MWN TiAlN 50 890 ..., 50 891 ..., 50 895 ...		EAW / EWM 50 860 ..., 50 861 ..., 50 867 ..., 50 868 ..., 50 870 ..., 50 871 ...		
Index	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	f_z	v_c m/min	f_z	v_c m/min	EAW f_z	EWM f_z
1.1	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.2	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.3	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.4	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.5	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.6	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.7	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.8	**40–80**	0,01–0,03	0,03–0,05										
1.9	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.10	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.11	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.12	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.13	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.14	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.15	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.16	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
2.1	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.2	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.3	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.4	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.5	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.6	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.7	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
3.1	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.2	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.3	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.4	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.5	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
3.6	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
3.7	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
3.8	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
4.1	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**400–500**	0,08–0,15	0,08–0,15
4.2	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**400–500**	0,08–0,15	0,08–0,15
4.3	**225–275**	0,05–0,07	0,06–0,08	**225–275**	0,05–0,07	0,06–0,08	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**400–500**	0,08–0,15	0,08–0,15
4.4	**200–225**	0,04–0,06	0,05–0,07	**200–225**	0,04–0,06	0,05–0,07	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**300–400**	0,06–0,10	0,06–0,10
4.5	**180–200**	0,03–0,05	0,04–0,06	**180–200**	0,03–0,05	0,04–0,06			**150–200**	0,08–0,10	**300–400**	0,06–0,10	0,06–0,10
4.6	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,12–0,15	**200–250**	0,12–0,15	**400–500**	0,08–0,15	0,08–0,15
4.7	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,12–0,15	**200–250**	0,12–0,15	**400–500**	0,08–0,15	0,08–0,15
4.8	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10			**200–250**	0,03–0,06	**400–500**	0,08–0,15	0,08–0,15
4.9	**60–80**	0,02–0,03	0,03–0,04	**50–70**	0,02–0,03	0,03–0,04			**40–80**	0,12–0,15	**150–200**	0,08–0,12	0,08–0,12
4.10	**60–80**	0,02–0,03	0,03–0,04	**50–70**	0,02–0,03	0,03–0,04			**40–80**	0,12–0,15	**150–200**	0,08–0,12	0,08–0,12
4.11	**200–225**	0,04–0,06	0,05–0,07	**200–225**	0,04–0,06	0,05–0,07	**70–120**	0,04–0,08	**100–150**	0,04–0,08	**400–500**	0,08–0,15	0,08–0,15
4.12	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**90–180**	0,08–0,10	**150–200**	0,08–0,10	**400–500**	0,08–0,15	0,08–0,15
4.13	**350–450**	0,10–0,13	0,12–0,15	**350–450**	0,10–0,13	0,12–0,15	**180–250**	0,15–0,20	**250–300**	0,15–0,20	**600–800**	0,15–0,25	0,15–0,25
4.14	**300–400**	0,10–0,13	0,12–0,15	**300–400**	0,10–0,13	0,12–0,15	**100–200**	0,12–0,15	**200–250**	0,12–0,15	**600–800**	0,15–0,25	0,15–0,25
4.15	**180–200**	0,04–0,06	0,05–0,07	**180–200**	0,04–0,06	0,05–0,07			**100–150**	0,04–0,08	**150–200**	0,08–0,12	0,08–0,12
4.16	**200–225**	0,04–0,06	0,05–0,07	**200–225**	0,04–0,06	0,05–0,07			**100–130**	0,04–0,08	**400–500**	0,08–0,15	0,08–0,15
4.17	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14							
4.18													
4.19	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,08–0,12	0,08–0,12
5.1	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10					**250–500**	0,10–0,20	0,10–0,20
5.2	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
5.3	**50–80**	0,02–0,04	0,03–0,05								**50–100**	0,02–0,08	0,02–0,08
5.4													
5.5													
5.6													
5.7													
5.8													
5.9	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
5.10	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
5.11	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
6.1													
6.2													
6.3													
6.4													
6.5													

Cutting data appoximate values

	SGF VHM Ti500			GZG / GZD				Polygon		System 300		
	54 832 ...			50 863 ..., 50 864 ..., 50 887 ..., 50 885 ..., 50 888 ..., 50 889 ..., 50 894 ...				50 872 ..., 50 874 ..., 50 875 ..., 50 876 ..., 50 879 ..., 50 880 ..., 50 881 ..., 50 882 ..., 50 883 ..., 50 884 ..., 50 886 ...		50 851 ..., 50 852 ..., 50 853 ..., 50 855 ..., 50 857 ..., 50 858 ..., 50 859 ...		
	Ti500	size		uncoated	Ti500	size		Ti500		uncoated	Ti500	
Index	v_c m/min	8 mm f_z	10–16 mm f_z	v_c m/min	v_c m/min	12–17 mm f_z	20–26 mm f_z	v_c m/min	f_z	v_c m/min	v_c m/min	f_z
1.1	80–250	0,04–0,07	0,05–0,15		180–260	0,1–0,3	0,05–0,3	150–200	0,05–0,25		120–180	0,05–0,12
1.2	80–250	0,04–0,07	0,05–0,15		180–260	0,1–0,3	0,05–0,3	150–200	0,05–0,25		120–180	0,05–0,12
1.3	80–250	0,04–0,07	0,05–0,15		180–260	0,1–0,3	0,05–0,3	100–150	0,05–0,25		120–180	0,05–0,12
1.4	60–120	0,04–0,07	0,05–0,10		180–220	0,1–0,3	0,05–0,3	100–150	0,05–0,25		100–120	0,05–0,12
1.5	60–100	0,04–0,07	0,05–0,10		180–260	0,1–0,3	0,05–0,3	150–200	0,05–0,25		120–180	0,05–0,12
1.6	60–120	0,04–0,07	0,05–0,10		180–220	0,1–0,3	0,05–0,3	100–150	0,05–0,25		100–120	0,05–0,12
1.7	80–200	0,04–0,07	0,05–0,10		180–260	0,1–0,3	0,05–0,3	100	0,05–0,25		120–180	0,05–0,12
1.8	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.9	60–100	0,04–0,07	0,05–0,10		180–260	0,1–0,3	0,05–0,3	100	0,05–0,25		100–120	0,05–0,12
1.10	60–120	0,04–0,07	0,05–0,10		100–150	0,1–0,2	0,05–0,2	120	0,05–0,25		100–120	0,05–0,12
1.11	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.12	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.13	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.14	40–100	0,03–0,05	0,04–0,06		100–120	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.15	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.16	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
2.1	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3				120–150	0,05–0,12
2.2	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3				120–150	0,05–0,12
2.3	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	120	0,05–0,25		100–120	0,05–0,12
2.4	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	120	0,05–0,25		100–120	0,05–0,12
2.5	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	120	0,05–0,25		120–180	0,05–0,12
2.6	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	180	0,05–0,25		120–180	0,05–0,12
2.7	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3				80–100	0,05–0,12
3.1	80–200	0,04–0,07	0,05–0,15	100–150	130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.2	80–200	0,04–0,07	0,05–0,15	80–120	130–200	0,1–0,3	0,05–0,3	120	0,05–0,25	80–120	120–180	0,05–0,12
3.3	80–200	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.4	80–200	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.5	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.6	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	120	0,05–0,25	80–120	120–180	0,05–0,12
3.7	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.8	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	120	0,05–0,25	80–120	120–180	0,05–0,12
4.1	250–500	0,05–0,08	0,07–0,2	300–400	400–600	0,1–0,3	0,05–0,3	400	0,15–0,4	400–500		0,05–0,25
4.2	250–500	0,05–0,08	0,07–0,2	300–400	400–600	0,1–0,3	0,05–0,3	400	0,15–0,4	300–400		0,05–0,25
4.3	250–500	0,05–0,08	0,07–0,2					300	0,15–0,4			
4.4	250–500	0,05–0,08	0,07–0,2					250	0,15–0,4			
4.5	180–250	0,05–0,07	0,06–0,12									
4.6	250–300	0,05–0,07	0,06–0,08					500	0,15–0,4		300–500	0,05–0,25
4.7												
4.8								120	0,05–0,15			
4.9												
4.10												
4.11	250–300	0,05–0,07	0,06–0,08					400	0,15–0,4		200–300	0,05–0,25
4.12								400	0,15–0,4			
4.13	350–450	0,08–0,1						500	0,15–0,4		300–500	0,05–0,25
4.14	80–400	0,05–0,1	0,08–0,25					500	0,15–0,4		300–500	0,05–0,25
4.15	180–200	0,02–0,04	0,03–0,04									
4.16												
4.17								500	0,15–0,4		300–500	0,05–0,25
4.18												
4.19												
5.1												
5.2								120	0,05–0,25		80–120	0,05–0,12
5.3								120	0,05–0,25		80–120	0,05–0,12
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10								80	0,01–0,08		70–100	0,01–0,05
5.11	40–60	0,03–0,05	0,04–0,1					60	0,01–0,08		60–90	0,01–0,05
6.1	40–60	0,03–0,05	0,04–0,1								80–100	0,03–0,1
6.2	40–60	0,03–0,05	0,04–0,1					100	0,05–0,15		80	0,03–0,1
6.3								100	0,05–0,10			
6.4												
6.5												

Cutting data appoximate values

	SFSE / SGF VHM Ti500 54 800 ..., 54 801 ..., 54 802 ..., 54 803 ..., 54 804 ..., 54 805 ..., 54 806 ..., 54 808 ..., 54 809 ..., 54 810 ..., 54 811 ..., 54 812 ..., 54 813 ...				MiniMill 53 006 ..., 53 007 ..., 53 008 ..., 53 009 ..., 53 010 ..., 53 011 ..., 53 012 ..., 53 013 ..., 53 015 ...			MicroMill 53 050 ..., 53 051 ..., 53 052 ..., 53 053 ...	
Index	v_c m/min	Ø 2,4 + 3,15 f_z	Ø 4 f_z	Ø 4,8–16 f_z	v_c m/min	f_z (drilling)	f_z (threading)	v_c m/min	f_z (drilling)
1.1	**80–250**	0,03–0,04	0,03–0,06	0,05–0,15	**80–200**	0,03–0,10	0,10–0,25	**60–200**	0,02–0,05
1.2	**80–250**	0,03–0,04	0,03–0,06	0,05–0,15	**80–200**	0,03–0,10	0,10–0,25	**60–200**	0,02–0,05
1.3	**80–250**	0,03–0,04	0,03–0,06	0,05–0,15	**80–200**	0,03–0,10	0,10–0,25	**60–200**	0,02–0,05
1.4	**60–120**	0,01–0,02	0,01–0,03	0,05–0,10	**60–180**	0,03–0,08	0,10–0,15	**60–160**	0,01–0,04
1.5	**60–120**	0,01–0,02	0,01–0,03	0,05–0,10	**60–180**	0,03–0,08	0,10–0,15	**60–160**	0,02–0,05
1.6	**60–120**	0,01–0,02	0,01–0,03	0,05–0,10	**60–180**	0,03–0,08	0,10–0,15	**60–160**	0,01–0,04
1.7	**80–200**	0,03–0,04	0,03–0,06	0,05–0,10	**60–160**	0,03–0,10	0,10–0,20	**50–140**	0,02–0,05
1.8	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**60–160**	0,02–0,07	0,10–0,20	**50–140**	0,007–0,03
1.9	**60–120**	0,01–0,02	0,04–0,07	0,05–0,10	**60–160**	0,03–0,10	0,10–0,20	**50–140**	0,02–0,05
1.10	**60–120**	0,01–0,02	0,04–0,07	0,05–0,10	**60–160**	0,03–0,10	0,10–0,20	**50–140**	0,01–0,04
1.11	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**60–160**	0,02–0,08	0,10–0,20	**50–140**	0,007–0,03
1.12	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.13	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.14	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.15	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.16	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
2.1	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,03–0,08	0,10–0,25	**60–120**	0,01–0,04
2.2	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,03–0,10	0,10–0,25	**60–120**	0,02–0,05
2.3	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.4	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.5	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.6	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.7	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
3.1	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.2	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.3	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.4	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.5	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.6	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.7	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.8	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
4.1	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.2	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.3	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.4	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.5	**180–250**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.6	**250–300**	0,05–0,07	0,05–0,07	0,06–0,08	**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.7					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.8					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.9					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.10					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.11	**250–300**	0,05–0,07	0,05–0,07	0,06–0,08	**150–180**	0,04–0,15	0,05–0,2	**120–180**	0,02–0,07
4.12					**150–180**	0,04–0,15	0,05–0,2	**120–180**	0,02–0,07
4.13	**350–450**	0,08–0,1	0,08–0,1	0,1–0,12	**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,1
4.14	**300–400**	0,08–0,1	0,08–0,1	0,1–0,12	**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,1
4.15	**180–200**	0,02–0,04	0,02–0,04	0,03–0,04	**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,07
4.16					**20–100**	0,02–0,10	0,05–0,2	**10–50**	0,02–0,05
4.17					**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,07
4.18					**20–100**	0,02–0,10	0,05–0,2	**10–50**	0,02–0,05
4.19					**20–100**	0,02–0,10	0,05–0,2	**10–50**	0,02–0,05
5.1					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.2					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.3	**60–80**	0,02–0,04	0,02–0,04	0,03–0,04	10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.4					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.5					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.6					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.7					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.8					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.9					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.10					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.11	**50–80**	0,01–0,03	0,01–0,03	0,01–0,03	10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
6.1	**40–60**		0,03–0,05	0,03–0,05	10–60	0,002–0,05		**10–40**	0,007–0,02
6.2	**40–50**		0,03–0,05	0,03–0,05	10–60	0,002–0,05		**10–40**	0,007–0,02
6.3	**30–40**		0,02–0,04	0,02–0,04	10–60	0,002–0,05		**10–40**	0,007–0,02
6.4								**10–40**	0,007–0,02
6.5									

7

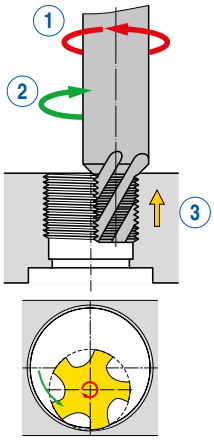
Milling Procedures

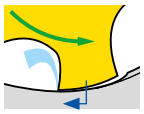
Climb milling

Characteristics:

1. Tool rotation direction „right“
2. Toolpath counter clockwise
3. Feed direction „outwards“

Right hand thread





When climb milling, the chip thickness at the end of cut is always 0 (h = 0)

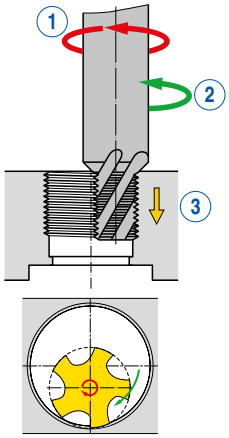
h = 0

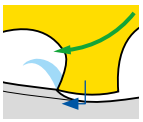
Conventional milling

Characteristics:

1. Tool rotation direction „right“
2. Toolpath clockwise
3. Feed direction „inwards“

Right hand thread

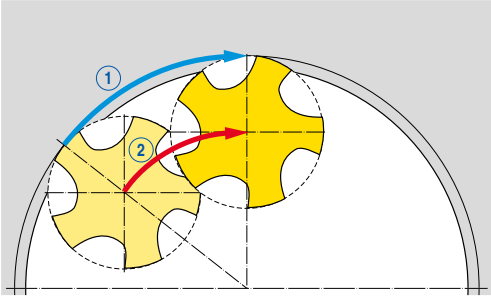




When conventional milling, the chip thickness at the end of cut is always at maximum (h = max)

h = max

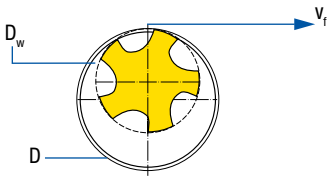
Feed rate calculation



1. Peripheral feedrate v_f
2. Centerline feedrate v_{fm}

Peripheral feedrate v_f

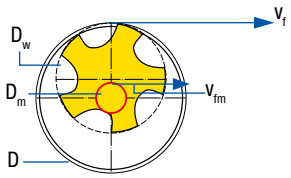
$$v_f = n \cdot f_z \cdot z \quad \text{mm/min.}$$



D_w = Effective diameter in mm
n = RPM in min^{-1}
f_z = Feed per tooth in mm

Centerline feedrate v_{fm}

$$v_{fm} = \frac{v_f \cdot (D - D_w)}{D} \quad \text{mm/min.}$$



z = Number of cutting edges (radial)
D = Nominal thread diameter = external profile diameter in mm
D_m = Centre path diameter ($D - D_w$) in mm

Tips for the User

With thread milling there are two different programme possibilities with the feed motion of the tool.

On the one hand the machine controls the feed at the diameter of the tool, on the other hand the feed control is the tool center line.
In order to ascertain which method the machine control uses, the following method should be employed:

- enter the thread milling routine into the control
- enter a safety margin into the program, so that the tool runs in air
- run the program through and check the operating time
- compare the actual time with the calculated theoretical time

If the time is longer than the calculated time the feed is controlling the tool center line.
If the time is shorter than the calculated time the feed is controlling the diameter of the tool.

Numeric calculation of cutting data for thread milling

$$n = \frac{v_c \cdot 1000}{d \cdot \pi}$$

$$v_c = \frac{d \cdot \pi \cdot n}{1000}$$

$$v_f = f_z \cdot z \cdot n$$

$$n = \frac{v_f}{f_z \cdot z}$$

$$f_z = \frac{v_f}{z \cdot n}$$

Milling – external contour

$$v_{fm} = \frac{v_f \cdot (D + d)}{D}$$

$$v_f = \frac{D \cdot v_{fm}}{(D + d)}$$

Milling – internal contour

$$v_{fm} = \frac{v_f \cdot (D - d)}{D}$$

$$v_f = \frac{D \cdot v_{fm}}{(D - d)}$$

Helical plunging

$$U_{arc} = 0{,}25 \cdot v_{fm}$$

n	=	rpm	rev./min.
v_c	=	cutting speed	m/min
d	=	tool diameter	mm
D	=	nominal thread-Ø	mm
v_f	=	feed rate at the diameter	mm/min.

Ramping in the arc

$$U_{arc} = v_{fm}$$

v_{fm}	=	feed rate at the centre	mm/min.
U_{arc}	=	programmed ramping feed rate	mm/min.
f_z	=	feed per tooth	mm
z	=	number of cutting edges of the cutter	piece

7

Correction values for the internal thread milling

The cutting edge diameter of the thread milling cutter which is entered into the machine control, can be calculated as follows:

half the cutter Ø – 0,05 x pitch p

Example: M30x3
Cutter-Ø: 20 mm

$$Ø\,\frac{20}{2} - (0{,}05 \cdot 3) = \underline{9{,}85\ mm}$$

9,85 mm is the cutting radius to be entered into the machine control

Thread types

M	Metric ISO standard thread
MF	Metric ISO fine thread
G	Whitworth thread
UNF	Unified fine thread
NPT	American taper pipe thread
BSF	Whitworth fine thread
BSW	Whitworth thread
Pg	Steel conduit thread
UN	Unified thread
Tr	Trapezoidal thread

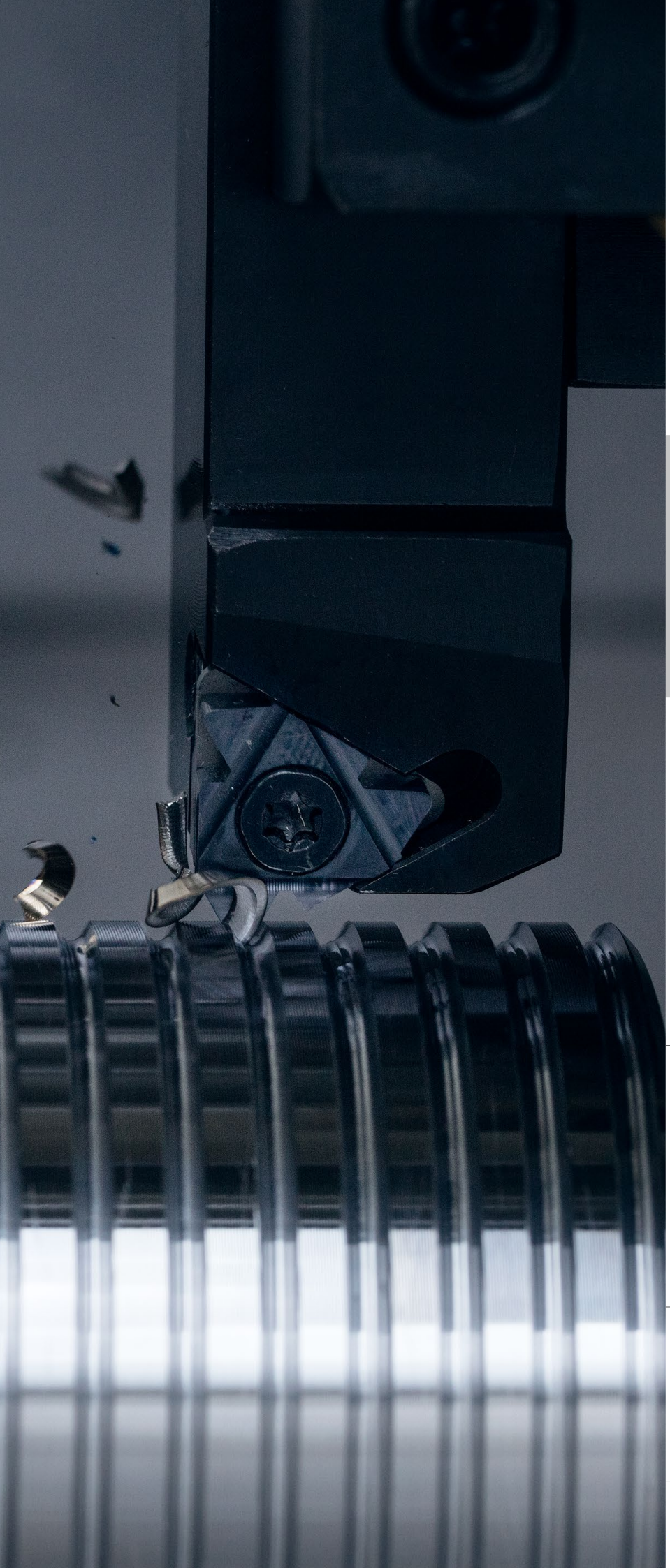
Tool types

EAW	Thread milling cutter with solid carbide inserts and weldon flat
EWM	Thread milling cutter with solid carbide inserts and SK adaptor
GZD	Thread milling cutter with carbide inserts and Weldon flat
GZG	Thread milling cutter with carbide inserts and Weldon flat
HR	Single point thread milling cutter
SFSE	Thread milling cutter with chamfer facet
Mini Mill	Circular milling cutter with solid carbide insert
MWN	Thread milling cutter with carbide inserts and Weldon flat
Polygon	Circular milling cutter with polygon insert seat
SGF	Thread milling cutter
Micro Mill	Solid Carbide Circular End Milling Cutter
System 300	Circular milling cutter with solid carbide insert
UNI	Thread milling cutter for universal application

Coatings

TiN	▲ TiN coating ▲ maximum application temperature: 450 °C
TiAlN	▲ TiAlN multilayer coating ▲ maximum application temperature: 900 °C
Ti500	▲ TiAlN-coating ▲ maximum application temperature: 500 °C
CWX500	▲ carbide, TiAlN-coated ▲ ISO | **K30** ▲ the universal carbide grade for almost all materials
OSM	▲ hard material layer and anti-friction layer ▲ for use in high-strength steels
TiCN	▲ TiCN multilayer coating ▲ maximum application temperature: 450 °C





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	3
Toolfinder	2+3
Product programme	4–38
Shims	39
Technical Information	
Pitch angle	40
Cutting Data	41+42
Thread turning methods	43
Troubleshooting	44
WNT Designation Key	45
Grade description and profile explanation	46

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Toolfinder

TC threading system (external thread)

M	BSW
Full profile Partial profile	Full profile Partial profile

→ Chapter 11 – Grooving tools

TC threading system (internal thread)

M	BSW
Full profile Partial profile	Full profile Partial profile

→ Chapter 11 – Grooving tools

MiniCut

M	G	Tr
Full profile Partial profile	Partial profile	Partial profile

→ Chapter 12 – Miniature turning tools

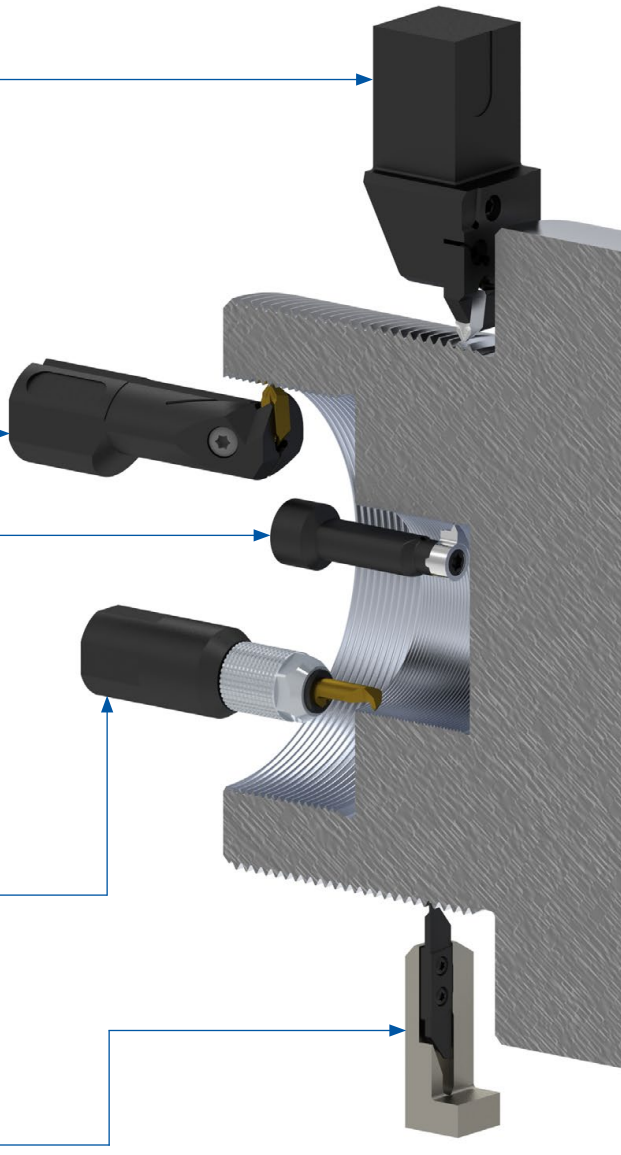
UltraMini

M	MF	G	Tr
Full profile Partial profile	Full profile Partial profile	Partial profile	Partial profile

→ Chapter 12 – Miniature turning tools

VertiClamp/System 25

→ Sliding head tooling catalogue, Chapter 3 – Turning



Symbol explanation

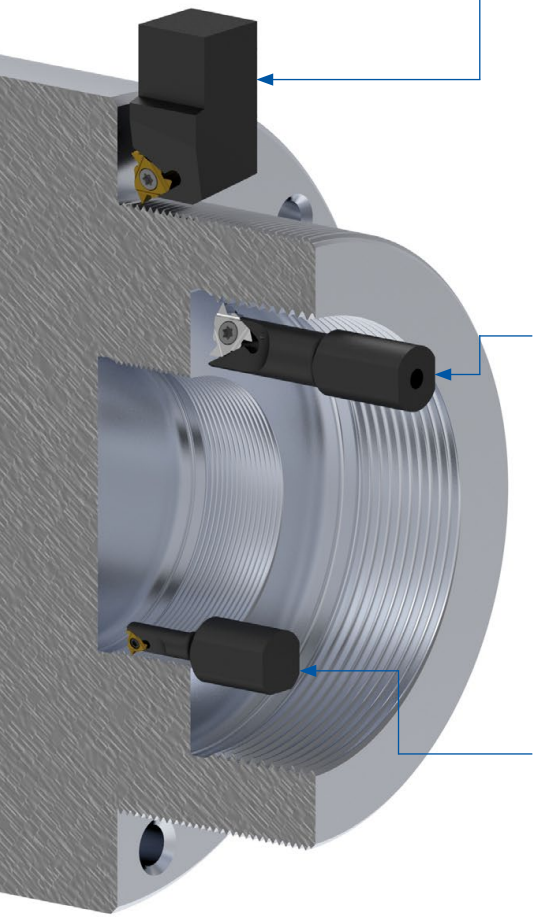
Flank angle

- 30° — Flank angle 30° (Trapezoidal thread)
- 30° — Flank angle 30° (Round thread)
- 55° — Flank angle 55°
- 60° — Flank angle 60°
- 80° — Flank angle 80° (Conduit thread)

● = **Main Application**
○ = Extended application

Threading

- **M** — ISO metric coarse thread DIN 13
- **MF** — ISO Metric fine thread DIN 13
- **MJ** — Metric thread for the aerospace industry DIN ISO 5855
- **BSW** — British Whitworth thread BS 84
- **UN** — American unified thread BS 1580 (ASME B 1.1)
- **UNC** — American unified thread (coarse) BS 1580 (ASME B 1.1)
- **UNF** — American unified thread (fine) BS 1580 (ASME B 1.1)
- **UNEF** — American unified thread (extra fine) BS 1580 (ASME B 1.1)
- **NPT** — American pipe thread ANSI/ASME B 1.20.3
- **Tr** — Trapezoidal thread DIN 103
- **Rd** — Round Thread DIN 405
- **Pg** — Conduit Threads DIN 40430



Standard external thread turning

Full profile

M	MJ	BSW	UN	UNC	UNF	UNEF	NPT	Tr	Rd	Pg
4+5	9	11+12	15+16	15+16	15+16	15+16	19	21	23	25

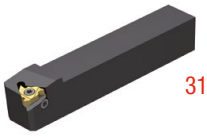
Partial profile

60°	55°
27	29

Multi-cutting edge

M
8

Suitable holder



31

Standard internal thread turning

Full profile

M	MJ	BSW	UN	UNC	UNF	UNEF	NPT	Tr	Rd	Pg
6+7	10	13+14	17+18	17+18	17+18	17+18	20	22	24	26

Partial profile

60°	55°
28	30

Suitable holder



32+33

Mini 06

Full profile

M	BSW
34	34

Partial profile

60°	55°
35	35

Mini 08

Full profile

M
36

Partial profile

60°	55°
36	37

Suitable holder



38

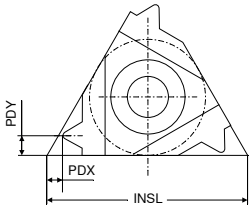
Information on the different thread profiles can be found on → **Page 46.**

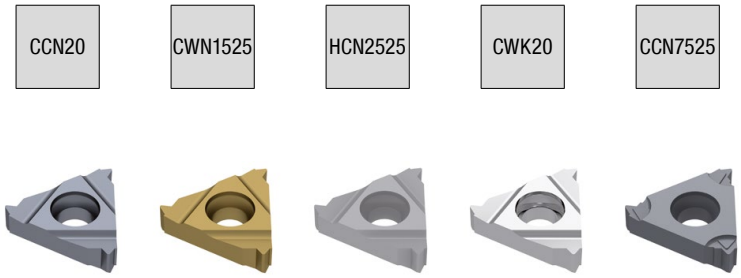
Right hand external thread turning insert

▲ Full profile

▲ CCN7525 grade with sintered chip breaker for universal application







Designation	TP	INSL	PDX	PDY	ER X3 Article no. 71 220 ...		ER X3 Article no. 71 220 ...		ER X3 Article no. 71 220 ...		ER Y1 Article no. 71 220 ...		ER X3 Article no. 71 220 ...	
	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
11 ER 0,35	0,35	11	0,8	0,4	18,05	**204**					11,78	**604**		
11 ER 0,4	0,40	11	0,7	0,4	18,05	**206**					11,78	**606**		
11 ER 0,45	0,45	11	0,7	0,4	18,05	**208**					11,78	**608**		
11 ER 0,5	0,50	11	0,6	0,6	18,05	**209**					11,78	**609**		
11 ER 0,6	0,60	11	0,6	0,6	18,05	**210**					11,78	**610**		
11 ER 0,7	0,70	11	0,6	0,6	18,05	**211**					11,78	**611**		
11 ER 0,75	0,75	11	0,6	0,6	18,05	**212**					11,78	**612**		
11 ER 0,8	0,80	11	0,6	0,6	18,05	**213**					11,78	**613**		
11 ER 1,0	1,00	11	0,7	0,7	16,87	**214**					10,63	**614**		
11 ER 1,25	1,25	11	0,8	0,9	16,87	**216**					10,63	**616**		
11 ER 1,5	1,50	11	0,8	1,0	16,87	**218**					10,63	**618**		
11 ER 1,75	1,75	11	0,8	1,1	16,87	**220**					10,63	**620**		
16 ER 0,35	0,35	16	0,8	0,4	18,05	**234**			21,94	**734**	11,78	**634**		
16 ER 0,4	0,40	16	0,7	0,4	18,05	**236**			21,94	**736**	11,78	**636**		
16 ER 0,45	0,45	16	0,7	0,4	18,05	**238**					11,78	**638**		
16 ER 0,5	0,50	16	0,6	0,6	18,05	**240**	15,14	**140**	16,64	**740**	11,78	**640**	16,64	**940**
16 ER 0,7	0,70	16	0,6	0,6	18,05	**241**	16,22	**141**	17,62	**741**	11,78	**641**		
16 ER 0,75	0,75	16	0,6	0,6	18,05	**242**	15,14	**142**	16,64	**742**	11,78	**642**	16,64	**942**
16 ER 0,8	0,80	16	0,6	0,6	18,05	**243**	15,14	**143**	16,64	**743**	11,78	**643**	16,64	**943**
16 ER 1,0	1,00	16	0,7	0,7	16,87	**244**	14,60	**144**	16,22	**744**	10,63	**644**	16,22	**944**
16 ER 1,25	1,25	16	0,8	0,9	16,87	**246**	14,60	**146**	16,22	**746**	10,63	**646**	16,22	**946**
16 ER 1,5	1,50	16	0,8	1,0	16,87	**248**	14,60	**148**	16,22	**748**	10,63	**648**	16,22	**948**
16 ER 1,75	1,75	16	0,9	1,2	16,87	**250**	14,60	**150**	16,22	**750**	10,63	**650**		
16 ER 2,0	2,00	16	1,0	1,3	16,87	**252**	14,60	**152**	16,22	**752**	10,63	**652**	16,22	**952**
16 ER 2,5	2,50	16	1,1	1,5	16,87	**254**	14,60	**154**	16,22	**754**	10,63	**654**	16,22	**954**
16 ER 3,0	3,00	16	1,2	1,6	16,87	**256**	14,60	**156**	16,22	**756**	10,63	**656**	16,22	**956**
22 ER 3,5	3,50	22	1,6	2,3	25,29	**270**	22,70	**170**	24,97	**770**	16,43	**670**		
22 ER 4,0	4,00	22	1,6	2,3	25,29	**272**	23,89	**172**	25,83	**772**	16,43	**672**		
22 ER 4,5	4,50	22	1,7	2,4	25,29	**274**	25,62	**174**	27,89	**774**	16,43	**674**		
22 ER 5,0	5,00	22	1,7	2,5	25,29	**276**	25,62	**176**	27,89	**776**	16,43	**676**		
22 ER 5,5	5,50	22	1,7	2,6			25,62	**178**						
22 ER 5,5	5,50	22	1,9	2,7	25,29	**278**					16,43	**678**		
22 EN 5,5	5,50	22	2,3	11,0	31,89	**282** 1)					21,62	**682** 1)		
22 ER 6,0	6,00	22	1,9	2,7			25,62	**180**	27,89	**780**				
22 ER 6,0	6,00	22	2,0	2,9	25,29	**280**					16,43	**680**		
22 EN 6,0	6,00	22	2,6	11,0	31,89	**284** 1)					21,62	**684** 1)		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

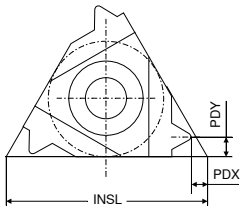
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

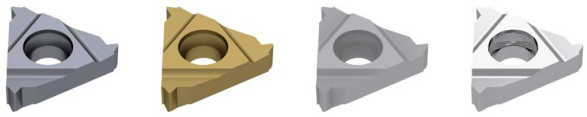
Left hand external thread turning insert

▲ Full profile

M | MF | 60°



CCN20 | CWN1525 | HCN2525 | CWK20



Designation	TP	INSL	PDX	PDY	EL X3 Article no. 71 222 ...		EL X3 Article no. 71 222 ...		EL X3 Article no. 71 222 ...		EL Y1 Article no. 71 222 ...	
	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
11 EL 0,35	0,35	11	0,8	0,4	18,05	**204**					11,78	**604**
11 EL 0,4	0,40	11	0,7	0,4	18,05	**206**					11,78	**606**
11 EL 0,45	0,45	11	0,7	0,4	18,05	**208**					11,78	**608**
11 EL 0,5	0,50	11	0,6	0,6	18,05	**209**					11,78	**609**
11 EL 0,6	0,60	11	0,6	0,6	18,05	**210**					11,78	**610**
11 EL 0,7	0,70	11	0,6	0,6	18,05	**211**					11,78	**611**
11 EL 0,75	0,75	11	0,6	0,6	18,05	**212**					11,78	**612**
11 EL 0,8	0,80	11	0,6	0,6	18,05	**213**					11,78	**613**
11 EL 1,0	1,00	11	0,7	0,7	16,87	**214**					10,63	**614**
11 EL 1,25	1,25	11	0,8	0,9	16,87	**216**					10,63	**616**
11 EL 1,5	1,50	11	0,8	1,0	16,87	**218**					10,63	**618**
11 EL 1,75	1,75	11	0,8	1,1	16,87	**220**					10,63	**620**
16 EL 0,35	0,35	16	0,8	0,4	18,05	**234**					11,78	**634**
16 EL 0,4	0,40	16	0,7	0,4	18,05	**236**					11,78	**636**
16 EL 0,45	0,45	16	0,7	0,4	18,05	**238**					11,78	**638**
16 EL 0,5	0,50	16	0,6	0,6	18,05	**240**					11,78	**640**
16 EL 0,7	0,70	16	0,6	0,6	18,05	**241**					11,78	**641**
16 EL 0,75	0,75	16	0,6	0,6	18,05	**242**					11,78	**642**
16 EL 0,8	0,80	16	0,6	0,6	18,05	**243**					11,78	**643**
16 EL 1,0	1,00	16	0,7	0,7	16,87	**244**	15,56	**144**	16,97	**744**	10,63	**644**
16 EL 1,25	1,25	16	0,8	0,9	16,87	**246**	16,54	**146**			10,63	**646**
16 EL 1,5	1,50	16	0,8	1,0	16,87	**248**	15,56	**148**	16,97	**748**	10,63	**648**
16 EL 1,75	1,75	16	0,9	1,2	16,87	**250**			19,90	**750**	10,63	**650**
16 EL 2,0	2,00	16	1,0	1,3	16,87	**252**	16,54	**152**			10,63	**652**
16 EL 2,5	2,50	16	1,1	1,5	16,87	**254**					10,63	**654**
16 EL 3,0	3,00	16	1,2	1,6	16,87	**256**	19,24	**156**			10,63	**656**
22 EL 3,5	3,50	22	1,6	2,3	25,29	**270**					21,62	**670**
22 EL 4,0	4,00	22	1,6	2,3	25,29	**272**					21,62	**672**
22 EL 4,5	4,50	22	1,7	2,4	25,29	**274**					21,62	**674**
22 EL 5,0	5,00	22	1,7	2,5	25,29	**276**					21,62	**676**
22 EL 5,5	5,50	22	1,9	2,7	25,29	**278**					21,62	**678**
22 EL 6,0	6,00	22	2,0	2,9	25,29	**280**					21,62	**680**

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

→ v_c Page 42

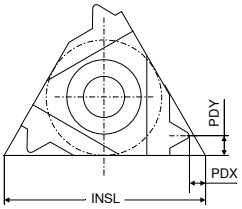
8

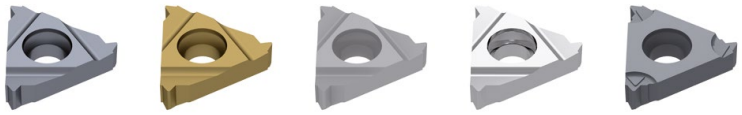
Right hand internal thread turning insert

- Full profile
- CCN7525 grade with sintered chip breaker for universal application

M | MF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 224 ...		IR X3 Article no. 71 224 ...		IR X3 Article no. 71 224 ...		IR Y1 Article no. 71 224 ...		IR X3 Article no. 71 224 ...	
	mm	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
11 IR 0,35	0,35	11	0,8	0,3	18,05	**204**					11,78	**604**		
11 IR 0,4	0,40	11	0,8	0,4	18,05	**206**					11,78	**606**		
11 IR 0,45	0,45	11	0,8	0,4	18,05	**208**					11,78	**608**		
11 IR 0,5	0,50	11	0,6	0,6	18,05	**210**					11,78	**610**		
11 IR 0,7	0,70	11	0,6	0,6	18,05	**211**					11,78	**611**		
11 IR 0,75	0,75	11	0,6	0,6	18,05	**212**					11,78	**612**	19,90	**912**
11 IR 0,8	0,80	11	0,6	0,6	18,05	**213**			22,48	**713**	11,78	**613**		
11 IR 1,0	1,00	11	0,6	0,6									16,22	**914**
11 IR 1,0	1,00	11	0,6	0,7	16,87	**214**	14,60	**114**	16,22	**714**	10,63	**614**		
11 IR 1,25	1,25	11	0,8	0,9	16,87	**216**					10,63	**616**		
11 IR 1,5	1,50	11	0,8	0,9									16,22	**918**
11 IR 1,5	1,50	11	0,8	1,0	16,87	**218**	14,60	**118**	16,22	**718**	10,63	**618**		
11 IR 1,75	1,75	11	0,9	1,1	16,87	**220**					10,63	**620**		
11 IR 2,0	2,00	11	0,8	0,9			14,60	**122**	16,22	**722**				
11 IR 2,0	2,00	11	0,9	1,1	16,87	**222**					10,63	**622**		
11 IR 2,5	2,50	11	0,8	1,2			16,54	**124**	18,05	**724**				
11 IR 2,5	2,50	11	0,9	1,1	16,87	**224**					10,63	**624**		
16 IR 0,35	0,35	16	0,8	0,4	18,05	**234**					11,78	**634**		
16 IR 0,4	0,40	16	0,7	0,4	18,05	**236**					11,78	**636**		
16 IR 0,45	0,45	16	0,7	0,4	18,05	**238**					11,78	**638**		
16 IR 0,5	0,50	16	0,6	0,6	18,05	**240**					11,78	**640**		
16 IR 0,7	0,70	16	0,6	0,6	18,05	**241**					11,78	**641**		
16 IR 0,75	0,75	16	0,6	0,6	18,05	**242**	18,26	**142**	19,90	**742**	11,78	**642**		
16 IR 0,8	0,80	16	0,6	0,6	18,05	**243**					11,78	**643**		
16 IR 1,0	1,00	16	0,6	0,7			14,60	**144**	16,22	**744**			16,22	**944**
16 IR 1,0	1,00	16	0,7	0,7	16,87	**244**					10,63	**644**		
16 IR 1,25	1,25	16	0,8	0,9	16,87	**246**			16,97	**746**	10,63	**646**	16,97	**946**
16 IR 1,5	1,50	16	0,8	1,0	16,87	**248**	14,60	**148**	16,22	**748**	10,63	**648**	16,22	**948**
16 IR 1,75	1,75	16	0,9	1,2	16,87	**250**			19,90	**750**	10,63	**650**		
16 IR 2,0	2,00	16	1,0	1,3	16,87	**252**	14,60	**152**	16,22	**752**	10,63	**652**	16,22	**952**
16 IR 2,5	2,50	16	1,1	1,5	16,87	**254**	14,60	**154**	16,22	**754**	10,63	**654**	16,22	**954**
16 IR 3,0	3,00	16	1,1	1,5	16,87	**256**	14,60	**156**	16,22	**756**	10,63	**656**	16,22	**956**
22 IR 3,5	3,50	22	1,6	2,3	25,29	**270**	23,89	**170**	25,83	**770**	16,43	**670**		
22 IR 4,0	4,00	22	1,6	2,3	25,29	**272**	23,89	**172**	25,83	**772**	16,43	**672**		
22 IR 4,5	4,50	22	1,6	2,4			25,62	**174**	27,89	**774**				
22 IR 4,5	4,50	22	1,7	2,4	25,29	**274**					16,43	**674**		
22 IR 5,0	5,00	22	1,6	2,3			25,62	**176**						
22 IR 5,0	5,00	22	1,7	2,5	25,29	**276**					16,43	**676**		
22 IR 5,5	5,50	22	1,6	2,3			25,95	**178**						
22 IR 5,5	5,50	22	1,9	2,7	25,29	**278**					16,43	**678**		
22 IN 5,5	5,50	22	2,3	11,0	31,89	**282** 1)					21,62	**682** 1)		
22 IR 6,0	6,00	22	1,6	2,4			25,62	**180**						
22 IR 6,0	6,00	22	2,0	2,9	25,29	**280**					16,43	**680**		
22 IN 6,0	6,00	22	2,6	11,0	31,89	**284** 1)					21,62	**684** 1)		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

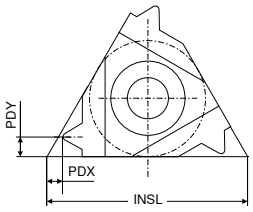
→ v_c Page 42

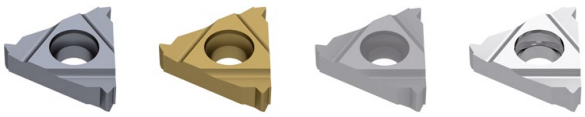
Left hand internal thread turning insert

▲ Full profile

M | MF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20





Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 226 ...		IL X3 Article no. 71 226 ...		IL X3 Article no. 71 226 ...		IL Y1 Article no. 71 226 ...	
	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
11 IL 0,35	0,35	11	0,8	0,3	18,05	**204**					11,78	**604**
11 IL 0,4	0,40	11	0,8	0,4	18,05	**206**					11,78	**606**
11 IL 0,45	0,45	11	0,8	0,4	18,05	**208**					11,78	**608**
11 IL 0,5	0,50	11	0,6	0,6	18,05	**210**					11,78	**610**
11 IL 0,7	0,70	11	0,6	0,6	18,05	**211**					11,78	**611**
11 IL 0,75	0,75	11	0,6	0,6	18,05	**212**					11,78	**612**
11 IL 0,8	0,80	11	0,6	0,6	18,05	**213**					11,78	**613**
11 IL 1,0	1,00	11	0,6	0,7	16,87	**214**					10,63	**614**
11 IL 1,25	1,25	11	0,8	0,9	16,87	**216**					10,63	**616**
11 IL 1,5	1,50	11	0,8	1,0	16,87	**218**					10,63	**618**
11 IL 1,75	1,75	11	0,9	1,1	16,87	**220**					10,63	**620**
11 IL 2,0	2,00	11	0,9	1,1	16,87	**222**					10,63	**622**
11 IL 2,5	2,50	11	0,9	1,1	16,87	**224**					10,63	**624**
16 IL 0,35	0,35	16	0,8	0,4	18,05	**234**					11,78	**634**
16 IL 0,4	0,40	16	0,7	0,4	18,05	**236**					11,78	**636**
16 IL 0,45	0,45	16	0,7	0,4	18,05	**238**					11,78	**638**
16 IL 0,5	0,50	16	0,6	0,6	18,05	**240**					11,78	**640**
16 IL 0,7	0,70	16	0,6	0,6	18,05	**241**					11,78	**641**
16 IL 0,75	0,75	16	0,6	0,6	18,05	**242**					11,78	**642**
16 IL 0,8	0,80	16	0,6	0,6	18,05	**243**					11,78	**643**
16 IL 1,0	1,00	16	0,6	0,7			19,24	**144**				
16 IL 1,0	1,00	16	0,7	0,7	16,87	**244**					10,63	**644**
16 IL 1,25	1,25	16	0,8	0,9	16,87	**246**					10,63	**646**
16 IL 1,5	1,50	16	0,8	1,0	16,87	**248**	18,38	**148**	19,90	**748**	10,63	**648**
16 IL 1,75	1,75	16	0,9	1,2	16,87	**250**					10,63	**650**
16 IL 2,0	2,00	16	1,0	1,3	16,87	**252**	16,54	**152**			10,63	**652**
16 IL 2,5	2,50	16	1,1	1,5	16,87	**254**					10,63	**654**
16 IL 3,0	3,00	16	1,2	1,6	16,87	**256**					10,63	**656**
22 IL 3,5	3,50	22	1,6	2,3	31,68	**270**					21,62	**670**
22 IL 4,0	4,00	22	1,6	2,3	31,68	**272**					21,62	**672**
22 IL 4,5	4,50	22	1,7	2,4	31,68	**274**					21,62	**674**
22 IL 5,0	5,00	22	1,7	2,5	31,68	**276**					21,62	**676**
22 IL 5,5	5,50	22	1,9	2,7	31,68	**278**					21,62	**678**
22 IL 6,0	6,00	22	2,0	2,9	31,68	**280**					21,62	**680**

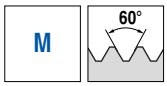
Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

→ v_c Page 42

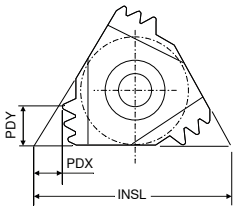
8

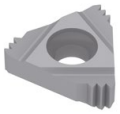
Right hand external thread turning insert

▲ Multi edge insert



HCN2525





Designation	TP	INSL	PDX	PDY	NT	ER X3 Article no. 71 221 ... EUR	
	mm	mm	mm	mm			
16 ER 1,0 3M	1,0	16	1,7	2,5	3	35,35	**700**
16 ER 1,5 2M	1,5	16	1,5	2,3	2	33,95	**702**

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	○

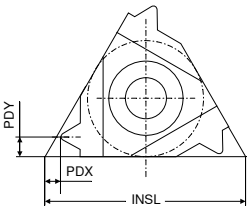
→ v_c Page 42

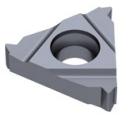
Right hand external thread turning insert

▲ Full profile

MJ | 60°

CCN20 | CWK20







Designation	TP	INSL	PDX	PDY	ER X3 Article no. 71 286 ...		ER Y1 Article no. 71 286 ...	
	mm	mm	mm	mm	EUR		EUR	
11 ER 1,0	1,00	11	0,7	0,8	30,60	**214**	22,91	**614**
11 ER 1,25	1,25	11	0,8	0,9	30,60	**216**	22,91	**616**
11 ER 1,5	1,50	11	0,8	1,0	30,60	**218**	22,91	**618**
11 ER 2,0	2,00	11	0,9	1,0	30,60	**222**	22,91	**622**
16 ER 1,0	1,00	16	0,7	0,8	30,60	**244**	22,91	**644**
16 ER 1,25	1,25	16	0,8	0,9	30,60	**246**	22,91	**646**
16 ER 1,5	1,50	16	0,8	1,0	30,60	**248**	22,91	**648**
16 ER 2,0	2,00	16	1,0	1,3	30,60	**252**	22,91	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

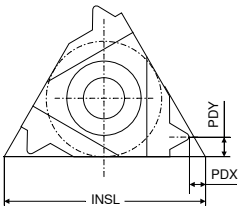
8

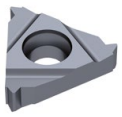
Left hand external thread turning insert

▲ Full profile

MJ | 60°

CCN20 | CWK20







Designation	TP	INSL	PDX	PDY	EL X3 Article no. 71 287 ...		EL Y1 Article no. 71 287 ...	
	mm	mm	mm	mm	EUR		EUR	
11 EL 1,0	1,00	11	0,7	0,8	30,60	**214**	22,91	**614**
11 EL 1,25	1,25	11	0,8	0,9	30,60	**216**	22,91	**616**
11 EL 1,5	1,50	11	0,8	1,0	30,60	**218**	22,91	**618**
11 EL 2,0	2,00	11	0,9	1,0	30,60	**222**	22,91	**622**
16 EL 1,0	1,00	16	0,7	0,8	30,60	**244**	22,91	**644**
16 EL 1,25	1,25	16	0,8	0,9	30,60	**246**	22,91	**646**
16 EL 1,5	1,50	16	0,8	1,0	30,60	**248**	22,91	**648**
16 EL 2,0	2,00	16	1,0	1,3	30,60	**252**	22,91	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

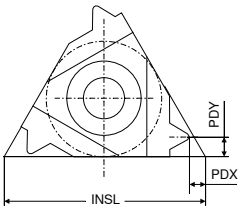
→ v_c Page 42

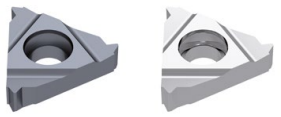
Right hand internal thread turning insert

▲ Full profile

MJ 60°

CCN20 CWK20





Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 284 ...		IR Y1 Article no. 71 284 ...	
	mm	mm	mm	mm	EUR		EUR	
11 IR 1,0	1,00	11	0,7	0,8	30,60	**214**	22,91	**614**
11 IR 1,25	1,25	11	0,8	0,9	30,60	**216**	22,91	**616**
11 IR 1,5	1,50	11	0,8	1,0	30,60	**218**	22,91	**618**
11 IR 2,0	2,00	11	0,9	1,0	30,60	**222**	22,91	**622**
16 IR 1,0	1,00	16	0,7	0,8	30,60	**244**	22,91	**644**
16 IR 1,25	1,25	16	0,8	0,9	30,60	**246**	22,91	**646**
16 IR 1,5	1,50	16	0,8	1,0	30,60	**248**	22,91	**648**
16 IR 2,0	2,00	16	1,0	1,3	30,60	**252**	22,91	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

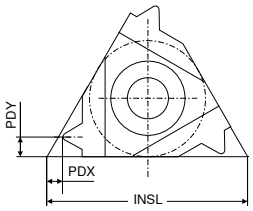
→ v_c Page 42

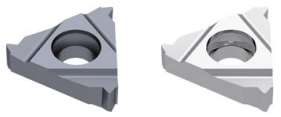
Left hand internal thread turning insert

▲ Full profile

MJ 60°

CCN20 CWK20





Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 285 ...		IL Y1 Article no. 71 285 ...	
	mm	mm	mm	mm	EUR		EUR	
11 IL 1,0	1,00	11	0,7	0,8	30,60	**214**	22,91	**614**
11 IL 1,25	1,25	11	0,8	0,9	30,60	**216**	22,91	**616**
11 IL 1,5	1,50	11	0,8	1,0	30,60	**218**	22,91	**618**
11 IL 2,0	2,00	11	0,9	1,0	30,60	**222**	22,91	**622**
16 IL 1,0	1,00	16	0,7	0,8	30,60	**244**	22,91	**644**
16 IL 1,25	1,25	16	0,8	0,9	30,60	**246**	22,91	**646**
16 IL 1,5	1,50	16	0,8	1,0	30,60	**248**	22,91	**648**
16 IL 2,0	2,00	16	1,0	1,3	30,60	**252**	22,91	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

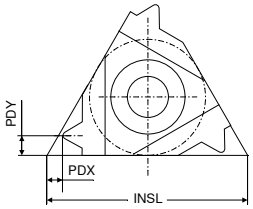
→ v_c Page 42

Right hand external thread turning insert

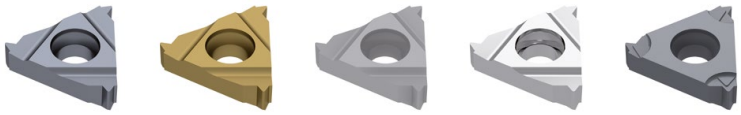
- Full profile
- CCN7525 grade with sintered chip breaker for universal application

BSW





CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525



Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 228 ...		ER X3 Article no. 71 228 ...		ER X3 Article no. 71 228 ...		ER Y1 Article no. 71 228 ...		ER X3 Article no. 71 228 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
11 ER 72	72,0	11	0,7	4,0	21,29	**202**					13,83	**602**		
11 ER 60	60,0	11	0,7	4,0	21,29	**204**					13,83	**604**		
11 ER 56	56,0	11	0,7	4,0	21,29	**206**					13,83	**606**		
11 ER 48	48,0	11	0,6	0,6	21,29	**208**					13,83	**608**		
11 ER 40	40,0	11	0,6	0,6	21,29	**210**					13,83	**610**		
11 ER 36	36,0	11	0,6	0,6	21,29	**212**					13,83	**612**		
11 ER 32	32,0	11	0,6	0,6	21,29	**214**					13,83	**614**		
11 ER 28	28,0	11	0,6	0,7	19,56	**216**					12,75	**616**		
11 ER 26	26,0	11	0,7	0,8	19,56	**218**					12,75	**618**		
11 ER 24	24,0	11	0,7	0,8	19,56	**220**					12,75	**620**		
11 ER 22	22,0	11	0,8	0,9	19,56	**222**					12,75	**622**		
11 ER 20	20,0	11	0,8	0,9	19,56	**224**					12,75	**624**		
11 ER 19	19,0	11	0,8	1,0	19,56	**226**					12,75	**626**		
11 ER 18	18,0	11	0,8	1,0	19,56	**228**					12,75	**628**		
11 ER 16	16,0	11	0,9	1,1	19,56	**230**					12,75	**630**		
11 ER 14	14,0	11	0,9	1,1	19,56	**232**					12,75	**632**		
16 ER 40	40,0	16	0,6	0,6	21,29	**240**					13,83	**640**		
16 ER 36	36,0	16	0,6	0,6	21,29	**242**					13,83	**642**		
16 ER 32	32,0	16	0,6	0,6	21,29	**244**					13,83	**644**		
16 ER 28	28,0	16	0,6	0,7	19,56	**246**	18,80	**146**	20,54	**746**	12,75	**646**		
16 ER 26	26,0	16	0,7	0,7					22,91	**748**				
16 ER 26	26,0	16	0,7	0,8	19,56	**248**					12,75	**648**		
16 ER 24	24,0	16	0,7	0,8	19,56	**250**					12,75	**650**		
16 ER 22	22,0	16	0,8	0,9	19,56	**252**					12,75	**652**		
16 ER 20	20,0	16	0,8	0,9	19,56	**254**			22,91	**754**	12,75	**654**		
16 ER 19	19,0	16	0,8	1,0	19,56	**256**	16,87	**156**	18,60	**756**	12,75	**656**	18,60	**956**
16 ER 18	18,0	16	0,8	1,0	19,56	**258**					12,75	**658**		
16 ER 16	16,0	16	0,9	1,1	19,56	**260**	20,86	**160**	22,37	**760**	12,75	**660**		
16 ER 14	14,0	16	1,0	1,2	19,56	**262**	16,87	**162**	18,60	**762**	12,75	**662**	18,60	**962**
16 ER 12	12,0	16	1,1	1,4	19,56	**264**	20,86	**164**	22,37	**764**	12,75	**664**		
16 ER 11	11,0	16	1,1	1,5	19,56	**266**	16,87	**166**	18,60	**766**	12,75	**666**	18,60	**966**
16 ER 10	10,0	16	1,1	1,5	19,56	**268**					12,75	**668**		
16 ER 9	9,0	16	1,2	1,7	19,56	**270**					12,75	**670**		
16 ER 8	8,0	16	1,2	1,5	19,56	**272**					12,75	**672**		
22 ER 7	7,0	22	1,6	2,3	30,26	**280**					20,44	**680**		
22 ER 6	6,0	22	1,6	2,3	30,26	**282**					20,44	**682**		
22 ER 5	5,0	22	1,7	2,4	30,26	**284**					20,44	**684**		
22 EN 4,5	4,5	22	2,3	11,0	32,53	**290** [1)]					22,16	**690** [1)]		
22 EN 4	4,0	22	1,8	11,0	32,53	**292** [1)]					22,16	**692** [1)]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

8

Left hand external thread turning insert

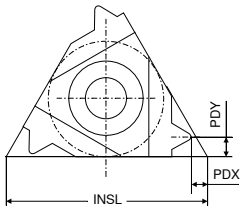
▲ Full profile

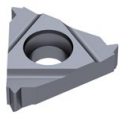
BSW



CCN20

CWK20







Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 229 ...		EL Y1 Article no. 71 229 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 EL 72	72	11	0,7	4,0	24,43	**202**	16,75	**602**
11 EL 60	60	11	0,7	4,0	24,43	**204**	16,75	**604**
11 EL 56	56	11	0,7	4,0	24,43	**206**	16,75	**606**
11 EL 48	48	11	0,6	0,6	24,43	**208**	16,75	**608**
11 EL 40	40	11	0,6	0,6	24,43	**210**	16,75	**610**
11 EL 36	36	11	0,6	0,6	24,43	**212**	15,56	**612**
11 EL 32	32	11	0,6	0,6	24,43	**214**	15,56	**614**
11 EL 28	28	11	0,6	0,7	22,91	**216**	15,56	**616**
11 EL 26	26	11	0,7	0,8	22,91	**218**	15,56	**618**
11 EL 24	24	11	0,7	0,8	22,91	**220**	15,56	**620**
11 EL 22	22	11	0,8	0,9	22,91	**222**	15,56	**622**
11 EL 20	20	11	0,8	0,9	22,91	**224**	15,56	**624**
11 EL 19	19	11	0,8	1,0	22,91	**226**	15,56	**626**
11 EL 18	18	11	0,8	1,0	22,91	**228**	15,56	**628**
11 EL 16	16	11	0,9	1,1	22,91	**230**	15,56	**630**
11 EL 14	14	11	0,9	1,1	19,56	**232**	12,75	**632**
16 EL 40	40	16	0,6	0,6	24,43	**240**	16,75	**640**
16 EL 36	36	16	0,6	0,6	24,43	**242**	16,75	**642**
16 EL 32	32	16	0,6	0,6	24,43	**244**	16,75	**644**
16 EL 28	28	16	0,6	0,7	22,91	**246**	15,56	**646**
16 EL 26	26	16	0,7	0,8	22,91	**248**	15,56	**648**
16 EL 24	24	16	0,7	0,8	22,91	**250**	15,56	**650**
16 EL 22	22	16	0,8	0,9	22,91	**252**	15,56	**652**
16 EL 20	20	16	0,8	0,9	22,91	**254**	15,56	**654**
16 EL 19	19	16	0,8	1,0	22,91	**256**	15,56	**656**
16 EL 18	18	16	0,8	1,0	22,91	**258**	15,56	**658**
16 EL 16	16	16	0,9	1,1	22,91	**260**	15,56	**660**
16 EL 14	14	16	1,0	1,2	19,56	**262**	12,75	**662**
16 EL 12	12	16	1,1	1,4	22,91	**264**	15,56	**664**
16 EL 11	11	16	1,1	1,5	19,56	**266**	12,75	**666**
16 EL 10	10	16	1,1	1,5	26,16	**268**	17,95	**668**
16 EL 9	9	16	1,2	1,7	26,16	**270**	17,95	**670**
16 EL 8	8	16	1,2	1,5	26,16	**272**	17,95	**672**
22 EL 7	7	22	1,6	2,3	35,45	**280**	24,64	**680**
22 EL 6	6	22	1,6	2,3	35,45	**282**	24,64	**682**
22 EL 5	5	22	1,7	2,4	36,21	**284**	24,64	**684**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

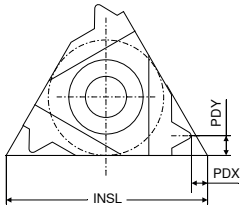
→ v_c Page 42

Right hand internal thread turning insert

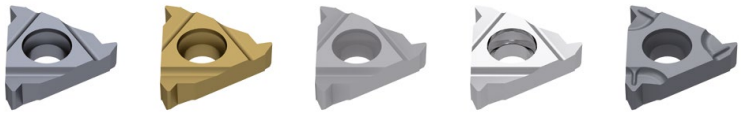
▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

BSW





CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525



Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 230 ...		IR X3 Article no. 71 230 ...		IR X3 Article no. 71 230 ...		IR Y1 Article no. 71 230 ...		IR X3 Article no. 71 230 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
11 IR 48	48	11	0,6	0,6	21,29	**206**					13,83	**606**		
11 IR 40	40	11	0,6	0,6	21,29	**208**					13,83	**608**		
11 IR 36	36	11	0,6	0,6	21,29	**210**					13,83	**610**		
11 IR 32	32	11	0,6	0,6	21,29	**212**					13,83	**612**		
11 IR 28	28	11	0,6	0,7	19,56	**214**					12,75	**614**		
11 IR 26	26	11	0,7	0,8	19,56	**216**					12,75	**616**		
11 IR 24	24	11	0,7	0,8	19,56	**218**					12,75	**618**		
11 IR 22	22	11	0,8	0,9	19,56	**220**					12,75	**620**		
11 IR 20	20	11	0,8	0,9	19,56	**222**					12,75	**622**		
11 IR 19	19	11	0,8	0,9									19,68	**924**
11 IR 19	19	11	0,8	1,0	19,56	**224**	17,95	**124**	19,68	**724**	12,75	**624**		
11 IR 18	18	11	0,8	1,0	19,56	**226**					12,75	**626**		
11 IR 16	16	11	0,9	1,1	19,56	**228**					12,75	**628**		
11 IR 14	14	11	0,8	0,9									19,68	**930**
11 IR 14	14	11	0,9	1,1	19,56	**230**	17,95	**130**	19,68	**730**	12,75	**630**		
16 IR 40	40	16	0,6	0,6	21,29	**240**					13,83	**640**		
16 IR 36	36	16	0,6	0,6	21,29	**242**					13,83	**642**		
16 IR 32	32	16	0,6	0,6	21,29	**244**					13,83	**644**		
16 IR 28	28	16	0,6	0,7	19,56	**246**					12,75	**646**		
16 IR 26	26	16	0,7	0,8	19,56	**248**					12,75	**648**		
16 IR 24	24	16	0,7	0,8	19,56	**250**					12,75	**650**		
16 IR 22	22	16	0,8	0,9	19,56	**252**					12,75	**652**		
16 IR 20	20	16	0,8	0,9	19,56	**254**					12,75	**654**		
16 IR 19	19	16	0,8	1,0	19,56	**256**					12,75	**656**		
16 IR 18	18	16	0,8	1,0	19,56	**258**					12,75	**658**		
16 IR 16	16	16	0,9	1,1	19,56	**260**			22,91	**760**	12,75	**660**		
16 IR 14	14	16	1,0	1,2	19,56	**262**	16,87	**162**	18,60	**762**	12,75	**662**	18,60	**962**
16 IR 12	12	16	1,1	1,4	19,56	**264**					12,75	**664**		
16 IR 11	11	16	1,1	1,5	19,56	**266**	16,87	**166**	18,60	**766**	12,75	**666**	18,60	**966**
16 IR 10	10	16	1,1	1,5	19,56	**268**					12,75	**668**		
16 IR 9	9	16	1,2	1,7	19,56	**270**					12,75	**670**		
16 IR 8	8	16	1,2	1,5	19,56	**272**					12,75	**672**		
22 IR 7	7	22	1,6	2,3	30,60	**280**					20,44	**680**		
22 IR 6	6	22	1,6	2,3	30,60	**282**					20,44	**682**		
22 IR 5	5	22	1,7	2,4	30,60	**284**					20,44	**684**		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

→ v_c Page 42

8

Left hand internal thread turning insert

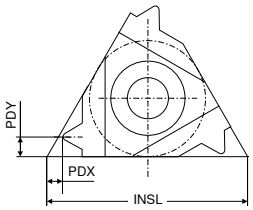
▲ Full profile

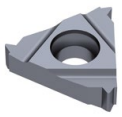
BSW



CCN20

CWK20







Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 231 ...		IL Y1 Article no. 71 231 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 IL 48	48	11	0,6	0,6	24,43	**206**	16,75	**606**
11 IL 40	40	11	0,6	0,6	24,43	**208**	16,75	**608**
11 IL 36	36	11	0,6	0,6	22,91	**210**	15,56	**610**
11 IL 32	32	11	0,6	0,6	22,91	**212**	15,56	**612**
11 IL 28	28	11	0,6	0,7	22,91	**214**	15,56	**614**
11 IL 26	26	11	0,7	0,8	22,91	**216**	15,56	**616**
11 IL 24	24	11	0,7	0,8	22,91	**218**	15,56	**618**
11 IL 22	22	11	0,8	0,9	22,91	**220**	15,56	**620**
11 IL 20	20	11	0,8	0,9	22,91	**222**	15,56	**622**
11 IL 19	19	11	0,8	1,0	22,91	**224**	15,56	**624**
11 IL 18	18	11	0,8	1,0	22,91	**226**	15,56	**626**
11 IL 16	16	11	0,9	1,1	22,91	**228**	15,56	**628**
11 IL 14	14	11	0,9	1,1	19,56	**230**	12,75	**630**
16 IL 40	40	16	0,6	0,6	24,43	**240**	16,75	**640**
16 IL 36	36	16	0,6	0,6	24,43	**242**	16,75	**642**
16 IL 32	32	16	0,6	0,6	24,43	**244**	16,75	**644**
16 IL 28	28	16	0,6	0,7	22,91	**246**	15,56	**646**
16 IL 26	26	16	0,7	0,8	22,91	**248**	15,56	**648**
16 IL 24	24	16	0,7	0,8	22,91	**250**	15,56	**650**
16 IL 22	22	16	0,8	0,9	22,91	**252**	15,56	**652**
16 IL 20	20	16	0,8	0,9	22,91	**254**	15,56	**654**
16 IL 19	19	16	0,8	1,0	22,91	**256**	15,56	**656**
16 IL 18	18	16	0,8	1,0	22,91	**258**	15,56	**658**
16 IL 16	16	16	0,9	1,1	22,91	**260**	15,56	**660**
16 IL 14	14	16	1,0	1,2	19,56	**262**	12,75	**662**
16 IL 12	12	16	1,1	1,4	22,91	**264**	15,56	**664**
16 IL 11	11	16	1,1	1,5	19,56	**266**	12,75	**666**
16 IL 10	10	16	1,1	1,5	26,16	**268**	17,95	**668**
16 IL 9	9	16	1,2	1,7	26,16	**270**	17,95	**670**
16 IL 8	8	16	1,2	1,5	26,16	**272**	17,95	**672**
22 IL 7	7	22	1,6	2,3	35,45	**280**	24,64	**680**
22 IL 6	6	22	1,6	2,3	35,45	**282**	24,64	**682**
22 IL 5	5	22	1,7	2,4	35,45	**284**	24,64	**684**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

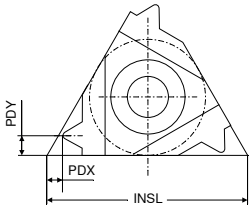
Right hand external thread turning insert

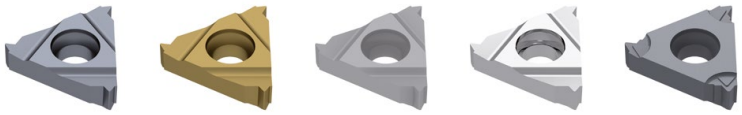
▲ Full profile

▲ CCN7525 grade with sintered chip breaker for universal application

UN | UNC | UNF | UNEF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 264 ...		ER X3 Article no. 71 264 ...		ER X3 Article no. 71 264 ...		ER Y1 Article no. 71 264 ...		ER X3 Article no. 71 264 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
11 ER 72	72,0	11	0,8	0,4	21,40	**202**					13,83	**602**		
11 ER 64	64,0	11	0,8	0,4	21,40	**204**					13,83	**604**		
11 ER 56	56,0	11	0,7	0,4	21,40	**206**					13,83	**606**		
11 ER 48	48,0	11	0,6	0,6	21,40	**208**					13,83	**608**		
11 ER 44	44,0	11	0,6	0,6	21,40	**210**					13,83	**610**		
11 ER 40	40,0	11	0,6	0,6	21,40	**212**					13,83	**612**		
11 ER 36	36,0	11	0,6	0,6	21,40	**214**					13,83	**614**		
11 ER 32	32,0	11	0,6	0,6	21,40	**216**					13,83	**616**		
11 ER 28	28,0	11	0,6	0,7	19,56	**218**					12,86	**618**		
11 ER 27	27,0	11	0,7	0,8	19,56	**220**					12,86	**620**		
11 ER 24	24,0	11	0,7	0,8	19,56	**222**					12,86	**622**		
11 ER 20	20,0	11	0,8	0,9	19,56	**224**					12,86	**624**		
11 ER 18	18,0	11	0,8	1,0	19,56	**226**					12,86	**626**		
11 ER 16	16,0	11	0,9	1,1	19,56	**228**					12,86	**628**		
11 ER 14	14,0	11	0,9	1,1	19,56	**230**					12,86	**630**		
16 ER 72	72,0	16	0,8	0,4	21,29	**232**					13,83	**632**		
16 ER 64	64,0	16	0,8	0,4	21,29	**234**					13,83	**634**		
16 ER 56	56,0	16	0,7	0,4	21,29	**236**					13,83	**636**		
16 ER 48	48,0	16	0,6	0,6	21,29	**238**					13,83	**638**		
16 ER 44	44,0	16	0,6	0,6	21,29	**240**					13,83	**640**		
16 ER 40	40,0	16	0,6	0,6	21,29	**242**					13,83	**642**		
16 ER 36	36,0	16	0,6	0,6	21,29	**244**					13,83	**644**		
16 ER 32	32,0	16	0,6	0,6	21,29	**246**			24,10	**746**	13,83	**646**		
16 ER 28	28,0	16	0,6	0,7	19,56	**248**			22,37	**748**	12,75	**648**		
16 ER 27	27,0	16	0,7	0,8	19,56	**250**					12,75	**650**		
16 ER 24	24,0	16	0,7	0,8	19,56	**252**	18,80	**152**	20,54	**752**	12,75	**652**		
16 ER 20	20,0	16	0,8	0,9	19,56	**254**	17,95	**154**	19,68	**754**	12,75	**654**	19,68	**954**
16 ER 18	18,0	16	0,8	1,0	19,56	**256**	18,80	**156**	20,54	**756**	12,75	**656**		
16 ER 16	16,0	16	0,9	1,1	19,56	**258**	17,95	**158**	19,68	**758**	12,75	**658**	19,68	**958**
16 ER 14	14,0	16	1,0	1,2	19,56	**260**	18,80	**160**	20,54	**760**	12,75	**660**		
16 ER 13	13,0	16	1,0	1,3	19,56	**262**					12,75	**662**		
16 ER 12	12,0	16	1,1	1,4	19,56	**264**	18,80	**164**	20,54	**764**	12,75	**664**		
16 ER 11,5	11,5	16	1,1	1,5	19,56	**266**					12,75	**666**		
16 ER 11	11,0	16	1,1	1,5	19,56	**268**	21,40	**168**			12,75	**668**		
16 ER 10	10,0	16	1,1	1,5	19,56	**270**					12,75	**670**		
16 ER 9	9,0	16	1,2	1,7	19,56	**272**					12,75	**672**		
16 ER 8	8,0	16	1,1	1,1									22,91	**974**
16 ER 8	8,0	16	1,1	1,5			21,40	**174**						
16 ER 8	8,0	16	1,2	1,6	19,56	**274**					12,75	**674**		
22 ER 7	7,0	22	1,6	2,3	30,60	**276**					20,44	**676**		
22 ER 6	6,0	22	1,6	2,3	30,60	**278**					20,44	**678**		
22 ER 5	5,0	22	1,7	2,5	30,60	**280**					20,44	**680**		
22 EN 4,5	4,5	22	2,0	11,0	32,53	**282** [1]					22,27	**682** [1]		
22 EN 4	4,0	22	2,0	11,0	32,53	**284** [1]					22,27	**684** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

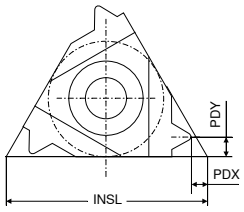
8

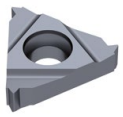
Left hand external thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 266 ...		EL Y1 Article no. 71 266 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 EL 72	72,0	11	0,8	0,4	25,07	**202**	16,75	**602**
11 EL 64	64,0	11	0,8	0,4	25,07	**204**	16,75	**604**
11 EL 56	56,0	11	0,7	0,4	25,07	**206**	16,75	**606**
11 EL 48	48,0	11	0,6	0,6	25,07	**208**	16,75	**608**
11 EL 44	44,0	11	0,6	0,6	25,07	**210**	16,75	**610**
11 EL 40	40,0	11	0,6	0,6	25,07	**212**	16,75	**612**
11 EL 36	36,0	11	0,6	0,6	25,07	**214**	16,75	**614**
11 EL 32	32,0	11	0,6	0,6	25,07	**216**	16,75	**616**
11 EL 28	28,0	11	0,6	0,7	25,07	**218**	15,56	**618**
11 EL 27	27,0	11	0,7	0,8	25,07	**220**	15,56	**620**
11 EL 24	24,0	11	0,7	0,8	25,07	**222**	15,56	**622**
11 EL 20	20,0	11	0,8	0,9	25,07	**224**	15,56	**624**
11 EL 18	18,0	11	0,8	1,0	25,07	**226**	15,56	**626**
11 EL 16	16,0	11	0,9	1,1	25,07	**228**	15,56	**628**
11 EL 14	14,0	11	0,9	1,1	25,07	**230**	15,56	**630**
16 EL 72	72,0	16	0,8	0,4	24,43	**232**	16,75	**632**
16 EL 64	64,0	16	0,8	0,4	24,43	**234**	16,75	**634**
16 EL 56	56,0	16	0,7	0,4	24,43	**236**	16,75	**636**
16 EL 48	48,0	16	0,6	0,6	24,43	**238**	16,75	**638**
16 EL 44	44,0	16	0,6	0,6	24,43	**240**	16,75	**640**
16 EL 40	40,0	16	0,6	0,6	24,43	**242**	16,75	**642**
16 EL 36	36,0	16	0,6	0,6	24,43	**244**	16,75	**644**
16 EL 32	32,0	16	0,6	0,6	24,43	**246**	16,75	**646**
16 EL 28	28,0	16	0,6	0,7	22,91	**248**	15,56	**648**
16 EL 27	27,0	16	0,7	0,8	22,91	**250**	15,56	**650**
16 EL 24	24,0	16	0,7	0,8	22,91	**252**	15,56	**652**
16 EL 20	20,0	16	0,8	0,9	22,91	**254**	15,56	**654**
16 EL 18	18,0	16	0,8	1,0	22,91	**256**	15,56	**656**
16 EL 16	16,0	16	0,9	1,1	22,91	**258**	15,56	**658**
16 EL 14	14,0	16	1,0	1,2	22,91	**260**	15,56	**660**
16 EL 13	13,0	16	1,0	1,3	22,91	**262**	15,56	**662**
16 EL 12	12,0	16	1,1	1,4	19,56	**264**	12,75	**664**
16 EL 11,5	11,5	16	1,1	1,5	26,16	**266**	15,56	**666**
16 EL 11	11,0	16	1,1	1,5	26,16	**268**	15,56	**668**
16 EL 10	10,0	16	1,1	1,5	26,16	**270**	15,56	**670**
16 EL 9	9,0	16	1,2	1,7	26,16	**272**	15,56	**672**
16 EL 8	8,0	16	1,2	1,6	26,16	**274**	15,56	**674**
22 EL 7	7,0	22	1,6	2,3	35,45	**276**	24,64	**676**
22 EL 6	6,0	22	1,6	2,3	35,45	**278**	24,64	**678**
22 EL 5	5,0	22	1,7	2,5	35,45	**280**	24,64	**680**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

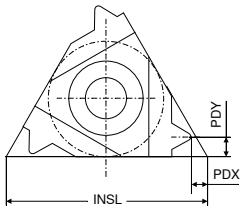
→ v_c Page 42

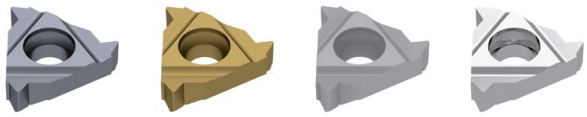
Right hand internal thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20





Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 268 ...		IR X3 Article no. 71 268 ...		IR X3 Article no. 71 268 ...		IR Y1 Article no. 71 268 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR		EUR	
11 IR 72	72,0	11	0,8	0,3	21,40	**202**					13,83	**602**
11 IR 64	64,0	11	0,8	0,4	21,40	**204**					13,83	**604**
11 IR 56	56,0	11	0,7	0,4	21,40	**206**					13,83	**606**
11 IR 48	48,0	11	0,6	0,6	21,40	**208**					13,83	**608**
11 IR 44	44,0	11	0,6	0,6	21,40	**210**					13,83	**610**
11 IR 40	40,0	11	0,6	0,6	21,40	**212**					13,83	**612**
11 IR 36	36,0	11	0,6	0,6	21,40	**214**					13,83	**614**
11 IR 32	32,0	11	0,6	0,6	21,40	**216**					13,83	**616**
11 IR 28	28,0	11	0,6	0,7	19,56	**218**					12,86	**618**
11 IR 27	27,0	11	0,7	0,8	19,56	**220**					12,86	**620**
11 IR 24	24,0	11	0,7	0,8	19,56	**222**					12,86	**622**
11 IR 20	20,0	11	0,8	0,9	19,56	**224**					12,86	**624**
11 IR 18	18,0	11	0,8	1,0	19,56	**226**					12,86	**626**
11 IR 16	16,0	11	0,9	1,1	19,56	**228**					12,86	**628**
11 IR 14	14,0	11	1,0	1,1	19,56	**230**					12,86	**630**
16 IR 72	72,0	16	0,8	0,3	21,29	**232**					13,83	**632**
16 IR 64	64,0	16	0,8	0,4	21,29	**234**					13,83	**634**
16 IR 56	56,0	16	0,7	0,4	21,29	**236**					13,83	**636**
16 IR 48	48,0	16	0,6	0,6	21,29	**238**					13,83	**638**
16 IR 44	44,0	16	0,6	0,6	21,29	**240**					13,83	**640**
16 IR 40	40,0	16	0,6	0,6	21,29	**242**					13,83	**642**
16 IR 36	36,0	16	0,6	0,6	21,29	**244**					13,83	**644**
16 IR 32	32,0	16	0,6	0,6	21,29	**246**					13,83	**646**
16 IR 28	28,0	16	0,6	0,7	19,56	**248**					12,75	**648**
16 IR 27	27,0	16	0,7	0,8	19,56	**250**					12,75	**650**
16 IR 24	24,0	16	0,7	0,8	19,56	**252**					12,75	**652**
16 IR 20	20,0	16	0,8	0,9	19,56	**254**					12,75	**654**
16 IR 18	18,0	16	0,8	1,0	19,56	**256**					12,75	**656**
16 IR 16	16,0	16	0,9	1,1	19,56	**258**					12,75	**658**
16 IR 14	14,0	16	1,0	1,2	19,56	**260**			22,91	**760**	12,75	**660**
16 IR 13	13,0	16	1,0	1,3	19,56	**262**					12,75	**662**
16 IR 12	12,0	16	1,1	1,4	19,56	**264**	18,80	**164**	20,54	**764**	12,75	**664**
16 IR 11,5	11,5	16	1,1	1,5	19,56	**266**					12,75	**666**
16 IR 11	11,0	16	1,1	1,5	19,56	**268**					12,75	**668**
16 IR 10	10,0	16	1,1	1,5	19,56	**270**					12,75	**670**
16 IR 9	9,0	16	1,2	1,7	19,56	**272**					12,75	**672**
16 IR 8	8,0	16	1,2	1,6	19,56	**274**					12,75	**674**
16 IR 8	8,0	16	1,1	1,5					22,91	**774**		
22 IR 7	7,0	22	1,6	2,3	30,60	**276**			32,86	**776**	20,44	**676**
22 IR 6	6,0	22	1,6	2,3	30,60	**278**					20,44	**678**
22 IR 5	5,0	22	1,7	2,5	30,60	**280**					20,44	**680**
22 IN 4,5	4,5	22	2,0	11,0	32,53	**282** [1]					22,27	**682** [1]
22 IN 4	4,0	22	2,0	11,0	32,53	**284** [1]					22,27	**684** [1]

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

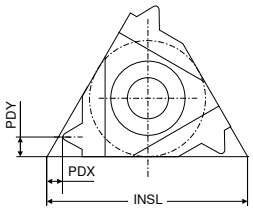
8

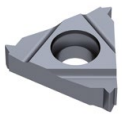
Left hand internal thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 270 ...		IL Y1 Article no. 71 270 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 IL 72	72,0	11	0,8	0,3	25,07	**202**	16,75	**602**
11 IL 64	64,0	11	0,8	0,4	25,07	**204**	16,75	**604**
11 IL 56	56,0	11	0,7	0,4	25,07	**206**	16,75	**606**
11 IL 48	48,0	11	0,6	0,6	25,07	**208**	16,75	**608**
11 IL 44	44,0	11	0,6	0,6	25,07	**210**	16,75	**610**
11 IL 40	40,0	11	0,6	0,6	25,07	**212**	16,75	**612**
11 IL 36	36,0	11	0,6	0,6	25,07	**214**	16,75	**614**
11 IL 32	32,0	11	0,6	0,6	25,07	**216**	16,75	**616**
11 IL 28	28,0	11	0,6	0,7	25,07	**218**	15,56	**618**
11 IL 27	27,0	11	0,7	0,8	25,07	**220**	15,56	**620**
11 IL 24	24,0	11	0,7	0,8	25,07	**222**	15,56	**622**
11 IL 20	20,0	11	0,8	0,9	25,07	**224**	15,56	**624**
11 IL 18	18,0	11	0,8	1,0	25,07	**226**	15,56	**626**
11 IL 16	16,0	11	0,9	1,1	25,07	**228**	15,56	**628**
11 IL 14	14,0	11	0,9	1,1	25,07	**230**	15,56	**630**
16 IL 72	72,0	16	0,8	0,3	25,07	**232**	16,75	**632**
16 IL 64	64,0	16	0,8	0,4	25,07	**234**	16,75	**634**
16 IL 56	56,0	16	0,7	0,4	25,07	**236**	16,75	**636**
16 IL 48	48,0	16	0,6	0,6	25,07	**238**	16,75	**638**
16 IL 44	44,0	16	0,6	0,6	25,07	**240**	16,75	**640**
16 IL 40	40,0	16	0,6	0,6	25,07	**242**	16,75	**642**
16 IL 36	36,0	16	0,6	0,6	25,07	**244**	16,75	**644**
16 IL 32	32,0	16	0,6	0,6	25,07	**246**	16,75	**646**
16 IL 28	28,0	16	0,6	0,7	25,07	**248**	15,56	**648**
16 IL 27	27,0	16	0,7	0,8	25,07	**250**	15,56	**650**
16 IL 24	24,0	16	0,7	0,8	25,07	**252**	15,56	**652**
16 IL 20	20,0	16	0,8	0,9	25,07	**254**	15,56	**654**
16 IL 18	18,0	16	0,8	1,0	25,07	**256**	15,56	**656**
16 IL 16	16,0	16	0,9	1,1	25,07	**258**	15,56	**658**
16 IL 14	14,0	16	1,0	1,2	25,07	**260**	15,56	**660**
16 IL 13	13,0	16	1,0	1,3	25,07	**262**	15,56	**662**
16 IL 12	12,0	16	1,1	1,4	25,07	**264**	12,86	**664**
16 IL 11,5	11,5	16	1,1	1,5	25,07	**266**	17,95	**666**
16 IL 11	11,0	16	1,1	1,5	25,07	**268**	15,56	**668**
16 IL 10	10,0	16	1,1	1,5	25,07	**270**	17,95	**670**
16 IL 9	9,0	16	1,2	1,7	25,07	**272**	17,95	**672**
16 IL 8	8,0	16	1,2	1,6	25,07	**274**	17,95	**674**
22 IL 7	7,0	22	1,6	2,3	25,07	**276**	24,64	**676**
22 IL 6	6,0	22	1,6	2,3	25,07	**278**	24,64	**678**
22 IL 5	5,0	22	1,7	2,5	25,07	**280**	24,64	**680**

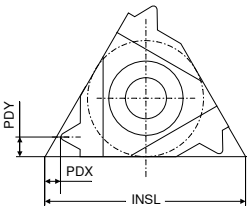
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

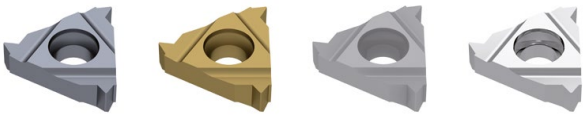
Right hand external thread turning insert

▲ Full profile

NPT 60°



CCN20 | CWN1525 | HCN2525 | CWK20



Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 256 ... EUR		ER X3 Article no. 71 256 ... EUR		ER X3 Article no. 71 256 ... EUR		ER Y1 Article no. 71 256 ... EUR	
	1/"	mm	mm	mm								
16 ER 27	27,0	16	0,7	0,8	21,94	**240**					14,60	**640**
16 ER 18	18,0	16	0,8	1,0	21,94	**242**			24,76	**742**	14,60	**642**
16 ER 14	14,0	16	0,9	1,2	21,94	**244**	20,86	**144**	22,70	**744**	14,60	**644**
16 ER 11,5	11,5	16	1,1	1,5	21,94	**246**	22,60	**146**	24,76	**746**	14,60	**646**
16 ER 8	8,0	16	1,3	1,8	21,94	**248**					14,60	**648**

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

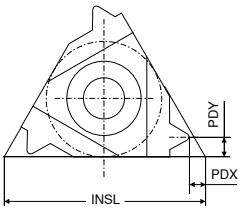
→ v_c Page 42

8

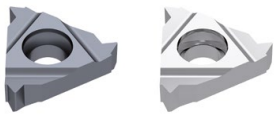
Left hand external thread turning insert

▲ Full profile

NPT 60°



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 258 ... EUR		EL Y1 Article no. 71 258 ... EUR	
	1/"	mm	mm	mm				
16 EL 27	27,0	16	0,7	0,8	25,51	**240**	17,51	**640**
16 EL 18	18,0	16	0,8	1,0	25,51	**242**	17,51	**642**
16 EL 14	14,0	16	0,9	1,2	25,51	**244**	17,51	**644**
16 EL 11,5	11,5	16	1,1	1,5	25,51	**246**	17,51	**646**
16 EL 8	8,0	16	1,3	1,8	25,51	**248**	17,51	**648**

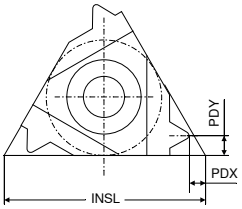
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

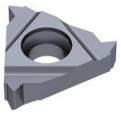
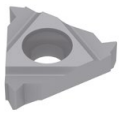
→ v_c Page 42

Right hand internal thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

NPT 60°



	CCN20	HCN2525	CWK20	CCN7525
				

Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 260 ...		IR X3 Article no. 71 260 ...		IR Y1 Article no. 71 260 ...		IR X3 Article no. 71 260 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR		EUR	
11 IR 27	27,0	11	0,7	0,8	21,94	**210**			14,60	**610**		
11 IR 18	18,0	11	0,8	1,0	21,94	**212**			14,60	**612**		
11 IR 14	14,0	11	0,9	1,1	21,94	**214**			14,60	**614**		
16 IR 27	27,0	16	0,7	0,8	21,94	**240**			14,60	**640**		
16 IR 18	18,0	16	0,8	1,0	21,94	**242**			14,60	**642**		
16 IR 14	14,0	16	0,9	1,2	21,94	**244**	26,16	**744**	14,60	**644**	26,16	**944**
16 IR 11,5	11,5	16	1,1	1,5	21,94	**246**			14,60	**646**	26,49	**946**
16 IR 8	8,0	16	1,3	1,8	21,94	**248**			14,60	**648**		

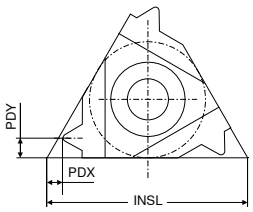
Steel	●	○		●
Stainless steel	●	●		●
Cast iron		○	●	●
Non ferrous metals	○	○	●	○
Heat resistant alloys		○	○	●

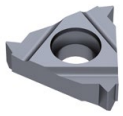
→ v_c Page 42

Left hand internal thread turning insert

▲ Full profile

NPT 60°



	CCN20	CWK20
		

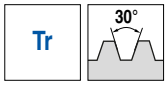
Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 262 ...		IL Y1 Article no. 71 262 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 IL 27	27,0	11	0,7	0,8	25,51	**210**	17,51	**610**
11 IL 18	18,0	11	0,8	1,0	25,51	**212**	17,51	**612**
11 IL 14	14,0	11	0,9	1,1	25,51	**214**	17,51	**614**
16 IL 27	27,0	16	0,7	0,8	25,51	**240**	17,51	**640**
16 IL 18	18,0	16	0,8	1,0	25,51	**242**	17,51	**642**
16 IL 14	14,0	16	0,9	1,2	25,51	**244**	17,51	**644**
16 IL 11,5	11,5	16	1,1	1,5	25,51	**246**	17,51	**646**
16 IL 8	8,0	16	1,3	1,8	25,51	**248**	17,51	**648**

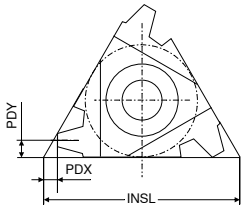
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

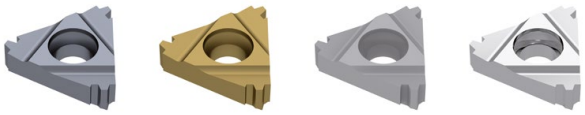
Right hand external thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103





CCN20 | CWN1525 | HCN2525 | CWK20



Designation	TP mm	INSL mm	PDX mm	PDY mm	ER X3 Article no. 71 232 ...	EUR	ER X3 Article no. 71 232 ...	EUR	ER X3 Article no. 71 232 ...	EUR	ER Y1 Article no. 71 232 ...	EUR
16 ER 1,5	1,5	16	1,0	1,1	23,68	**240**					15,89	**640**
16 ER 2,0	2,0	16	1,1	1,3	23,68	**242**					15,89	**642**
16 ER 2,0	2,0	16	1,0	1,3			22,27	**142**	25,07	**742**		
16 ER 3,0	3,0	16	1,3	1,5	23,68	**244**	21,18	**144**			15,89	**644**
22 ER 4,0	4,0	22	1,7	1,9	32,65	**270**					22,27	**670**
22 ER 4,0	4,0	22	1,8	1,9			30,26	**170**	34,15	**770**		
22 ER 5,0	5,0	22	2,0	2,4			33,30	**172**				
22 ER 5,0	5,0	22	2,1	2,5	34,05	**272**					23,45	**672**
22 ER 6,0	6,0	22	2,3	2,7	35,45	**274**					24,64	**674**
22 EN 6,0	6,0	22	2,0	11,0	35,45	**276** 1)					24,64	**676** 1)
22 EN 7,0	7,0	22	2,3	11,0	36,87	**278** 1)					25,73	**678** 1)

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

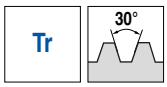
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

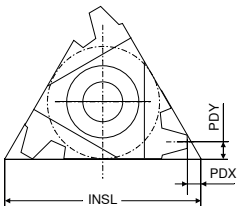
→ v_c Page 42

8

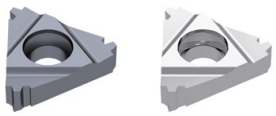
Left hand external thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103





CCN20 | CWK20



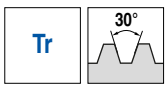
Designation	TP mm	INSL mm	PDX mm	PDY mm	EL X3 Article no. 71 234 ...	EUR	EL Y1 Article no. 71 234 ...	EUR
16 EL 1,5	1,5	16	1,0	1,1	27,46	**240**	19,14	**640**
16 EL 2,0	2,0	16	1,1	1,3	27,46	**242**	19,14	**642**
16 EL 3,0	3,0	16	1,3	1,5	27,46	**244**	19,14	**644**
22 EL 4,0	4,0	22	1,7	1,9	38,26	**270**	26,70	**670**
22 EL 5,0	5,0	22	2,1	2,5	39,99	**272**	28,22	**672**
22 EL 6,0	6,0	22	2,3	2,7	41,61	**274**	29,40	**674**

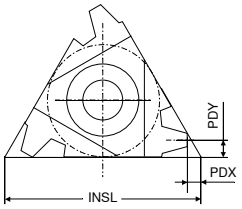
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

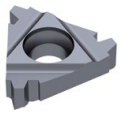
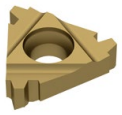
Right hand internal thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103





CCN20 | CWN1525 | CWK20

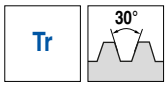

Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 236 ...	EUR	IR X3 Article no. 71 236 ...	EUR	IR Y1 Article no. 71 236 ...	EUR
	mm	mm	mm	mm						
11 IR 1,5	1,5	11	0,8	0,9	23,45	**210**			15,89	**610**
16 IR 1,5	1,5	16	1,0	1,1	23,45	**240**			15,89	**640**
16 IR 2,0	2,0	16	1,1	1,3	23,45	**242**			15,89	**642**
16 IR 3,0	3,0	16	1,3	1,5	23,45	**244**	24,22	**144**	15,89	**644**
22 IR 4,0	4,0	22	1,8	1,9			31,89	**170**		
22 IR 4,0	4,0	22	1,7	1,9	32,65	**270**			22,27	**670**
22 IR 5,0	5,0	22	2,0	2,4			33,07	**172**		
22 IR 5,0	5,0	22	2,1	2,5	34,05	**272**			23,45	**672**
22 IR 6,0	6,0	22	2,3	2,7	35,45	**274**			24,64	**674**
22 IN 6,0	6,0	22	2,0	11,0	35,45	**276** 1)			24,64	**676** 1)
22 IN 7,0	7,0	22	2,3	11,0	36,87	**278** 1)			25,73	**678** 1)
Steel					●		●			
Stainless steel					●		○			
Cast iron							●		●	
Non ferrous metals					○		●		●	
Heat resistant alloys									○	

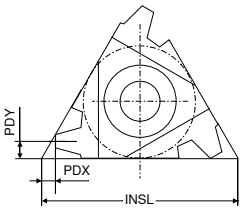
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

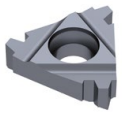
Left hand internal thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103





CCN20 | CWK20




Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 238 ...	EUR	IL Y1 Article no. 71 238 ...	EUR
	mm	mm	mm	mm				
11 IL 1,5	1,5	11	0,8	0,9	27,46	**210**	19,14	**610**
16 IL 1,5	1,5	16	1,0	1,1	27,46	**240**	19,14	**640**
16 IL 2,0	2,0	16	1,1	1,3	27,46	**242**	19,14	**642**
16 IL 3,0	3,0	16	1,3	1,5	27,46	**244**	19,14	**644**
22 IL 4,0	4,0	22	1,7	1,9	38,26	**270**	26,70	**670**
22 IL 5,0	5,0	22	2,1	2,5	38,26	**272**	26,70	**672**
22 IL 6,0	6,0	22	2,3	2,7	39,99	**274**	28,22	**674**
Steel					●			
Stainless steel					●			
Cast iron							●	
Non ferrous metals					○		●	
Heat resistant alloys							○	

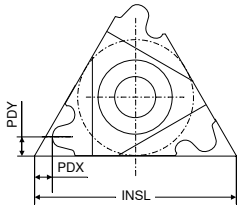
→ v_c Page 42

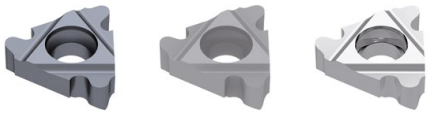
Right hand external thread turning insert

▲ Full profile
▲ Round thread DIN 405



CCN20 | HCN2525 | CWK20





Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 248 ...		ER X3 Article no. 71 248 ...		ER Y1 Article no. 71 248 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR	
16 ER 10	10	16	1,1	1,2	23,45	**240**			15,89	**640**
16 ER 8	8	16	1,4	1,3	23,45	**242**			15,89	**642**
16 ER 6	6	16	1,5	1,7	23,45	**246**	26,81	**746**	15,89	**646**
22 ER 6	6	22	1,5	1,7	32,76	**270**			22,48	**670**
22 ER 4	4	22	2,2	2,3	35,45	**272**			24,64	**672**

Steel	●	○	
Stainless steel	●	●	
Cast iron		○	●
Non ferrous metals	○	○	●
Heat resistant alloys		○	○

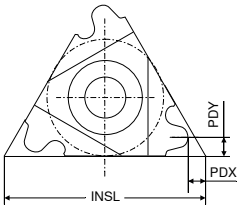
→ v_c Page 42

Left hand external thread turning insert

▲ Full profile
▲ Round thread DIN 405



CCN20 | CWK20





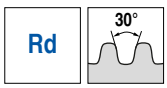
Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 250 ...		EL Y1 Article no. 71 250 ...	
	1/"	mm	mm	mm	EUR		EUR	
16 EL 10	10	16	1,1	1,2	27,35	**240**	19,14	**640**
16 EL 8	8	16	1,4	1,3	27,35	**242**	19,14	**642**
16 EL 6	6	16	1,5	1,7	27,35	**246**	19,14	**646**
22 EL 6	6	22	1,5	1,7	38,37	**270**	26,81	**670**
22 EL 4	4	22	2,2	2,3	41,61	**272**	29,40	**672**

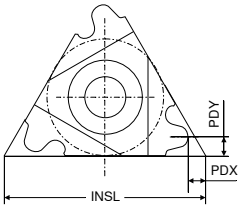
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

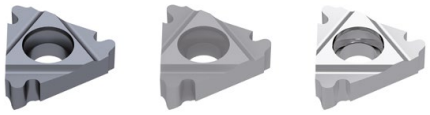
Right hand internal thread turning insert

▲ Full profile
▲ Round thread DIN 405





CCN20 | HCN2525 | CWK20



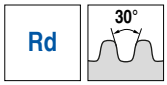
Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 252 ...		IR X3 Article no. 71 252 ...		IR Y1 Article no. 71 252 ...	
	1/"	mm	mm	mm	EUR		EUR		EUR	
16 IR 10	10	16	1,1	1,2	23,45	**240**			15,89	**640**
16 IR 8	8	16	1,4	1,4	23,45	**242**			15,89	**642**
16 IR 6	6	16	1,4	1,5	23,45	**246**	27,13	**746**	15,89	**646**
22 IR 6	6	22	1,5	1,7	32,76	**270**			22,48	**670**
22 IR 4	4	22	2,2	2,3	35,45	**272**			24,64	**672**

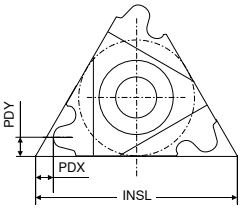
Steel	●	○	
Stainless steel	●	●	
Cast iron		○	●
Non ferrous metals	○	○	●
Heat resistant alloys		○	○

→ v_c Page 42

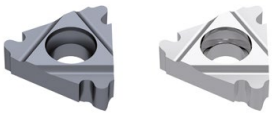
Left hand internal thread turning insert

▲ Full profile
▲ Round thread DIN 405





CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 254 ...		IL Y1 Article no. 71 254 ...	
	1/"	mm	mm	mm	EUR		EUR	
16 IL 10	10	16	1,1	1,2	21,94	**240**	19,14	**640**
16 IL 8	8	16	1,4	1,4	21,94	**242**	19,14	**642**
16 IL 6	6	16	1,4	1,5	21,94	**246**	19,14	**646**
22 IL 6	6	22	1,5	1,7	30,80	**270**	26,81	**670**
22 IL 4	4	22	2,2	2,3	33,19	**272**	29,40	**672**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

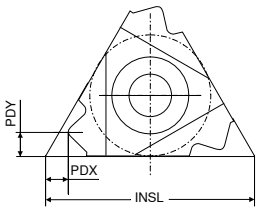
→ v_c Page 42

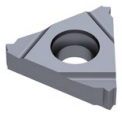
Right hand external thread turning insert

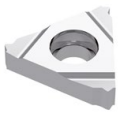
▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 240 ...		ER Y1 Article no. 71 240 ...	
	1/"	mm	mm	mm	EUR		EUR	
16 ER 20	20	16	0,8	0,8	23,45	**240**	15,89	**640**
16 ER 18	18	16	0,8	0,9	23,45	**242**	15,89	**642**
16 ER 16	16	16	0,8	1,0	23,45	**244**	15,89	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

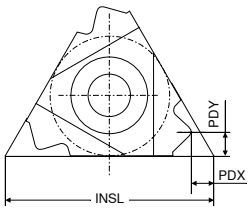
8

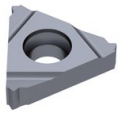
Left hand external thread turning insert

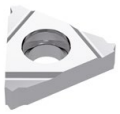
▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 242 ...		EL Y1 Article no. 71 242 ...	
	1/"	mm	mm	mm	EUR		EUR	
16 EL 20	20	16	0,8	0,8	25,83	**240**	17,72	**640**
16 EL 18	18	16	0,8	0,9	25,83	**242**	17,72	**642**
16 EL 16	16	16	0,8	1,0	25,83	**244**	17,72	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

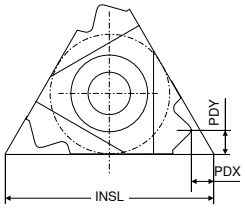
→ v_c Page 42

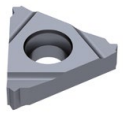
Right hand internal thread turning insert

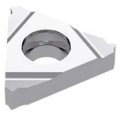
▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 244 ...		IR Y1 Article no. 71 244 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 IR 18	18	11	0,8	0,9	23,45	**238**	15,89	**638**
16 IR 18	18	16	0,8	0,9	23,45	**242**	15,89	**642**
16 IR 16	16	16	0,8	1,0	23,45	**244**	15,89	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

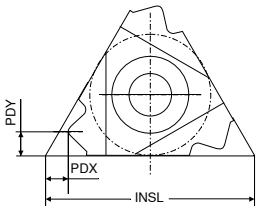
→ v_c Page 42

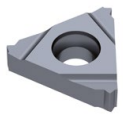
Left hand internal thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 246 ...		IL Y1 Article no. 71 246 ...	
	1/"	mm	mm	mm	EUR		EUR	
11 IL 18	18	11	0,8	0,9	25,83	**238**	17,72	**638**
16 IL 18	18	16	0,8	0,9	25,83	**242**	17,72	**642**
16 IL 16	16	16	0,8	1,0	25,83	**244**	17,72	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

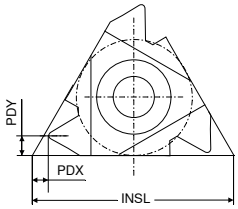
→ v_c Page 42

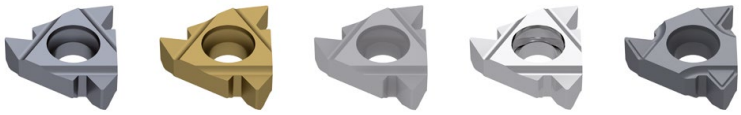
Right hand external thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application



CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TP	INSL	PDX	PDY	ER X3 Article no. 71 206 ... EUR		ER X3 Article no. 71 206 ... EUR		ER X3 Article no. 71 206 ... EUR		ER Y1 Article no. 71 206 ... EUR		ER X3 Article no. 71 206 ... EUR	
	mm	mm	mm	mm										
16 ER A60	0,5 - 1,5	16	0,8	0,9	18,16	**240**	16,22	**140**	17,95	**740**	11,78	**640**	17,95	**940**
16 ER G60	1,75 - 3	16	1,2	1,7	18,70	**242**	17,62	**142**	19,14	**742**	12,11	**642**	19,14	**942**
16 ER AG60	0,5 - 3	16	1,2	1,7	18,70	**244**	15,56	**144**	17,18	**744**	12,11	**644**	17,18	**944**
22 ER N60	3,5 - 5	22	1,7	2,5	29,18	**270**	29,94	**170**			19,56	**670**		
22 EN U60	5,5 - 8	22	0,9	11,0	29,18	**272** 1)					19,56	**672** 1)		
Steel					●		●		○				●	
Stainless steel					●		○		●				●	
Cast iron							●		○		●		●	
Non ferrous metals					○		●		○		●		○	
Heat resistant alloys									○		○		●	

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

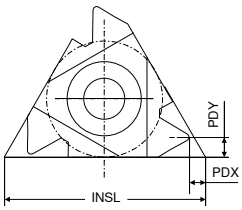
8

Left hand external thread turning insert

▲ Partial profile



CCN20 | CWK20





Designation	TP	INSL	PDX	PDY	EL X3 Article no. 71 208 ... EUR		EL Y1 Article no. 71 208 ... EUR	
	mm	mm	mm	mm				
16 EL A60	0,5 - 1,5	16	0,8	0,9	19,90	**240**	13,08	**640**
16 EL G60	1,75 - 3	16	1,2	1,7	20,98	**242**	14,37	**642**
16 EL AG60	0,5 - 3	16	1,2	1,7	20,98	**244**	14,37	**644**
22 EL N60	3,5 - 5	22	1,7	2,5	34,05	**270**	23,45	**670**
Steel					●			
Stainless steel					●			
Cast iron							●	
Non ferrous metals					○		●	
Heat resistant alloys							○	

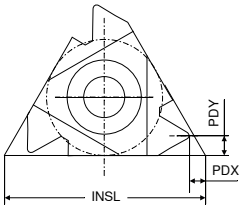
→ v_c Page 42

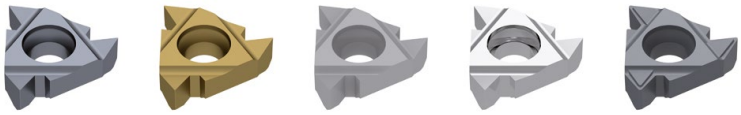
Right hand internal thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application



CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 210 ... EUR		IR X3 Article no. 71 210 ... EUR		IR X3 Article no. 71 210 ... EUR		IR Y1 Article no. 71 210 ... EUR		IR X3 Article no. 71 210 ... EUR	
	mm	mm	mm	mm										
11 IR A60	0,5 - 1,5	11	0,8	0,9	18,16	**210**	16,54	**110**			11,78	**610**		
16 IR A60	0,5 - 1,5	16	0,8	0,9	18,16	**240**	20,00	**140**			11,78	**640**		
16 IR G60	1,75 - 3	16	1,2	1,7	18,70	**242**	17,62	**142**			12,11	**642**		
16 IR AG60	0,5 - 3	16	1,2	1,7	18,70	**244**	16,54	**144**	18,16	**744**	12,11	**644**	18,16	**944**
22 IR N60	3,5 - 5	22	1,7	2,5	29,18	**270**	28,22	**170**			19,56	**670**		
22 IN U60	5,5 - 8	22	0,9	11,0	29,18	**272** [1]					19,56	**672** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

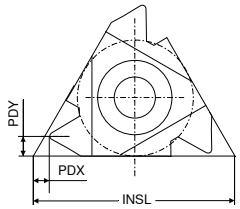
→ v_c Page 42

Left hand internal thread turning insert

▲ Partial profile



CCN20 | CWK20





Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 212 ... EUR		IL Y1 Article no. 71 212 ... EUR	
	mm	mm	mm	mm				
11 IL A60	0,5 - 1,5	11	0,8	0,9	19,90	**210**	13,08	**610**
16 IL A60	0,5 - 1,5	16	0,8	0,9	19,90	**240**	13,08	**640**
16 IL G60	1,75 - 3	16	1,2	1,7	20,98	**242**	14,37	**642**
16 IL AG60	0,5 - 3	16	1,2	1,7	20,98	**244**	14,37	**644**
22 IL N60	3,5 - 5	22	1,7	2,5	34,05	**270**	23,45	**670**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

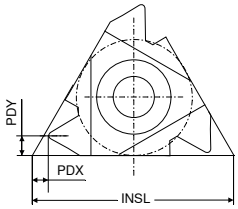
→ v_c Page 42

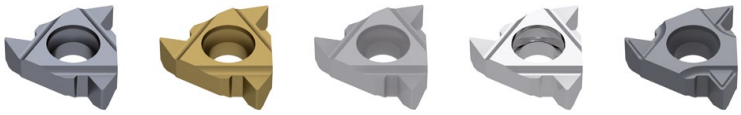
Right hand external thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application



CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 200 ... EUR		ER X3 Article no. 71 200 ... EUR		ER X3 Article no. 71 200 ... EUR		ER Y1 Article no. 71 200 ... EUR		ER X3 Article no. 71 200 ... EUR	
	1/"	mm	mm	mm										
16 ER A55	48 - 16	16	0,8	0,9	19,02	**240**	19,46	**140**	20,75	**740**	13,29	**640**	20,75	**940**
16 ER AG55	48 - 8	16	1,2	1,7	20,32	**244**	17,62	**144**	19,14	**744**	13,29	**644**	19,14	**944**
16 ER G55	14 - 8	16	1,2	1,7	20,32	**242**	19,46	**142**	21,08	**742**	13,29	**642**	21,08	**942**
22 ER N55	7 - 5	22	1,7	2,5	31,68	**270**	31,89	**170**	34,69	**770**	21,40	**670**		
22 EN U55	4,5 - 3,25	22	0,9	11,0	31,68	**272** 1)					21,40	**672** 1)		

Steel	●	●	○			●
Stainless steel	●	○	●			●
Cast iron		●	○	●		●
Non ferrous metals	○	●	○	●		○
Heat resistant alloys			○	○		●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

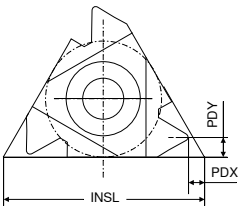
→ v_c Page 42

Left hand external thread turning insert

▲ Partial profile



CCN20 | CWK20





Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 202 ... EUR		EL Y1 Article no. 71 202 ... EUR	
	1/"	mm	mm	mm				
16 EL A55	48 - 16	16	0,8	0,9	21,83	**240**	14,60	**640**
16 EL AG55	48 - 8	16	1,2	1,7	23,68	**244**	16,10	**644**
16 EL G55	14 - 8	16	1,2	1,7	23,68	**242**	16,10	**642**
22 EL N55	7 - 5	22	1,7	2,5	36,97	**270**	25,83	**670**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

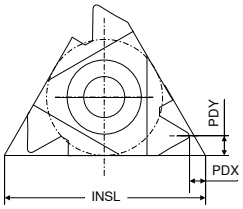
8

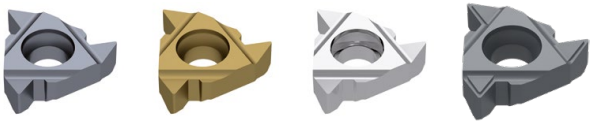
Right hand internal thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application



CCN20 | CWN1525 | CWK20 | CCN7525





Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 204 ... EUR		IR X3 Article no. 71 204 ... EUR		IR Y1 Article no. 71 204 ... EUR		IR X3 Article no. 71 204 ... EUR	
	1/"	mm	mm	mm								
11 IR A55	48 - 16	11	0,8	0,9	19,02	**210**			13,29	**610**		
16 IR A55	48 - 16	16	0,8	0,9	19,02	**240**			13,29	**640**		
16 IR AG55	48 - 8	16	1,2	1,7	20,32	**244**			13,29	**644**		
16 IR G55	14 - 8	16	1,2	1,7	20,32	**242**	19,46	**142**	13,29	**642**	21,08	**942**
22 IR N55	7 - 5	22	1,7	2,5	31,68	**270**			21,40	**670**		
22 IN U55	4,5 - 3,25	22	0,9	11,0	31,68	**272** [1]			21,40	**672** [1]		
Steel					●		●					●
Stainless steel					●		○					●
Cast iron							●		●			●
Non ferrous metals					○		●		●			○
Heat resistant alloys									○			●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

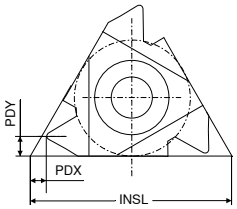
→ v_c Page 42

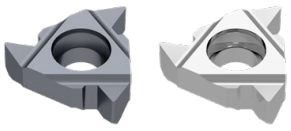
Left hand internal thread turning insert

▲ Partial profile



CCN20 | CWK20



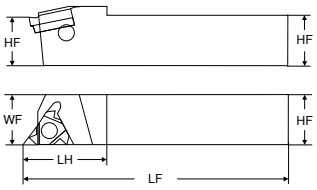


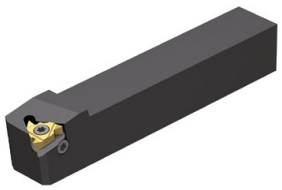
Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 203 ... EUR		IL Y1 Article no. 71 203 ... EUR	
	1/"	mm	mm	mm				
11 IL A55	48 - 16	11	0,8	0,9	21,83	**210**	14,60	**610**
16 IL A55	48 - 16	16	0,8	0,9	21,83	**240**	14,60	**640**
16 IL AG55	48 - 8	16	1,2	1,7	23,68	**244**	16,10	**644**
16 IL G55	14 - 8	16	1,2	1,7	23,68	**242**	16,10	**642**
22 IL N55	7 - 5	22	1,7	2,5	36,97	**270**	25,83	**670**
Steel					●			
Stainless steel					●			
Cast iron							●	
Non ferrous metals					○		●	
Heat resistant alloys							○	

→ v_c Page 42

Standard External Thread Turning Holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

Designation	HF mm	WF mm	LF mm	LH mm	Insert	Left-hand Y2 Article no. 71 281 ... EUR		Right-hand Y2 Article no. 71 280 ... EUR	
SE R/L 08 08 H11	8	11	100	16	11 ..	66,79	**908** [2]	66,79	**908** [2]
SE R/L 10 10 H11	10	12	100	18	11 ..	71,20	**910** [2]	71,20	**910** [2]
SE R/L 12 12 K11	12	12	125	20	11 ..	74,87	**912** [2]	74,87	**912** [2]
SE R/L 12 12 F16	12	16	80	22	16 ..	78,01	**012**	78,01	**012**
SE R/L 16 16 H16	16	16	100	25	16 ..	96,05	**016**	96,05	**016**
SE R/L 20 20 K16	20	20	125	30	16 ..	96,05	**020**	96,05	**020**
SE R/L 25 25 M16	25	25	150	30	16 ..	110,10	**025**	110,10	**025**
SE R/L 32 32 P16	32	32	170	30	16 ..	120,60	**032**	120,60	**032**
SE R/L 25 25 M22	25	25	150	32	22 ..	120,60	**125**	120,60	**125**
SE R 32 32 P22	32	32	170	34	22 ..			125,90	**132**
SE R 32 32 P22U	32	21	170	32	22 .N			125,90	**232** [1]

1) Neutral insert indicated by marking (N)
2) without shim

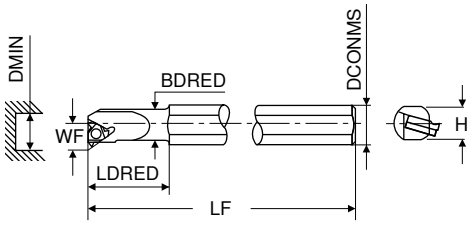
8

Spare parts for Article no.		Y2 Multi tooth shim Article no. 71 950 ... EUR			Y2 Shim Article no. 71 950 ... EUR		Y2 Screw-U Article no. 71 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR		Y2 Clamping screw Article no. 71 950 ... EUR	
71 280 908 / 71 281 908									T08	7,80	**110**	1,09	**230**
71 280 910 / 71 281 910									T08	7,80	**110**	1,09	**230**
71 280 912 / 71 281 912									T08	7,80	**110**	1,09	**230**
71 280 012	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 281 012	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 280 016	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 281 016	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 280 020	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 281 020	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 280 025	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 281 025	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 280 032	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 281 032	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 280 125	ER 22 / IL 22	15,10	**110**	ER 22 / IL 22	13,42	**137**	1,65	**235**	T20	9,95	**114**	1,65	**232**
71 281 125	EL 22 / IR 22	15,10	**115**	EL 22 / IR 22	13,42	**145**	1,65	**235**	T20	9,95	**114**	1,65	**232**
71 280 132				ER 22 / IL 22	13,42	**137**	1,65	**235**	T20	9,95	**114**	1,65	**232**
71 280 232				ER 22U / IL 22U	13,42	**153**	1,65	**235**	T20	9,95	**114**	1,65	**232**

Shims for correction of helix angle see page → **Page 39.**

Standard Internal Thread Turning Holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

Designation	H	LF	LDRED	DCONMS	BDRED	WF	DMIN	Insert	Left-hand Y2 Article no. 71 283 ...		Right-hand Y2 Article no. 71 282 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
SI R 0010 H11	9,0	100	25	10	9,5	7,4	12	11 ..			110,10	**011** [1]
SI R/L 0010 K11	14,0	125	25	16	10,0	7,4	12	11 ..	84,09	**010** [1]	84,09	**010** [1]
SI R 0013 L11	14,0	140	32	16	12,0	8,9	15	11 ..			90,07	**013** [1]
SI R/L 0013 M16	14,0	150	32	16	13,0	10,2	16	16 ..	91,64	**015** [1]	91,64	**015** [1]
SI R/L 0016 P16	18,0	170	40	20	15,0	11,7	19	16 ..	91,64	**016** [1]	91,64	**016** [1]
SI R/L 0020 P16	18,0	170	40	20	19,5	13,7	24	16 ..	108,10	**020**	108,10	**020**
SI R 0025 R16	22,6	200	40	25	24,5	16,2	29	16 ..			131,10	**026**
SI R/L 0032 S16	28,8	250	50	32	31,5	19,7	36	16 ..	141,60	**032**	141,60	**032**
SI R 0040 T16	36,0	300	50	40	39,5	23,7	44	16 ..			209,70	**040**
SI R 0020 P22	18,0	170	40	20	19,5	15,6	24	22 ..			102,10	**120** [1]
SI R/L 0025 R22	22,6	200	40	25	24,5	18,1	29	22 ..	118,50	**126**	131,10	**126**
SI R 0032 S22	28,8	250	50	32	31,5	21,6	38	22 ..			145,70	**132**
SI R 0040 T22	36,0	300	60	40	39,5	25,6	46	22 ..			215,00	**140**
SI R 0032 S22U	28,8	250	60	32	31,5	24,4	38	22 .N			122,70	**133** [2]

1) without shim
2) Neutral insert indicated by marking (N)

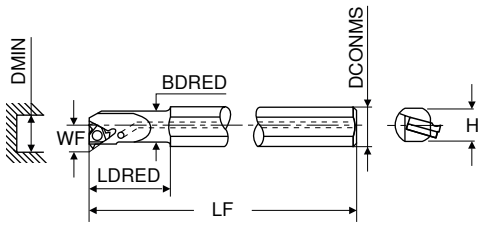
Spare parts		Y2 Multi tooth shim Article no. 71 950 ...			Y2 Shim Article no. 71 950 ...		Y2 Screw-U Article no. 71 950 ...			Y7 Key D Article no. 80 950 ...		Y2 Clamping screw Article no. 71 950 ...	
for Article no.		EUR			EUR		EUR			EUR		EUR	
71 282 011									T08	7,80	**110**	1,09	**230**
71 282 010 / 71 283 010									T08	7,80	**110**	1,09	**230**
71 282 013									T08	7,80	**110**	1,09	**230**
71 282 015 / 71 283 015									T10	9,14	**112**	1,64	**236**
71 282 016 / 71 283 016									T10	9,14	**112**	1,64	**236**
71 282 020	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 283 020	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 282 026	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 282 032	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 283 032	ER 16 / IL 16	12,48	**101**	ER 16 / IL 16	9,26	**121**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 282 040	EL 16 / IR 16	12,48	**108**	EL 16 / IR 16	8,42	**129**	1,09	**234**	T10	9,14	**112**	1,09	**231**
71 282 120							1,09	**234**	T20	9,95	**114**	1,65	**237**
71 282 126	EL 22 / IR 22	15,10	**115**	EL 22 / IR 22	13,42	**145**	1,65	**235**	T20	9,95	**114**	1,65	**232**
71 283 126	ER 22 / IL 22	15,10	**110**	ER 22 / IL 22	13,42	**137**	1,65	**235**	T20	9,95	**114**	1,65	**232**
71 282 132	EL 22 / IR 22	15,10	**115**	EL 22 / IR 22	13,42	**145**	1,65	**235**	T20	9,95	**114**	1,65	**232**
71 282 140	EL 22 / IR 22	15,10	**115**	EL 22 / IR 22	13,42	**145**	1,65	**235**	T20	9,95	**114**	1,65	**232**

Shims for correction of helix angle see page → **Page 39.**

Standard Internal Thread Turning Holder with thro' coolant

▲ Tool Holder with Approach Angle ß = 1,5°







Illustrations show right-hand versions

Designation	H	LF	LDRED	DCONMS	BDRED	WF	DMIN	Insert	Left-hand Y2 Article no. 71 283 ... EUR		Right-hand Y2 Article no. 71 282 ... EUR	
	mm	mm	mm	mm	mm	mm	mm					
SI R 0010 M11CB	9,0	150	25	10	9,5	7,4	12	11 ..			343,90	510 [2]
SI R 0012 P11CB	11,0	170	30	12	11,5	8,4	15	11 ..			365,90	512 [2]
SI R/L 0010 K11B	14,0	125	25	16	10,0	7,4	12	11 ..	100,80	310	100,80	310
SI R/L 0013 M16B	14,0	150	32	16	13,0	10,2	16	16 ..	110,10	315	110,10	315
SI R 0016 P16B	18,0	170	40	20	16,0	11,7	19	16 ..			110,10	316
SI R 0020 P16B	18,0	170	40	20	19,5	13,7	24	16 ..			128,90	320 [1]
SI R/L 0032 S16B	28,8	250	50	32	31,5	19,7	36	16 ..	159,40	332 [1]	159,40	332 [1]

1) with shim seat
2) Carbide version

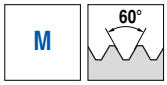
Spare parts for Article no.		Y2 Multi tooth shim Article no. 71 950 ... EUR			Y2 Shim Article no. 71 950 ... EUR		Y2 Screw-U Article no. 71 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR		Y2 Clamping screw Article no. 71 950 ... EUR	
71 282 510									T08	7,80	110	1,09	230
71 282 512									T08	7,80	110	1,09	230
71 282 310 / 71 283 310									T08	7,80	110	1,09	230
71 282 315 / 71 283 315									T10	9,14	112	1,64	236
71 282 316									T10	9,14	112	1,64	236
71 282 320	EL 16 / IR 16	12,48	108	EL 16 / IR 16	8,42	129	1,09	234	T10	9,14	112	1,09	231
71 282 332	EL 16 / IR 16	12,48	108	EL 16 / IR 16	8,42	129	1,09	234	T10	9,14	112	1,09	231
71 283 332	ER 16 / IL 16	12,48	101	ER 16 / IL 16	9,26	121	1,09	234	T10	9,14	112	1,09	231

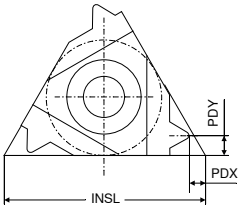
Shims for correction of helix angle see page → **Page 39.**

8

Right hand internal thread turning insert – Mini size 06

▲ Full profile
▲ Thread production from diameter 6mm





CWS80 | CCN1525 | CWN30



Designation	TP	PDX	PDY	INSL	HSS IR Y1 Article no. 71 276 ...		IR X3 Article no. 71 271 ...		IR Y1 Article no. 71 276 ...	
	mm	mm	mm	mm	EUR		EUR		EUR	
06 IR 0,5	0,50	0,9	0,5	6	24,10	**710**	22,37	**110**	24,10	**310**
06 IR 0,75	0,75	0,8	0,5	6	24,10	**712**	22,37	**112**	24,10	**312**
06 IR 1,0	1,00	0,7	0,6	6	24,10	**714**	22,37	**114**	24,10	**314**
06 IR 1,25	1,25	0,6	0,6	6	24,10	**716**	22,37	**116**	24,10	**316**

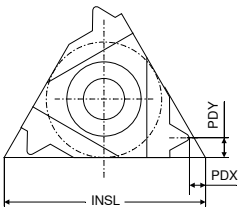
Steel	○	●	●
Stainless steel	●	●	●
Cast iron	○	●	○
Non ferrous metals	○	○	○
Heat resistant alloys			○

→ v_c Page 42

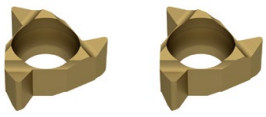
Right hand internal thread turning insert – Mini size 06

▲ Full profile
▲ Thread production from diameter 6mm





CWS80 | CWN30



Designation	TPI	PDX	PDY	INSL	HSS IR Y1 Article no. 71 278 ...		IR Y1 Article no. 71 278 ...	
	1/"	mm	mm	mm	EUR		EUR	
06 IR 26	26	0,6	0,6	6	22,79	**716**	24,10	**316**
06 IR 22	22	0,6	0,6	6	27,24	**720**	24,10	**320**
06 IR 20	20	0,6	0,6	6	22,79	**722**	24,10	**322**
06 IR 19	19	0,6	0,6	6	22,79	**724**	24,10	**324**
06 IR 18	18	0,6	0,6	6	22,79	**726**	24,10	**326**

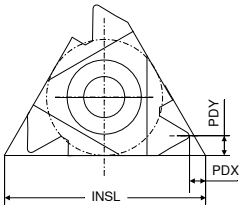
Steel	○	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys		○

→ v_c Page 42

Right hand internal thread turning insert – Mini size 06

▲ Partial profile
▲ Thread production from diameter 6mm





CWS80 | CCN1525 | CWN30





Designation	TP	INSL	PDX	PDY	HSS IR Y1 Article no. 71 272 ... EUR		IR X3 Article no. 71 274 ... EUR		IR Y1 Article no. 71 272 ... EUR	
	mm	mm	mm	mm						
06 IR A60	0,5 - 1,25	6	0,6	0,6	24,10	**710**	22,37	**210**	24,10	**310**
Steel						○		●		●
Stainless steel						●		●		●
Cast iron						○		●		○
Non ferrous metals						○		○		○
Heat resistant alloys										○

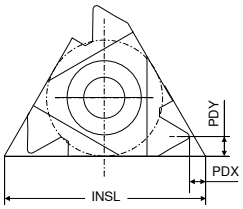
→ v_c Page 42

8

Right hand internal thread turning insert – Mini size 06

▲ Partial profile
▲ Thread production from diameter 6mm





CWS80 | CWN30

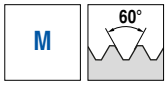


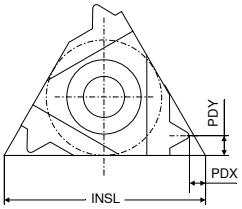

Designation	TPI	INSL	PDX	PDY	HSS IR Y1 Article no. 71 274 ... EUR		IR Y1 Article no. 71 274 ... EUR	
	1/"	mm	mm	mm				
06 IR A55	48 - 20	6	0,5	0,6	24,10	**710**	24,10	**310**
Steel						○		●
Stainless steel						●		●
Cast iron						○		○
Non ferrous metals						○		○
Heat resistant alloys								○

→ v_c Page 42

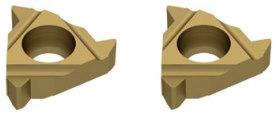
Right hand internal thread turning insert – Mini size 08

▲ Full profile
▲ Thread production from diameter 8mm





CWS80 CWN30



Designation	TP	PDX	PDY	INSL	HSS IR Y1 Article no. 71 277 ...		IR Y1 Article no. 71 277 ...	
	mm	mm	mm	mm	EUR		EUR	
08 IR 0,5	0,50	0,6	0,5	8	24,10	**710**	24,10	**310**
08 IR 0,75	0,75	0,6	0,5	8	24,10	**712**	24,10	**312**
08 IR 1,0	1,00	0,6	0,6	8	24,10	**714**	24,10	**314**
08 IR 1,25	1,25	0,6	0,7	8	24,10	**716**	24,10	**316**
08 IR 1,5	1,50	0,6	0,7	8	24,10	**718**	24,10	**318**
08 IR 1,75	1,75	0,6	0,8	8	23,14	**720**	23,14	**320**
08 IN 2,0	2,00	1,0	4,0	8	24,10	**784** 1)	24,10	**384** 1)

Steel	○	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys		○

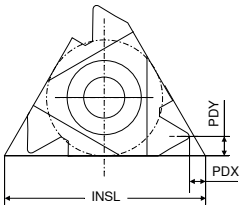
1) Neutral version (N)

→ v_c Page 42

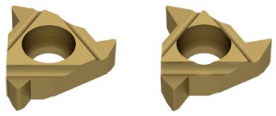
Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8mm





CWS80 CWN30



Designation	TP	PDX	PDY	INSL	HSS IR Y1 Article no. 71 273 ...		IR Y1 Article no. 71 273 ...	
	mm	mm	mm	mm	EUR		EUR	
08 IR A60	0,5 - 1,5	0,6	0,7	8	24,10	**710**	24,10	**310**
08 IN M60	1,75 - 2,0	0,8	4,0	8	24,10	**772** 1)	24,10	**372** 1)

Steel	○	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys		○

1) Neutral version (N)

→ v_c Page 42

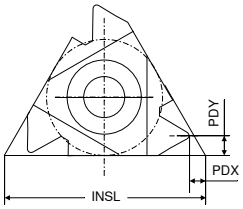
Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8mm



CWS80

CWN30







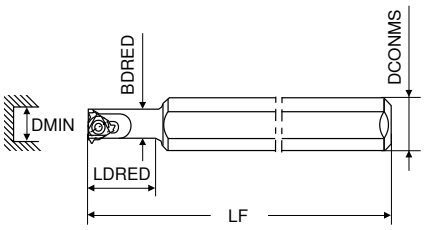
Designation	TPI	INSL	PDX	PDY	HSS IR Y1 Article no. 71 275 ... EUR		IR Y1 Article no. 71 275 ... EUR	
	1/"	mm	mm	mm				
08 IR A55	48 - 16	8	0,6	0,7	24,10	**710**	24,10	**310**
08 IN M55	14 - 11	8	0,9	4,0	24,10	**772** 1)	24,10	**372** 1)
Steel						○		●
Stainless steel						●		●
Cast iron						○		○
Non ferrous metals						○		○
Heat resistant alloys								○

1) Neutral version (N)

→ v_c Page 42

8

Right Hand Internal Thread Holder – Mini size 06



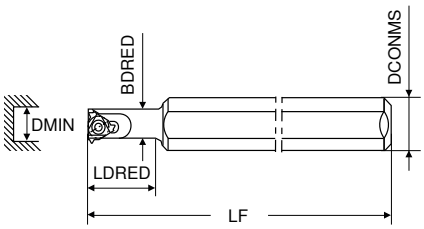


Designation	LF	LDRED	DCONMS	BDRED	DMIN	Insert	Right-hand Y2 Article no. 71 294 ...	
	mm	mm	mm	mm	mm		EUR	
SI R 0005 H06	100	12	12	5,2	6	06 ..	112,20	**005**
SI R 0005 H06 C	100	25	6	5,2	6	06 ..	205,50	**105** [1]

1) Solid Carbide Shank with Thro' Coolant

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		Y2 Clamping screw Article no. 71 950 ... EUR	
71 294 005	T06	8,44	**108**	1,88	**029**
71 294 105	T06	8,44	**108**	1,88	**029**

Right Hand Internal Thread Holder – Mini size 08



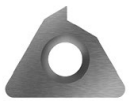
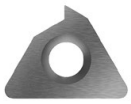
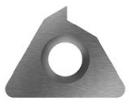
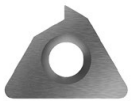
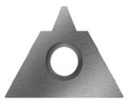
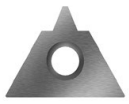


Designation	LF	LDRED	DCONMS	BDRED	DMIN	Insert	Right-hand Y2 Article no. 71 295 ...	
	mm	mm	mm	mm	mm		EUR	
SI R 0007 K08	125	18	16	6,7	7,8	08 ..	112,20	**007**
SI R 0007 K08U	125	21	16	7,5	9,0	08 .N	125,90	**008** [1]
SI R 0007 K08C	125	30	8	6,5	7,8	08 ..	258,00	**107** [2]

1) Neutral insert indicated by marking (N)
2) Solid Carbide Shank with Thro' Coolant

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		Y2 Clamping screw Article no. 71 950 ... EUR	
71 295 007	T06	8,44	**108**	1,88	**033**
71 295 008	T06	8,44	**108**	1,88	**033**
71 295 107	T06	8,44	**108**	1,88	**033**

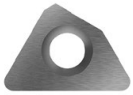
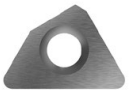
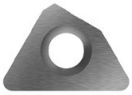
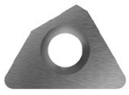
Shims for Standard Threading Inserts

Pitch-angle β	AE 16 ER 16 / IL 16 Y2 Article no. 71 950 ... EUR		AI 16 EL 16 / IR 16 Y2 Article no. 71 950 ... EUR		AE 22 ER 22 / IL 22 Y2 Article no. 71 950 ... EUR		AI 22 EL 22 / IR 22 Y2 Article no. 71 950 ... EUR		AE 22 U ER 22 / IL 22 Y2 Article no. 71 950 ... EUR		AI 22 U EL 22 / IR 22 Y2 Article no. 71 950 ... EUR	
+ 4,5°	10,59	118	10,59	126	16,99	134	16,99	142	16,99	150 [1]	16,99	158 [1]
+ 3,5°	10,59	119	10,59	127	16,99	135	16,99	143	16,99	151 [1]	16,99	159 [1]
+ 2,5°	10,59	120	10,59	128	16,99	136	16,99	144	16,99	152 [1]	16,99	160 [1]
+ 1,5°	9,26	121	8,42	129	13,42	137	13,42	145	13,42	153 [1]	13,42	161 [1]
+ 0,5°	10,59	122	10,59	130	16,99	138	16,99	146	16,99	154 [1]	16,99	162 [1]
0°	10,59	123	10,59	131	16,99	139	16,99	147				
- 0,5°	10,59	124	10,59	132	16,99	140	16,99	148	16,99	156 [1]	16,99	164 [1]
- 1,5°	10,59	125	10,59	133	16,99	141	16,99	149	16,99	157 [1]	16,99	165 [1]

1) Neutral version for tool holder identified by (U).

Shims for Multi-Tooth Threading Inserts

Pitch-angle β	AE 16 M ER 16 / IL 16 Y2 Article no. 71 950 ... EUR		AI 16 M EL 16 / IR 16 Y2 Article no. 71 950 ... EUR		AE 22 M ER 22 / IL 22 Y2 Article no. 71 950 ... EUR		AI 22 M EL 22 / IR 22 Y2 Article no. 71 950 ... EUR	
+ 1,5°	12,48	101	12,48	108	15,10	110	15,10	115

8

Pitch angle

Important Information about Standard Shims

- the pitch angle should be determined through calculation or by using the chart below
- the standard WNT threading holder is supplied with a 1.5° inclined insert seat and a shim without angular correction.
  Hence the WNT Tool holders are delivered with an angle of inclination β of 1.5°.

Without the appropriate correction of the helix angle, the following may occur

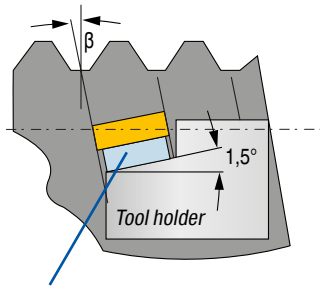
- the profile will be distorted.
- insufficient clearance angle.
- the tool life of the insert is greatly reduced.

Method 1: Calculation

Calculating the helix angle β:

$$\beta = \frac{20 \times TP}{DMIN}$$

20 = constant
β = Helix angle (°)
TP = Pitch (mm)
DMIN = Nominal diameter (mm)



Example calculation

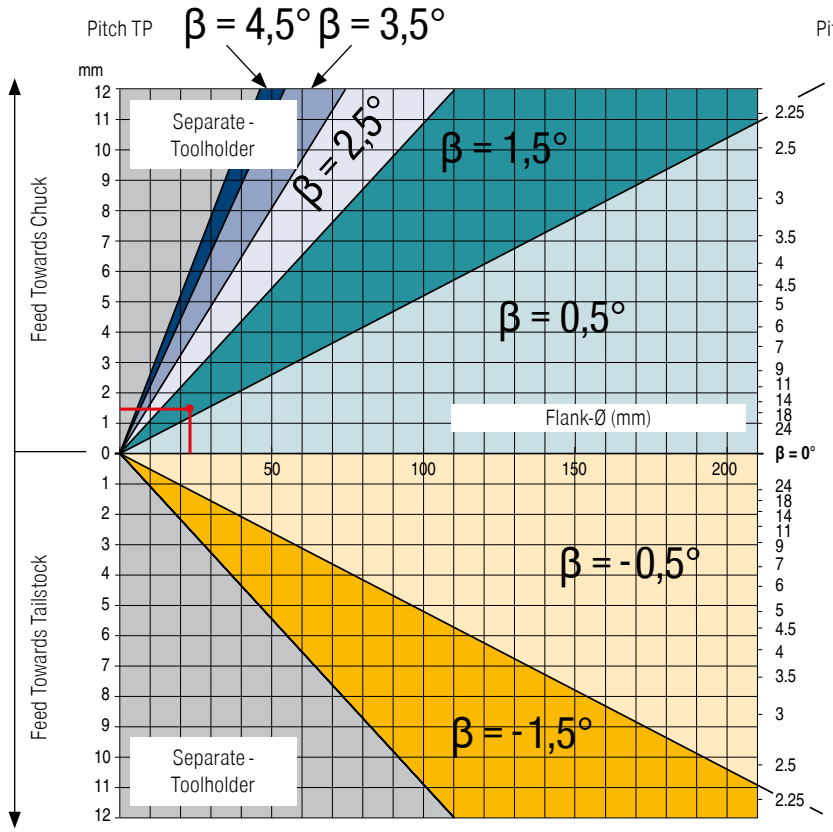
External thread M24 x 1.5
Feed towards chuck
DMIN = Nominal Ø: M24 = 24 mm
TP = Pitch: 1.5 mm

$$\beta = \frac{20 \times 1{,}5 \text{ mm}}{24 \text{ mm}}$$

β = 1,25°

Method 2: Diagram

From the flank Ø in the diagram, a line is drawn vertically upwards until it intersects with the line of the pitch of the thread to be produced. In the color-coded region in which it is now, a horizontal line to the edge of the chart indicates the appropriate factor.



calculated pitch angle β value	Shim
0,0°–0,99°	0,5°
1,0°–1,99°	1,5°
2,0°–2,99°	2,5°
3,0°–3,99°	3,5°
4,0°–4,99°	4,5°
0,0°–(-0,99°)	-0,5°
-1,0°–(-1,99°)	-1,5°

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

8

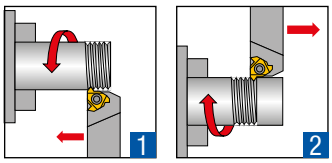
Cutting data appoximate values

	Mini CWN30	Mini CWS80	Mini CCN1525	CWN1525	HCN2525	CCN7525	CCN20	CWK20
Index	v_c in m/min							
1.1	**20–100**	30–50	**80–100**	**120–140**	190–210	**150–170**	**120–180**	
1.2	**20–100**	30–50	**80–100**	**120–140**	190–210	**150–170**	**140–200**	
1.3	**20–100**	30–50	**80–100**	**120–140**	190–210	**150–170**	**110–180**	
1.4	**20–80**	25–40	**60–80**	**70–90**	120–140	**90–110**	**100–155**	
1.5	**20–80**	25–40	**90–110**	**100–120**	160–180	**130–150**	**110–180**	
1.6	**20–80**	25–40	**90–110**	**100–120**	160–180	**130–150**	**100–155**	
1.7	**20–100**	30–50	**50–60**	**50–70**	70–90	**60–80**	**110–180**	
1.8	**20–80**	25–40	**50–60**	**50–70**	70–90	**60–80**	**80–135**	
1.9	**20–100**	25–40	**60–80**	**90–100**	120–140	**100–120**		
1.10	**20–80**	25–40	**50–60**	**50–60**	60–80	**50–70**		
1.11	**20–80**	25–40	**50–60**	**50–60**	60–80	**50–70**		
1.12	**20–80**	25–40	**50–60**	**50–60**	60–80	**50–70**	**80–135**	
1.13		25–40	**50–60**	**50–60**	60–80	**50–70**		
1.14			**50–60**	**50–60**	60–80	**50–70**		
1.15			**50–60**	**50–60**	60–80	**50–70**		
1.16			**50–60**	**50–60**	60–80	**50–70**		
2.1	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–120**	
2.2	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–120**	
2.3	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**60–95**	
2.4	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**60–95**	
2.5	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**40–90**	
2.6	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–100**	
2.7	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–100**	
3.1	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.2	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.3	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.4	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.5	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
3.6	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
3.7	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
3.8	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
4.1	80–180	40–100	550–570	**600–650**	800–900			**100–250**
4.2	80–180	40–100	300–330	**480–520**	800–900			**100–250**
4.3	60–150		300–330	**480–520**	800–900			**100–250**
4.4	60–130		300–330	**480–520**	800–900			**100–250**
4.5	40–120		300–330	**480–520**	800–900			**100–250**
4.6	80–150	40–80	120–150	**200–220**	300–320		80–200	**100–250**
4.7	80–150	40–80	110–130	**180–200**	280–300		80–200	**100–250**
4.8	80–150	40–80	110–130	**160–180**	250–280		80–200	**100–250**
4.9	80–150	40–80	110–130	**160–180**	250–280		80–200	**100–250**
4.10	80–150	40–80	100–120	**150–170**	220–250		80–200	**100–250**
4.11	80–150	40–80	100–120	**180–200**	230–240		80–200	**100–250**
4.12	80–150		100–120	**180–200**	230–240		80–200	**100–250**
4.13			180–200	**250–300**				
4.14			180–200	**250–300**				
4.15			180–200	**250–300**				
4.16			60–80	**80–100**	120–150			**100–250**
4.17			60–80	**80–100**	120–150	100–120		**100–250**
4.18			60–80	**80–100**	120–150			**100–250**
4.19			60–80	**80–100**	120–150			**100–250**
5.1					45–55	**30–40**		
5.2					45–55	**30–40**		20–30
5.3					45–55	**30–40**		20–30
5.4					45–55	**30–40**		20–30
5.5					35–40	**25**		20–30
5.6					35–40	**25–35**		20–30
5.7					35–40	**25–35**		
5.8					35–40	**25–35**		
5.9	20–90				40–50	**35–45**		25–50
5.10	20–90				40–50	**35–45**		20–30
5.11	20–90				40–50	**35–45**		20–30
6.1					50–60	45–55	40–60	
6.2					45–55		40–60	
6.3					40–45			
6.4					35–45			
6.5								

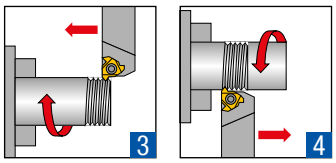
The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

Thread turning methods

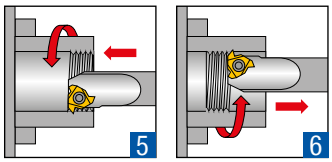
External right-hand thread



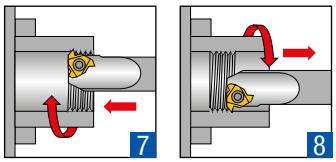
External left-hand thread



Internal right-hand thread



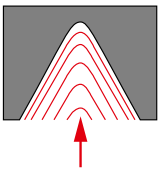
Internal left-hand thread



The machining examples 2, 4, 6 and 8 require negative shims!
These shims can be found on → **Page 39.**

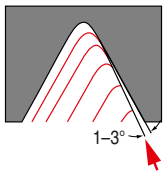
Thread infeed methods

Radial Infeed



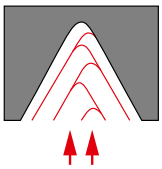
- for pitches less than 1.5 mm
- for short chipping materials
- for machining hardened materials
- simple and quick method

Flank infeed



- for pitches larger than 1.5 mm
- with radial penetration the effective cutting edge length is too large, which may lead to chattering
- with trapezoidal and ACME threads, chip flow on three sides can be problematic

Alternating infeed



- with large pitches
- for long chipping materials
- uniform wear of the cutting edges
- complicated programming process

8

Recommended number of cuts and cutting depths

Standard Threading Inserts

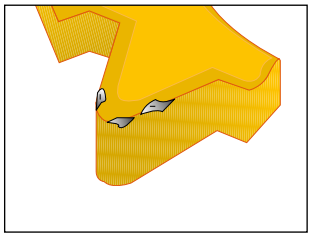
Pitch	**mm**	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	8,00
	TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
Number of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	9-16	10-18	11-18	11-19	12-20	12-20	12-20	15-24
Number of passes	**(CCN7525)**	3-4	3-4	3-5	4-6	5-6	6-8	6-8	8-10								
Number of passes	**Mini Inserts**	6-9	6-11	6-12	8-14	9-15	11-18	11-18									

Multi edge thread turning insert

Standard	Insert	Insert size		Pitch	Edges	Designation	Passes	Cutting depth per pass		
		IC	L mm					1	2	3
ISO external	M	3/8"	16	1,0 mm	3	3 ER 1.0 ISO 3M	2	0,38	0,25	
ISO external	M	3/8"	16	1,5 mm	2	3 ER 1.5 ISO 2M	3	0,42	0,30	0,20

Troubleshooting

Edge chipping



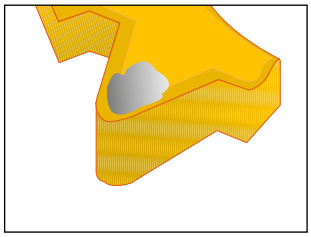
Cause

- Common in stainless materials
- Incorrect grade

Corrective measures

- Minimize tool overhang length
- Check that the insert is clamped
- Minimize vibration
- Use a tougher grade

Cratering



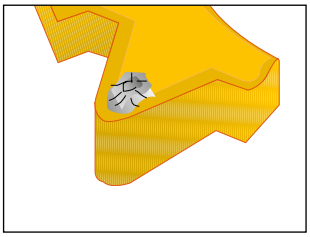
Cause

- Common in stainless materials
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce depth of cut
- Use a harder grade

Built-up edge



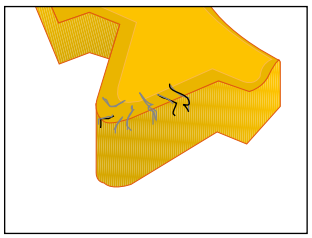
Cause

- Cutting speed too low
- Incorrect grade

Remedy

- Apply coolant
- Increase cutting speed
- Use a tougher grade

Thermal cracking



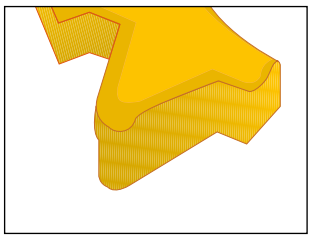
Cause

- Insufficient coolant
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce cutting speed
- Use a tougher grade

Plastic deformation



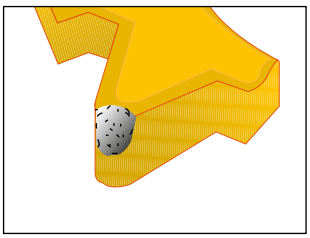
Cause

- Infeed too large
- Insufficient coolant
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce depth of cut
- Reduce cutting speed
- Use a harder grade

Breakage



Cause

- Infeed too large
- Insufficient coolant
- Plastic deformation
- Instability
- Helix angle not appropriate
- Incorrect grade

Remedy

- Reduce depth of cut
- Check machine and tool stability
- Reduce cutting speed
- Check helix angle
- Use a tougher grade

WNT Designation Key

Inserts

16	E	R	AG 60	

Insert size

L	**I.C.**
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"

Insert

E	External
I	Internal

Cutting design

R	Right-hand
L	Left-hand
N	Neutral

Pitch

Full profile

	mm	G/Z
	0,35	72–4

Partial profile

	mm	G/Z
A	0,5–1,5	48–16
AG	0,5–3,0	48–8
M	1,7–2,0	14–11
G	1,75–3,0	14–8
N	3,5–5,0	7–5
U	5,5–8,0	4,5–3,5

Flank angle
55°
60°

Number of teeth

2M	Multi-tooth insert with 2 teeth
3M	Multi-tooth insert with 3 teeth

Example

16 ER AG 60
16 mm right hand – external insert with a pitch of 0.5-3.0 mm

Tool holder

SE	R	1212	F	16	

Tool holder

SE	External
SI	Internal

Cutting design

R	Right-hand
L	Left-hand

Shank cross-section

Example	
External holder square shank	1212 = 12 mm x 12 mm
Internal boring bar	0020 = 20 mm Diameter

Overall length

	mm
F	80
H	100
K	125
L	140
M	150
P	170
R	200
S	250
T	300

Insert size

L	**I.C.**
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"

Properties

B	Diameter
C	With thro' coolant
U	With carbide shank

Example

SE R 1212 F 16
Right hand holder with 12 x 12 mm square shank, overall length of 80 mm, only suitable for an 16 mm threading insert

Grade description

Universal

CCN7525
- Carbide, TiAlN-coated
- ISO | **P25** | **M25** | **K25** | N25 | **S25**
- The universal carbide grade with sintered chip breaker for medium to high cutting speeds

CWN30
- Carbide, TiN-coated
- ISO | **P30** | **M30**
- The coated carbide grade for machining steels and stainless steels at low cutting speeds

CCN1525
- Carbide, TiN-coated
- ISO | **P25** | **M25**
- The coated carbide grade for machining steels and stainless steels at low cutting speeds

Non-ferrous metals

CWK20
- Carbide, uncoated
- ISO | **N10** | **S10** | K10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

Steel

CCN20
- Carbide, TiAlN-coated
- ISO | **P20** | **M20**
- The all-round carbide grade for machining steels at low cutting speeds

CWN1525
- Carbide, TiN-coated
- ISO | **P25** | M25 | **K25** | **N25**
- The universal carbide grade for machining steels and non-ferrous metals at low cutting speeds

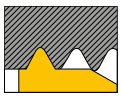
Stainless steel

HCN2525
- Carbide, TiAlN-coated
- ISO | P25 | **M25** | K25 | N25 | S25
- The coated carbide grade for machining stainless steels at high cutting speeds
- Also suitable for exotic materials

CWS80
- HSS, TiN-coated
- ISO | P | **M** | K | N
- The coated HSS grade for stainless machining at low cutting speeds
- Also suitable for exotic materials

Profile Type Description

Full profile



- Thread diameter must not be turned to final thread size
- a minimum infeed of 0.07 mm is necessary
- Insert can only be used only for a specific pitch

Advantages:
- High-quality thread
- No burr formation
- No rework
- In part longer service life

Partial profile



- Core diameter must be premachined to the finished size
- A minimum infeed of 0.07 mm is required

Advantages:
- One threading insert can be used to machine several pitches
- Threading insert can be used for any application
- Reduced stock requirements

Multi-Tooth Thread Turning Insert



- Thread diameter must not be turned to final thread size
- a minimum infeed of 0.07 mm is necessary
- Insert can only be used only for a specific pitch

Advantages:
- Fewer passes required
- Thread production in less time

Attention:
- Check there is sufficient thread run-out

Mini Thread Turning Insert





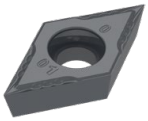
- From a min. core hole diameter of Ø 6 mm or Ø 8 mm

Advantages:
- Special cutting materials for low cutting speeds
- 3 cutting edges for miniature applications



New products for machining technicians

NEW High precision finishing insert in “E” tolerance



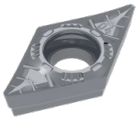
F05 – extremely sharp chip breaker ideal for fine finishing of superalloys and stainless steels.
New universal grade of the X7 line for machining almost all materials.

NEW New CBN grades CTB H15U and CTB H15C

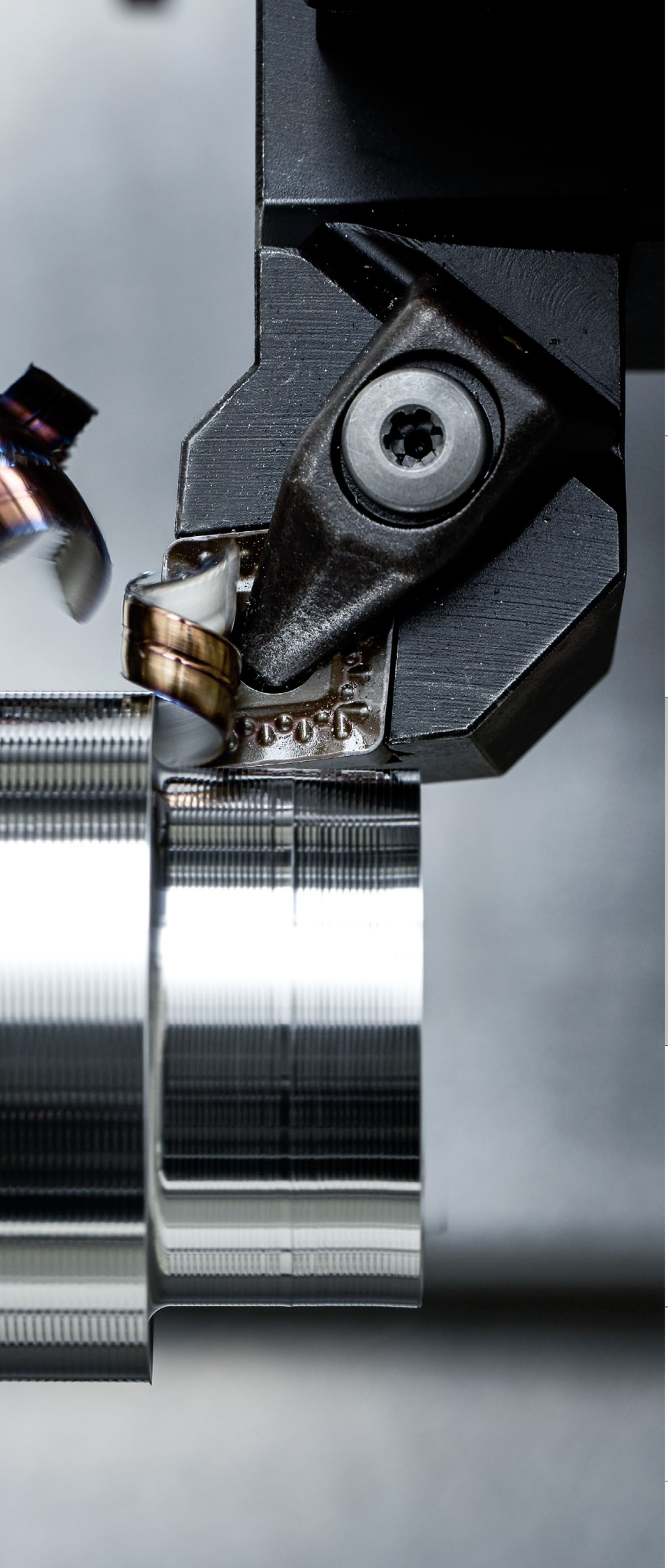


Coated and uncoated CBN grade for smooth cutting from 32 HRC.

NEW Precision sintered insert with -29 chip breaker



Comprehensive aluminum turning insert with -29 chip breaker for medium to rough machining.
Uncoated and with proven AMZ coating.



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools 9
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

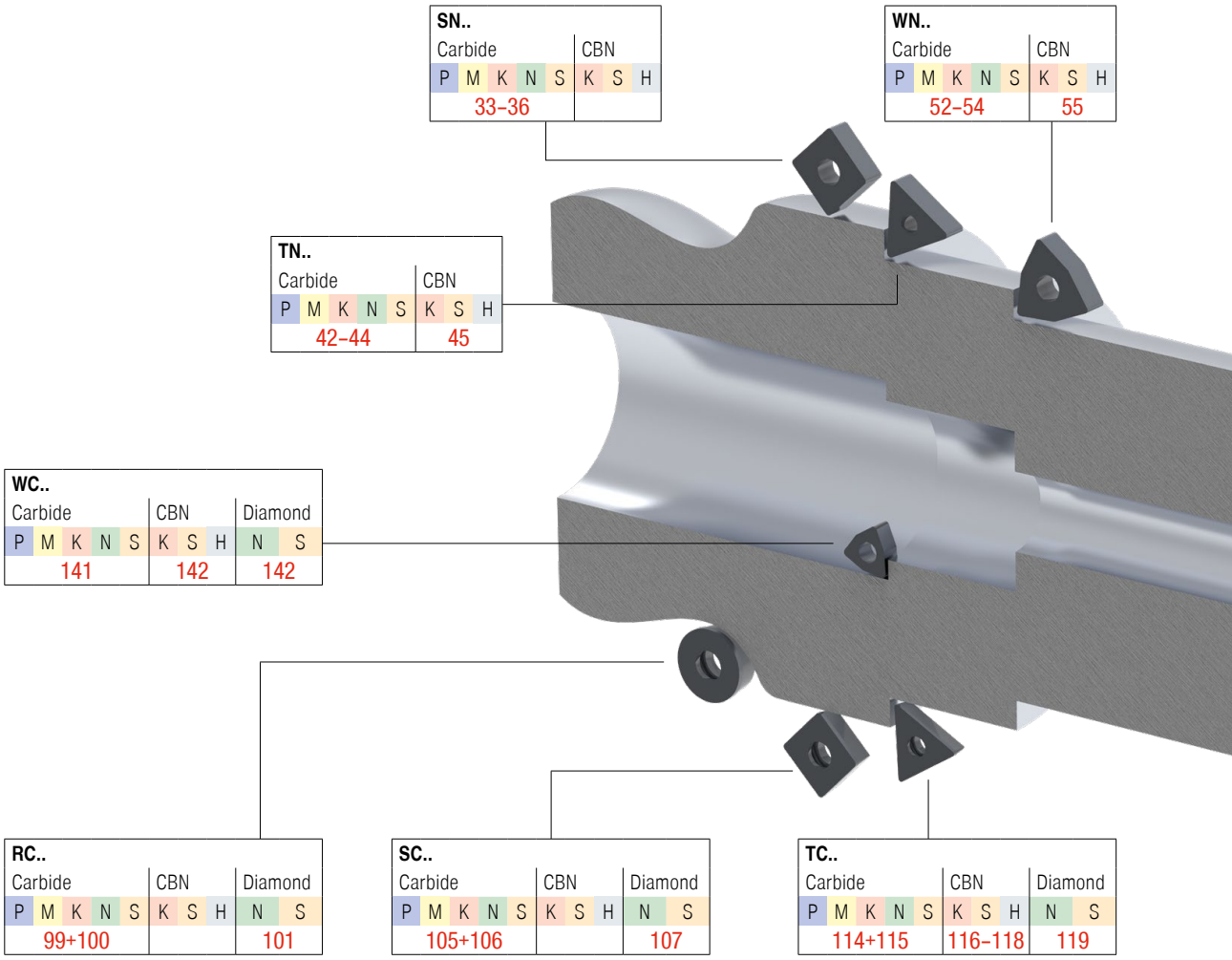
Symbol explanation / Coding of the chip breaker	3
Toolfinder – Application	2+3
Toolfinder – negative inserts	4+5
Toolfinder – positive inserts	6+7
Product programme	8–143
Technical Information	
Cutting Data	144–167
Chip breakers	168–175
Masterfinish – wiper geometry – notes	176+177
ISO designation system	178–183
Wear types in indexable inserts	184+185
Grades Overview	186+187

CERATIZIT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Toolfinder – Application



Coding of the chip breakers

All new chip breakers are coded according to the following key:

-M50

Inserts - Basic Type	Application range	Material		Chip breaker width
	F = Fine	1 = Steel	5 = Heat Resistant alloys	1 = Narrow
0 | N = Negative Inserts	M = Medium	2 = Stainless steel	6 = Hard	
5 | P = Positive Inserts	R = Rough	3 = Cast Iron	7 = Universal	
		4 = Non Ferrous Metals		9 = Wide

-NM15

Detailed information on the chip breakers can be found in the technical appendix → **pages 168–175**

Symbol explanation

CTCP125

HCX1125

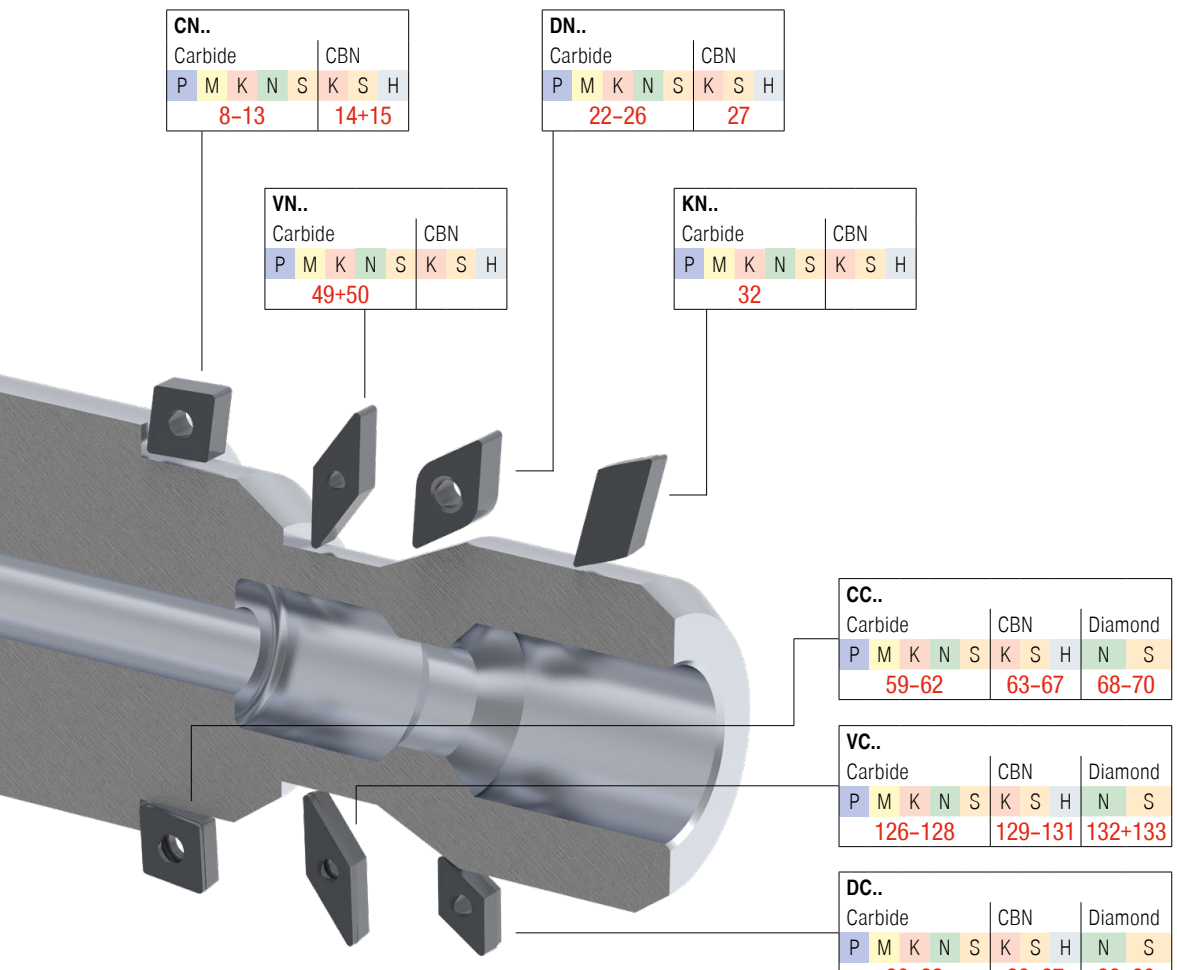
Carbide Grade

F	Fine Machining
M	Medium Machining
R	Rough Machining

	Smooth cut
	Irregular cutting depth
	Interrupted cut

A detailed overview of grades can be found in the technical appendix on → **Page 186**

9



Toolfinder – negative inserts

				Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	Geometry CN..	DN..	KN..	SN..	TN..	VN..	WN..
Main application: **Steel and cast iron**	sharp ▲ stable ▼	Fine	-CF / -CF20 (-CF / -NF12)	●	○	○			8	22					52
			-F40	●	○	○								49	
			-F50 (-NF15)	●	○	○		○	8	22		33	42	49	52
			-TFQ	●	○	○			8+9	22+23					52
		Medium	-42	●	○			○	9						
			-XU	●	○	○			9	23				49	53
			-M40	●	○	○								49	
			-M50 (-NM15)	●	○	●		○	9+10	23+24		33	42	49	53
			-TMQ	●	○	○			10	24					53
			-M70 | -11, -12 (-NM19)	●	○	●		○	10+11	24	32	33+34	42+43		53
		Rough	.NMA			●			11	24		34+35	43		54
			-R28 (-NR14)	●	○	○		○	11	24		35	43		
			-R58 (-NR17)	●	○	○		○	12	24+25		35	43		
			-R88 (-NR19)	●	○	○		○	12			36			
Main application: **Stainless**	sharp ▲ stable ▼	Fine	-F30 (-NF23)	○	●				12	25		36	44	49	54
		Medium	-42	○	●			●	13						
			-M30 (-NM23)	○	●			○	13	25		36	44	49	54
			-M42	○	●			●	13	25		36	44		54
			-M60 (-NM26)	○	●			○	13	25		36	44		54
			-M70 (-NM19)	○	●			●	13	25		36	44		54
Main application: **Heat-resistant**	sharp ▲ stable ▼	Fine	-F32		●	○	○	●	13	25				49	
		Medium	-M34		○			●	13	26		36	44	49+50	54
			-M42	○	●	○	○	●	13	26			44		54
			-M52		○	○	○	●	13	26		36	44		54
			Suitable tool holders						16–19	28+29	32	37–40	46+47	51	56
			Suitable boring bars						20+21	30+31		41	48		57+58

Toolfinder – negative inserts

Main application				Cast iron K	Sintered steels P	Heat-resistant S	Hardened H	Geometry CN..	DN..	KN..	SN..	TN..	VN..	WN..
Cast iron, sintered steels, heat resistant, hardened	Fine	CTBS10U (PBC10) CTBS20C (PBC15-S)		●	●	●		14	27			45		55
		CTBH15U CTBH15C	< 32 HRC				●	14	27					
		CTBH21U (PBC25)	52–65 HRC				●	15	27			45		55
		CTBH20C (PBC25-S)	48–62 HRC											
		CTBH40U (PBC40)	54–65 HRC				●	15	27			45		55
		CTBH40C (PBC40-S)	48–65 HRC											
		Suitable tool holders						16–19	28+29			46+47		56
		Suitable boring bars						20+21	30+31			48		57+58

9

Toolfinder – positive inserts

				Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Geometry CC..	DC..	RC..	SC..	SP..	TC..	TP..	VC..	WC..
Main application: **Steel and cast iron**	sharp ↕ stable	Fine	-CF05 (-PF14)	●	○	○			59	80		105		114		126	
		Fine	-SF (-ZF)	●	○	○		○	59+60	80		105		114		126	
		Medium	-CF55 (-PF15)	●	○	○			60	80		105		114		126	
		Medium	-SMF	●	○	●		○	60	80	99	105		114+115		126+127	
		Medium	-SM (-ZM)	●	○	●		○	60	80+81	99	105		115		127	
		Medium	-SMQ	●	○	○			60+61	81							
			EN, EL, ER	●	○	●		○				105	113		123		
Main application: **Stainless**	sharp ↕ stable	Fine	-SF (-ZF)	○	●			●	61	81						127	141
		Fine	-F43	○	●			●	61	81				115			
		Fine	-M81		●		○		61	81						127	
		Medium	-M25 (-PF23)	○	●				61	81				115		127	
		Medium	-SM (-ZM)	○	●			●	61	81		105		115		127	
		Medium	-M55 (-PF26)	○	●				61	81		106		115		127	
Main application: **Non-ferrous metals**	sharp ↕ stable	Fine	-23P			○	●	○	61	82							
		Medium	-25P	○	○	○	●	○	61	82		106				127	
		Medium	-25Q	○	○	○	●	○	61	82						128	
		Medium	-27 (-AL)	○	○	○	●	○	61+62	82	99+100	106		115		128	
		Medium	-29	○	○	○	●	○	62	82						128	
		Diamond	-CB1				●	○	69+70	89+90	101	107		119		133	
		Diamond	-CB2				●	○	69+70	90	101	107		119		133	
		Diamond	-CB3				●	○	70	90		107		119		133	
		Diamond	Smooth				●	○	68+69	88–90				119		132	142
			Suitable tool holders						71–74	91–93	102–104	108–110		120+121	124	134–137	
			Suitable boring bars						75–79	94–98		111+112		122	125	138–140	143

Toolfinder – positive inserts

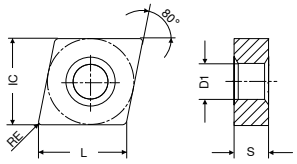
Main application					Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Geometry CC..	DC..	RC..	SC..	SP..	TC..	TP..	VC..	WC..
Main application: **Heat-resistant**	sharp ↕ stable	Fine	-F05 (-F05)		●	●	o	o	●		82						128	
			-F23 (-F23)			●	o	o	●	62	82						128	

Main application					Cast iron K	Sintered steels P	Heat-resistant S	Hardened H	CC..	DC..	RC..	SC..	SP..	TC..	TP..	VC..	WC..
Main application: **Cast iron, sintered steels, heat resistant, hardened**		Fine	CTBS10U (PBC10) CTBS20C (PBC15-S)		●	●	●		63+64	83+84				116		129+130	142
			CTBH15U CTBH15C	< 32 HRC				●	65	85				116–118		129+130	142
			CTBH21U (PBC25)	52–65 HRC				●	66	85–87				117+118		130+131	142
			CTBH20C (PBC25-S)	48–62 HRC													
			CTBH40U (PBC40)	54–65 HRC				●	67	85–87				117+118		130+131	142
			CTBH40C (PBC40-S)	48–65 HRC													
			Suitable tool holders						71–74	91–93	102–104	108–110		120+121	124	134–137	
			Suitable boring bars						75–79	94–98		111+112		122	125	138–140	143

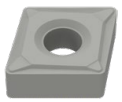
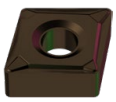
9

CNMG / CNMA / CNMM / CNGP

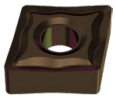
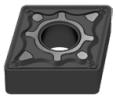
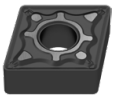
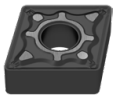
Designation	L	S	D1	IC
	mm	mm	mm	mm
CNMG 0903..	9,7	3,18	3,81	9,52
CN.. 1204..	12,9	4,76	5,16	12,70
CNM. 1606..	16,1	6,35	6,35	15,87
CNM. 1906..	19,3	6,35	7,94	19,05
CNMM 2509..	25,8	9,52	9,12	25,40



CNMG

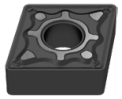
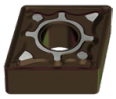
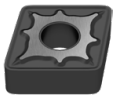
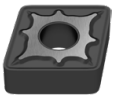
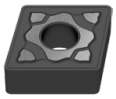
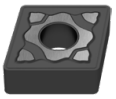
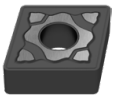
		-CF TCM10	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-TFQ CTEP110	-TFQ CTCP115
		-CF CWC10	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-TFQ DCC1110	-TFQ HCX1115
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	F
		CERMET CNMG 1A/78	CERMET CNMG 1A/78	CNMG 1A/08	CNMG 1A/08	CNMG 1A/08	CERMET CNMG 1A/78	CNMG 1A/08
ISO	RE	Article no. 70 101 ...	Article no. 76 101 ...	Article no. 76 132 ...	Article no. 76 132 ...	Article no. 76 132 ...	Article no. 76 110 ...	Article no. 76 110 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
090304EN	0,4			7,42 316	7,45 516	7,42 716		
090308EN	0,8			7,42 318	7,45 518	7,42 718		
120404EN	0,4	9,68 904	10,11 028	11,42 328	11,42 528	11,42 728	11,75 028	13,09 328
120408EN	0,8	9,68 908	10,11 030	11,42 330	11,42 530	11,42 730	11,75 030	13,09 330
120412EN	1,2			11,42 332	11,42 532	11,42 732	11,75 032	13,09 320
Steel		●	●	●	●	●	●	●
Stainless steel			○	○	○	○	○	○
Cast iron		○	○	○	○		○	○
Non ferrous metals								
Heat resistant alloys						○		

CNMG

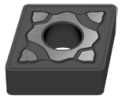
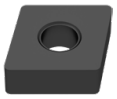
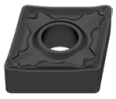
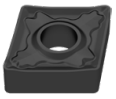
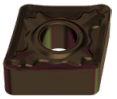
		-TFQ CTCP125	-42 CTCP135	-XU CTCP115	-XU CTCP125	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115
		-TFQ HCX1125	-42 HCR1135	-XU HCX1115	-XU HCX1125	-NM15 DCX3110	-NM15 HCF3120	-NM15 HCX1115
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	M	M	M	M	M	M
		CNMG	CNMG	CNMG	CNMG	CNMG	CNMG	CNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 110 ...	Article no. 76 103 ...	Article no. 76 290 ...	Article no. 76 290 ...	Article no. 70 132 ...	Article no. 70 132 ...	Article no. 76 135 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
120404EN	0,4	13,09 528		11,46 328	11,46 528	11,42 028		11,42 328
120408EN	0,8	13,09 530	11,42 730	11,46 330	11,46 530	11,42 030	11,42 530	11,42 330
120412EN	1,2	13,09 532		11,46 332	11,46 532	11,42 032	11,42 532	11,42 320
120416EN	1,6							11,42 334
160608EN	0,8							18,46 342
160612EN	1,2							18,46 344
160616EN	1,6							18,46 346
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○	○	○		○
Cast iron		○		○	○	●	●	○
Non ferrous metals								
Heat resistant alloys			○					

9

CNMG

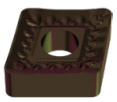
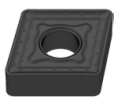
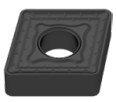
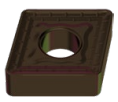
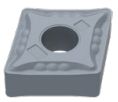
		-M50 CTCP125		-M50 CTCP135		-TMQ CTCP115		-TMQ CTCP125		-M70 CTCK110		-M70 CTCK120		-M70 CTCP115	
		-NM15 HCX1125		-NM15 HCR1135		-TMQ HCX1115		-TMQ HCX1125		-NM19 DCX3110		-NM19 HCF3120		-NM19 HCX1115	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		M		M		M		M		M		M		M	
		CNMG		CNMG		CNMG		CNMG		CNMG		CNMG		CNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 135 ...		Article no. 76 135 ...		Article no. 76 196 ...		Article no. 76 196 ...		Article no. 70 119 ...		Article no. 70 119 ...		Article no. 76 119 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
120404EN	0,4	11,42	528	11,42	728										
120408EN	0,8	11,42	530	11,42	730			13,09	530	11,42	030	11,42	530	11,42	330
120412EN	1,2	11,42	532	11,42	732	13,09	320	13,09	532	11,42	032	11,42	532	11,42	320
120416EN	1,6	11,42	534	11,42	734					11,42	034	11,42	534	11,42	334
160608EN	0,8	18,46	542	18,46	742					18,46	042	18,46	542	18,46	342
160612EN	1,2	18,46	544	18,46	744					18,46	044	18,46	544	18,46	344
160616EN	1,6	18,46	546	18,46	746					18,46	046	18,46	546	18,46	346
160624EN	2,4													18,46	348
190608EN	0,8													26,07	354
190612EN	1,2									26,07	056	26,07	556	26,07	356
190616EN	1,6									26,07	058	26,07	558	26,07	358
190624EN	2,4													26,07	360
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○		○		○		○				○	
Cast iron		○				○		○		●		●		○	
Non ferrous metals															
Heat resistant alloys				○											

CNMG / CNMA / CNMM

		-M70 CTCP125	-M70 CTCP135	CTCK110	CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135
		-NM19 HCX1125	-NM19 HCR1135	DCX3110	HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	R	R	R	R	R
		CNMG	CNMG	CNMA	CNMA	CNMM	CNMM	CNMM
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 119 ...	Article no. 76 119 ...	Article no. 70 100 ...	Article no. 70 100 ...	Article no. 76 114 ...	Article no. 76 114 ...	Article no. 76 114 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
120404EN	0,4			11,42 028	11,42 528			
120408EN	0,8	11,42 530	11,42 730	11,42 030	11,42 530	11,63 330	11,63 530	
120412EN	1,2	11,42 532	11,42 732	11,42 032	11,42 532	11,63 332	11,63 532	11,63 732
120416EN	1,6	11,42 534	11,42 734	11,42 034	11,42 534	11,63 334	11,63 534	11,63 734
160608EN	0,8	18,46 542	18,46 742	18,46 042	18,46 542			
160612EN	1,2	18,46 544	18,46 744	18,46 044	18,46 544	18,46 344	18,46 544	18,46 744
160616EN	1,6	18,46 546	18,46 746	18,46 046	18,46 546	18,46 346	18,46 546	18,46 746
160624EN	2,4	18,46 548	18,46 748					
190608EN	0,8	26,07 554	26,07 754					
190612EN	1,2	26,07 556	26,07 756	26,07 056	26,07 556	26,07 356	26,07 556	26,07 756
190616EN	1,6	26,07 558	26,07 758	26,07 058	26,10 558	26,07 358	26,07 558	26,07 758
190624EN	2,4	26,07 560	26,07 760			26,07 360	26,07 560	26,07 760
250924EN	2,4					60,18 38400	60,18 58400	60,18 78400
Steel		●	●			●	●	●
Stainless steel		○	○			○	○	○
Cast iron		○		●	●	○	○	
Non ferrous metals								
Heat resistant alloys			○					○

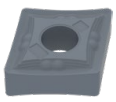
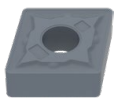
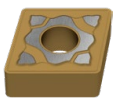
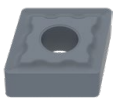
9

CNMM / CNMG

ISO	RE mm	-R58 CTCP115 -NR17 HCX1115 DRAGONSKIN		-R58 CTCP125 -NR17 HCX1125 DRAGONSKIN		-R58 CTCP135 -NR17 HCR1135 DRAGONSKIN		-R88 CTCP115 -NR19 HCX1115 DRAGONSKIN		-R88 CTCP125 -NR19 HCX1125 DRAGONSKIN		-R88 CTCP135 -NR19 HCR1135 DRAGONSKIN		-F30 CTPM125 -NF23 HCN2125 DRAGONSKIN	
															
		R		R		R		R		R		R		F	
		CNMM 1A/08		CNMM 1A/08		CNMM 1A/08		CNMM 1A/08		CNMM 1A/08		CNMM 1A/08		CNMG 1A/08	
		Article no. 76 115 ...		Article no. 76 115 ...		Article no. 76 115 ...		Article no. 76 133 ...		Article no. 76 133 ...		Article no. 76 133 ...		Article no. 75 010 ...	
		EUR		EUR		EUR		EUR		EUR		EUR		EUR	
120404EN	0,4													11,42	280
120408EN	0,8	11,63	330	11,63	530	11,63	730							11,42	230
120412EN	1,2	11,63	332	11,63	532	11,63	732								
120416EN	1,6	11,63	334	11,63	534	11,63	734								
160612EN	1,2	18,46	344	18,46	544	18,46	744								
160616EN	1,6	18,46	346	18,46	546	18,46	746								
160624EN	2,4	18,46	348	18,46	548	18,46	748								
160624SN	2,4							18,46	348	18,46	548	18,46	748		
190612EN	1,2	26,07	356	26,07	556	26,07	756								
190616EN	1,6	26,07	358	26,07	558	26,07	758								
190616SN	1,6							26,07	358	26,07	558	26,07	758		
190624EN	2,4	26,07	360	26,07	524	26,07	760								
190624SN	2,4							26,07	360	26,07	560	26,07	760		
250924EN	2,4	60,18	384	60,18	584	60,18	784								
250924SN	2,4							60,18	384	60,18	584	60,18	784		

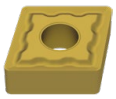
Steel	●	●	●	●	●	●	○
Stainless steel	○	○	○	○	○	○	●
Cast iron	○	○		○	○		
Non ferrous metals							
Heat resistant alloys			○			○	

CNMG / CNGP

		-42 CTC2135	-M30 CTPM125	-M42 CTC2135	-M60 CTPM125	-M70 CTC2135	-F32 CTP2120	-M34 CTP5110
		-42 CWN2135	-NM23 HCN2125	-M42 CWN2135	-NM26 HCN2125	-NM19 CWN2135	-F32 CCN2120	-M34 HCN5110
			DRAGONSKIN		DRAGONSKIN			DRAGONSKIN
								
		M	M	M	M	M	F	M
		CNMG	CNMG	CNMG	CNMG	CNMG	CNGP	CNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE mm	Article no. 70 103 ... EUR	Article no. 75 011 ... EUR	Article no. 70 130 ... EUR	Article no. 75 012 ... EUR	Article no. 70 119 ... EUR	Article no. 70 102 ... EUR	Article no. 75 003 ... EUR
120402FN	0,2						15,33 602	
120404EN	0,4			10,23 404				10,75 428
120404FN	0,4						15,33 604	
120408EN	0,8	10,23 462	11,42 230	10,23 408	11,42 230	10,23 430		10,75 430
120408FN	0,8						15,33 608	
120412EN	1,2		11,42 232	10,23 410	11,42 232	10,23 432		10,75 432
120416EN	1,6		11,42 234		11,42 234			
160612EN	1,2					18,46 442		
190612EN	1,2					26,07 456		
190616EN	1,6					26,07 458		
Steel		○	○	○	○	○		
Stainless steel		●	●	●	●	●	●	○
Cast iron							○	
Non ferrous metals							○	
Heat resistant alloys		●	○	●	○	●	●	●

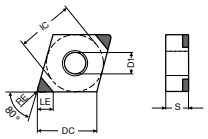
9

CNMG

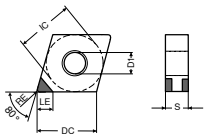
		-M34 CTP5115	-M42 CTP2120	-M52 CTP2120
		-M34 HCN5115	-M42 CCN2120	-M52 CCN2120
		DRAGONSKIN		
				
		M	M	M
		CNMG	CNMG	CNMG
		1A/08	1A/08	1A/08
ISO	RE mm	Article no. 75 003 ... EUR	Article no. 70 130 ... EUR	Article no. 70 117 ... EUR
120404EN	0,4	10,75 528	10,23 604	10,23 604
120408EN	0,8	10,75 530	10,23 608	10,23 608
120412EN	1,2	10,75 532		
120416EN	1,6	10,75 534		
Steel				
Stainless steel		○	○	○
Cast iron			○	○
Non ferrous metals			○	○
Heat resistant alloys		●	●	●

CNGA

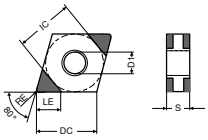
Designation	L	S	D1	IC
	mm	mm	mm	mm
CNGA 1204..	12,9	4,76	5,13	12,7



-B

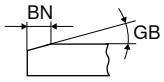


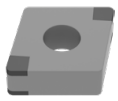
-K (-2SC)



-L (-4SC)

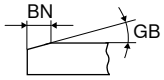
CNGA

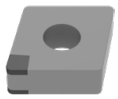


	-K CTBS20C	-L CTBS20C	-B CTBH15C	-B CTBH15C
	-2SC PBC15-S	-4SC PBC15-S		
				
				
	F	F	F	F
	CBN CNGA	CBN CNGA	CBN CNGA	CBN CNGA
	Y0	Y0	NEW Y0	NEW Y0
ISO	Article no. 71 400 ...	Article no. 71 401 ...	Article no. 71 003 ...	Article no. 71 005 ...
	EUR	EUR	EUR	EUR

ISO	RE mm	GB °	BN mm	LE mm	71 400 ... EUR		71 401 ... EUR		71 003 ... EUR		71 005 ... EUR	
120404SN	0,4	10	0,09	2,8			57,23	122				
120404SN	0,4	15	0,09	2,8			57,23	132				
120404SN	0,4	15	0,11	2,8	34,98	142						
120404SN	0,4	15	0,11	3,0					66,91	32814		
120404SN	0,4	20	0,09	2,8			57,23	152				
120404SN	0,4	20	0,14	2,8	34,98	162						
120404SN	0,4	25	0,13	3,0					66,91	32829		
120404SN	0,4	30	0,18	2,8	34,98	182	57,23	182				
120404RN	0,4			3,0					66,91	22800		
120408SN	0,8	10	0,09	2,5			57,23	124				
120408SN	0,8	15	0,09	2,5			57,23	134				
120408SN	0,8	15	0,11	2,5	34,98	144						
120408SN	0,8	15	0,11	2,7					66,91	33014		
120408SN	0,8	20	0,09	2,5			57,23	154				
120408SN	0,8	20	0,14	2,5	34,98	164						
120408SN	0,8	25	0,13	2,7					66,91	33029		
120408SN	0,8	30	0,18	2,5	34,98	184	57,23	184				
120408RN	0,8			2,7					66,91	23000		
120412SN	1,2	10	0,09	2,2			57,23	126				
120412SN	1,2	15	0,09	2,2			57,23	136				
120412SN	1,2	15	0,11	2,2	34,98	146						
120412SN	1,2	15	0,11	2,4							66,91	33214
120412SN	1,2	20	0,09	2,2			57,23	156				
120412SN	1,2	20	0,14	2,2	34,98	166						
120412SN	1,2	25	0,13	2,4							66,91	33229
120412SN	1,2	30	0,18	2,2	34,98	186	57,23	186				
120412RN	1,2			2,4							66,91	23200
Cast iron					●		●					
Sintered steels					●		●					
Heat resistant alloys					●		●					
hardened < 45 HRC									●		●	
hardened 46–55 HRC									●		●	
hardened 56–60 HRC									●		●	
hardened 61–65 HRC												

CNGA



ISO	RE	GB	BN	LE	-K CTBH20C -2SC PBC25-S		-L CTBH20C -4SC PBC25-S		-K CTBH40C -2SC PBC40-S		-L CTBH40C -4SC PBC40-S	
												
					F		F		F		F	
					CBN CNGA Y0		CBN CNGA Y0		CBN CNGA Y0		CBN CNGA Y0	
	mm	°	mm	mm	Article no. 71 400 ... EUR		Article no. 71 401 ... EUR		Article no. 71 400 ... EUR		Article no. 71 401 ... EUR	
120404TN	0,4	15	0,09	2,8	34,98	222						
120404SN	0,4	20	0,09	2,8							57,23	332
120404SN	0,4	20	0,11	2,8			57,23	242				
120404TN	0,4	25	0,11	2,8	34,98	252						
120404SN	0,4	25	0,11	2,8					34,98	352	57,23	352
120404SN	0,4	25	0,13	2,8			57,23	262				
120404FN	0,4			2,8	34,98	212						
120404SN	0,4	30	0,14	2,8							57,23	372
120404SN	0,4	35	0,14	2,8					34,98	382		
120408TN	0,8	15	0,09	2,5	34,98	224						
120408TN	0,8	20	0,09	2,5	34,98	234						
120408SN	0,8	20	0,09	2,5							57,23	334
120408SN	0,8	20	0,11	2,5			57,23	244				
120408TN	0,8	25	0,11	2,5	34,98	254						
120408SN	0,8	25	0,11	2,5					34,98	354	57,23	354
120408SN	0,8	25	0,13	2,5			57,23	264			57,23	364
120408SN	0,8	30	0,14	2,5			57,23	274			57,23	374
120408SN	0,8	35	0,14	2,5					34,98	384		
120408EN	0,8			2,5					34,98	314		
120412TN	1,2	15	0,09	2,2	34,98	226						
120412SN	1,2	20	0,09	2,2							57,23	336
120412SN	1,2	20	0,11	2,2			57,23	246				
120412TN	1,2	25	0,11	2,2	34,98	256						
120412SN	1,2	25	0,11	2,2					34,98	356	57,23	356
120412SN	1,2	25	0,13	2,2			57,23	266			57,23	366
120412SN	1,2	30	0,14	2,2							57,23	376
120412SN	1,2	35	0,14	2,2					34,98	386		
120412FN	1,2			2,2	34,98	216						

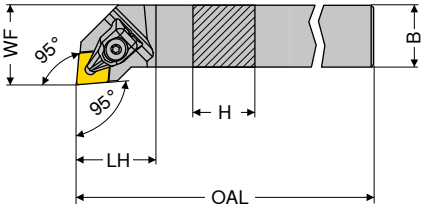
Cast iron				
Sintered steels				
Heat resistant alloys				
hardened < 45 HRC				
hardened 46–55 HRC	●	●	●	●
hardened 56–60 HRC	●	●	●	●
hardened 61–65 HRC			●	●

For fast and efficient determination of the most appropriate edge preparation CNGA test inserts are available. → **Page 161**

9

MaxiLock-D – DCLN 95° – Toolholder with top clamping







Illustrations show right-hand versions

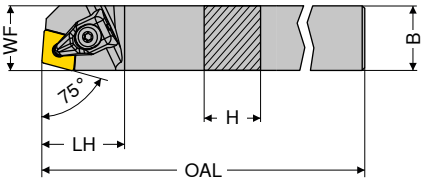
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 509 ...		Right-hand 2A/24 Article no. 70 508 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DCLN R/L 1616 H09	16	16	100	23	20	2	CN.. 0903	76,33	**516**	76,33	**516**
DCLN R/L 2020 K09	20	20	125	24	25	2	CN.. 0903	85,04	**520**	85,04	**520**
DCLN R/L 2020 K12	20	20	125	32	25	4	CN.. 1204	85,04	**620**	85,04	**620**
DCLN R/L 2525 M12	25	25	150	32	32	4	CN.. 1204	87,97	**625**	87,97	**625**
DCLN R/L 3225 P12	32	25	170	32	32	4	CN.. 1204	94,37	**632**	94,37	**632**
DCLN R/L 2525 M16	25	25	150	38	32	6,5	CN.. 1606	87,97	**725**	87,97	**725**
DCLN R/L 3232 P16	32	32	170	36	40	6,5	CN.. 1606	118,80	**732**	118,80	**732**
DCLN R/L 3232 P19	32	32	170	42	40	6,5	CN.. 1906	118,80	**832**	118,80	**832**
DCLN R/L 4040 S19	40	40	250	42	50	6,5	CN.. 1906	147,70	**940**	147,70	**940**
DCLN R/L 4040 S25	40	40	250	60	50	6,5	CN.. 2509	147,70	**440**	147,70	**440**

Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR	
70 508 516 / 70 509 516	24,10	**823**	T09 - IP	11,24 **126**	M3x7 - IP	3,14 **819**	7,12	**848**
70 508 520 / 70 509 520	24,10	**823**	T09 - IP	11,24 **126**	M3x7 - IP	3,14 **819**	7,12	**848**
70 508 620 / 70 509 620	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**
70 508 625 / 70 509 625	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**
70 508 632 / 70 509 632	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**
70 508 725 / 70 509 725	26,69	**825**	T20 - IP	12,54 **129**	M5x14 - IP	4,23 **821**	12,05	**814**
70 508 732 / 70 509 732	26,69	**825**	T20 - IP	12,54 **129**	M5x14 - IP	4,23 **821**	12,05	**814**
70 508 832 / 70 509 832	29,19	**826**	T20 - IP	12,54 **129**	M5x14 - IP	4,23 **821**	12,91	**816**
70 508 940 / 70 509 940	29,19	**826**	T20 - IP	12,54 **129**	M5x14 - IP	4,23 **821**	12,91	**816**
70 508 440 / 70 509 440	45,47	**827**	T25 - IP	14,50 **130**	M6x16 - IP	8,04 **822**	24,75	**625**

MaxiLock-D – DCBN 75° – Toolholder with top clamping







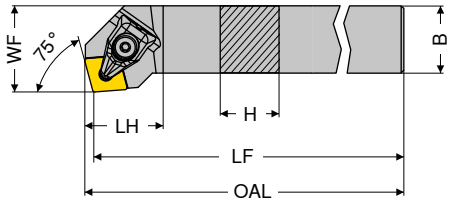
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 501 ... EUR		Right-hand 2A/24 Article no. 70 500 ... EUR	
	mm	mm	mm	mm	mm	Nm					
DCBN R/L 2525 M12	25	25	150	32	22	4	CN.. 1204	85,04	**825**	85,04	**825**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...	
for Article no.	**EUR**		**EUR**		**EUR**		**EUR**	
70 501 825 / 70 500 825	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**

MaxiLock-D – DCKN 75° – Toolholder with top clamping







Illustrations show right-hand versions

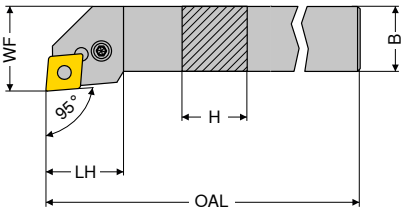
ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 505 ... EUR		Right-hand 2A/24 Article no. 70 504 ... EUR	
	mm	mm	mm	mm	mm	mm	Nm					
DCKN R/L 2525 M12	25	25	152,9	150	28,9	32	4	CN.. 1204	85,04	**825**	85,04	**825**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...	
for Article no.	**EUR**		**EUR**		**EUR**		**EUR**	
70 505 825 / 70 504 825	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**

9

MaxiLock-N – PCLN 95° – Toolholder with lever clamping







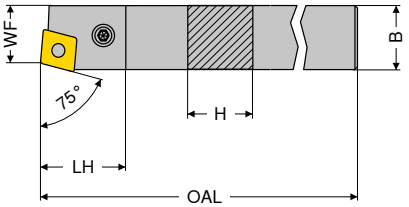
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 509 ...		Right-hand 2A/24 Article no. 70 508 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PCLN R/L 1616 H12	16	16	100	26,2	20	4	CN.. 1204	76,33	016	76,33	016
PCLN R/L 2020 K12	20	20	125	27,5	25	4	CN.. 1204	85,04	020	85,04	020
PCLN R/L 2525 M12	25	25	150	28,1	32	4	CN.. 1204	87,97	025	87,97	025
PCLN R/L 3225 P12	32	25	170	28,1	32	4	CN.. 1204	94,37	032	94,37	032
PCLN R/L 2525 M16	25	25	150	32,7	32	4	CN.. 1606	87,97	125	87,97	125
PCLN R/L 3232 P16	32	32	170	32,6	40	4	CN.. 1606	118,80	132	118,80	132
PCLN R/L 3232 P19	32	32	170	38,0	40	8	CN.. 1906	118,80	232	118,80	232
PCLN R/L 4040 S25	40	40	250	50,0	50	8	CN.. 2509	147,70	340	147,70	340

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 508 016 / 70 509 016	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	7,89	233
70 508 020 / 70 509 020	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	7,89	233
70 508 025 / 70 509 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	7,89	233
70 508 032 / 70 509 032	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	7,89	233
70 508 125 / 70 509 125	SW3	2,45	176	1,12	391	1,22	394	12,48	385	3,80	388	12,48	380
70 508 132 / 70 509 132	SW3	2,45	176	1,12	391	1,22	394	12,48	385	3,80	388	12,48	380
70 508 232 / 70 509 232	SW4	2,57	396	1,76	392	1,22	395	19,11	386	3,80	389	19,21	381
70 508 340 / 70 509 340	SW5	3,68	265	1,12	621	1,89	623	25,83	620	2,28	622	24,75	624

MaxiLock-N – PCBN 75° – Toolholder with lever clamping







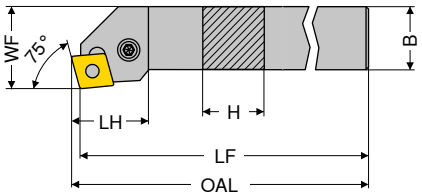
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 501 ...		Right-hand 2A/24 Article no. 70 500 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PCBN R/L 2525 M12	25	25	150	27,70	22	4	CN.. 1204	85,04	025	85,04	025
PCBN R 2525 M16	25	25	150	31,81	22	4	CN.. 1606			85,04	125
PCBN R/L 3232 P19	32	32	170	38,00	27	8	CN.. 1906	118,80	032	118,80	032

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 500 025 / 70 501 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	7,89	233
70 500 125	SW3	2,45	176	1,12	391	1,22	394	12,48	385	3,80	388	12,48	380
70 500 032 / 70 501 032	SW4	2,57	396	1,76	392	1,22	395	19,11	386	3,80	389	19,21	381

MaxiLock-N – PCKN 75° – Toolholder with lever clamping







Illustrations show right-hand versions

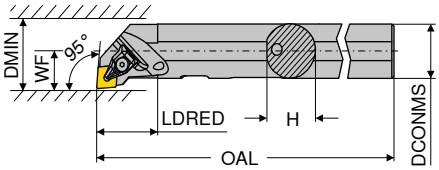
ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 505 ...		Right-hand 2A/24 Article no. 70 504 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PCKN R/L 2525 M12	25	25	153,07	150	31,4	32	4	CN.. 1204	85,04	025	85,04	025

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 505 025 / 70 504 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	7,89	233

9

MaxiLock-D – DCLN 95° – Boring bar with top clamping







Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 557 ...	EUR	Right-hand 2A/24 Article no. 70 556 ...	EUR
A20Q DCLN R/L 09	20	19	180	35	13	25	2	CN.. 0903	199,40	**720**	199,40	**720**
A25R DCLN R/L 12	25	24	200	36	17	32	4	CN.. 1204	222,20	**825**	222,20	**825**
A32S DCLN R/L 12	32	31	250	40	22	40	4	CN.. 1204	229,80	**832**	229,80	**832**
A40T DCLN R/L 12	40	39	300	45	27	50	4	CN.. 1204	256,00	**840**	256,00	**840**

Tool holders with HSK-T interface can be found in → **Chapter 16.**


XPress type


Key D


Clamping screw

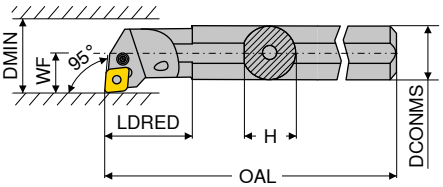

Carbide type C

Spare parts for Article no.	2A/28 Article no. 70 950 ... EUR		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
70 556 720 / 70 557 720	24,10	**823**	T09 - IP	11,24 **126**	M3x7 - IP	3,14 **819**	7,12	**848**
70 556 825 / 70 557 825	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**		
70 556 832 / 70 557 832	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**
70 556 840 / 70 557 840	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**810**

MaxiLock-N – PCLN 95° – Boring bar with lever clamping

- A... = with thro' coolant
- S... = without thro' coolant







Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 557 ...	EUR	Right-hand 2A/24 Article no. 70 556 ...	EUR
A25R PCLN R/L 12	25	23	200	36,0	17	32	4	CN.. 1204	222,20	**225**	222,20	**225**
S25T PCLN R/L 12	25	23	300	22,0	17	32	4	CN.. 1204	222,20	**025**	222,20	**025**
A32S PCLN R/L 12	32	30	250	50,0	22	40	4	CN.. 1204	229,80	**232**	229,80	**232**
S32U PCLN R/L 12	32	30	350	24,1	22	40	4	CN.. 1204	229,80	**032**	229,80	**032**
A40T PCLN R/L 12	40	38	300	60,0	27	50	4	CN.. 1204	256,00	**240**	256,00	**240**
S40V PCLN R/L 12	40	38	400	24,1	27	50	4	CN.. 1204	256,00	**040**	256,00	**040**
S50W PCLN R/L 16	50	47	450	31,0	35	63	4	CN.. 1606	316,80	**050**	316,80	**050**


Key I


Shim


Assembly pin


Lever


Clamping screw

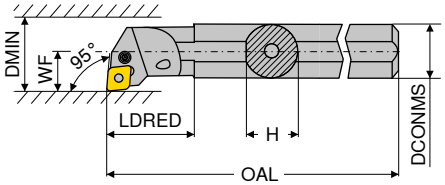

Carbide type C

Spare parts for Article no.		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
70 556 225 / 70 557 225	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	7,89	**233**
70 556 025 / 70 557 025	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	7,89	**233**
70 556 232 / 70 557 232	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	7,89	**233**
70 556 032 / 70 557 032	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	7,89	**233**
70 556 240 / 70 557 240	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	7,89	**233**
70 556 040 / 70 557 040	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	7,89	**233**
70 556 050 / 70 557 050	SW3	2,45	**176**	1,12	**391**	1,22	**394**	12,48	**385**	3,80	**388**	12,48	**380**

MaxiLock-N – PCLN 95° – Boring bar with lever clamping

▲ with carbide core







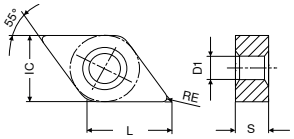
Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 559 ...		Right-hand 2A Article no. 70 558 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A25R PCLN R/L 12	25	23	200	40	17	31	4	CN.. 1204	709,60	**025**	709,60	**025**
E-A32S PCLN R/L 12	32	30	250	50	22	39	4	CN.. 1204	936,70	**032**	936,70	**032**
E-A40T PCLN R/L 12	40	38	300	60	27	48	4	CN.. 1204	1.118,00	**040**	1.118,00	**040**

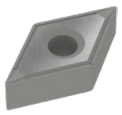
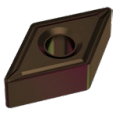
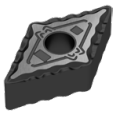
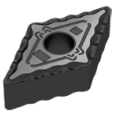
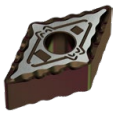
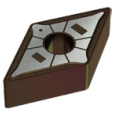
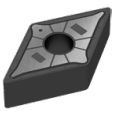
Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR	
70 558 025 / 70 559 025	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	7,89	**233**
70 558 032 / 70 559 032	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	7,89	**233**
70 558 040 / 70 559 040	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	7,89	**233**

DNMG / DNMA / DNMM / DNGP

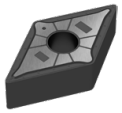
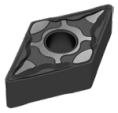
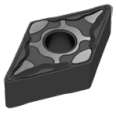
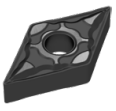
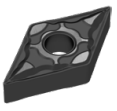
Designation	L	S	D1	IC
	mm	mm	mm	mm
DNMG 1104..	11,6	4,76	3,81	9,52
DN.. 1504..	15,5	4,76	5,16	12,70
DN.. 1506..	15,5	6,35	5,16	12,70



DNMG

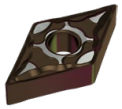
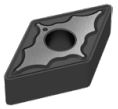
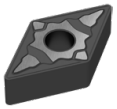
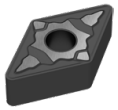
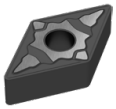
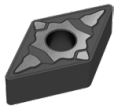
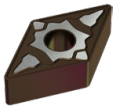
	-CF TCM10	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-TFQ CTEP110	-TFQ CTCP115
	-CF CWC10	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-TFQ DCC1110	-TFQ HCX1115
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET DNMG 1A/78	CERMET DNMG 1A/78	DNMG 1A/08	DNMG 1A/08	DNMG 1A/08	CERMET DNMG 1A/78	DNMG 1A/08
ISO / RE mm	Article no. 70 155 ... EUR	Article no. 76 102 ... EUR	Article no. 76 134 ... EUR	Article no. 76 134 ... EUR	Article no. 76 134 ... EUR	Article no. 76 153 ... EUR	Article no. 76 153 ... EUR
110402EN 0,2			12,19 302	12,19 502	12,19 702		
110404EN 0,4	11,63 904	12,19 004	12,19 304	12,19 504	12,19 704		
110408EN 0,8		12,19 006	12,19 306	12,19 506	12,19 706		
110412EN 1,2			12,19 308	12,19 508	12,19 708		
150404EN 0,4			14,77 316	14,77 516	14,77 716		
150408EN 0,8			14,77 318	14,77 518	14,77 718		
150412EN 1,2			14,77 320	14,77 520	14,77 720		
150604EN 0,4	15,23 914	16,00 028	16,00 328	16,00 528	16,00 728	17,79 028	18,46 32800
150608EN 0,8		16,00 030	16,00 330	16,00 530	16,00 730	17,79 030	18,46 330
150612EN 1,2		16,00 032	16,00 332	16,00 532	16,00 732		
Steel	●	●	●	●	●	●	●
Stainless steel		○	○	○	○	○	○
Cast iron	○	○	○	○		○	○
Non ferrous metals							
Heat resistant alloys					○		

DNMG

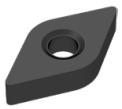
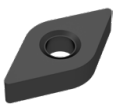
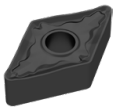
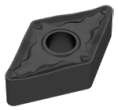
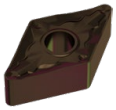
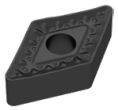
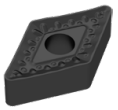
		-TFQ CTCP125	-XU CTCP115	-XU CTCP125	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115	-M50 CTCP125
		-TFQ HCX1125	-XU HCX1115	-XU HCX1125	-NM15 DCX3110	-NM15 HCF3120	-NM15 HCX1115	-NM15 HCX1125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	M	M	M	M	M	M
		DNMG	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 153 ...	Article no. 76 291 ...	Article no. 76 291 ...	Article no. 70 133 ...	Article no. 70 133 ...	Article no. 76 136 ...	Article no. 76 136 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
110404EN	0,4						12,19 304	12,19 504
110408EN	0,8						12,19 306	12,19 506
110412EN	1,2						12,19 308	12,19 508
150404EN	0,4						14,77 316	14,77 514
150408EN	0,8				14,77 018	14,77 518	14,77 318	14,77 518
150412EN	1,2				14,77 020	14,77 520	14,77 320	14,77 516
150416EN	1,6						14,77 322	14,77 522
150604EN	0,4	18,46 528	16,00 328	16,00 528			16,00 328	16,00 528
150608EN	0,8	18,46 530	16,00 330	16,00 530	16,00 030	16,00 530	16,00 330	16,00 530
150612EN	1,2		16,00 332	16,00 532	16,00 032	16,00 532	16,00 332	16,00 532
150616EN	1,6						16,00 334	16,00 534
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○	○		○	○
Cast iron		○	○	○	●	●	○	○
Non ferrous metals								
Heat resistant alloys								

9

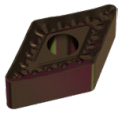
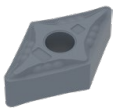
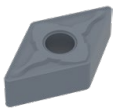
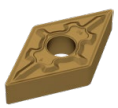
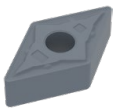
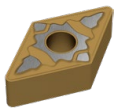
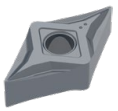
DNMG

		-M50 CTCP135		-TMQ CTCP125		-M70 CTCK110		-M70 CTCK120		-M70 CTCP115		-M70 CTCP125		-M70 CTCP135	
		-NM15 HCR1135		-TMQ HCX1125		-NM19 DCX3110		-NM19 HCF3120		-NM19 HCX1115		-NM19 HCX1125		-NM19 HCR1135	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		M		M		M		M		M		M		M	
		DNMG		DNMG		DNMG		DNMG		DNMG		DNMG		DNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 136 ...		Article no. 76 197 ...		Article no. 70 263 ...		Article no. 70 263 ...		Article no. 76 263 ...		Article no. 76 263 ...		Article no. 76 263 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
110404EN	0,4	12,19	704												
110408EN	0,8	12,19	706							12,19	306	12,19	506	12,19	706
110412EN	1,2	12,19	708							12,19	308	12,19	508	12,19	708
150404EN	0,4	14,77	716												
150408EN	0,8	14,77	718			14,77	018	14,77	518	14,77	318	14,77	518	14,77	718
150412EN	1,2	14,77	720			14,77	020	14,77	520	14,77	320	14,77	520	14,77	720
150416EN	1,6	14,77	722							14,77	322	14,77	522	14,77	722
150604EN	0,4	16,00	728												
150608EN	0,8	16,00	730	18,46	530	16,00	030	16,00	530	16,00	330	16,00	530	16,00	730
150612EN	1,2	16,00	732	18,46	532	16,00	032	16,00	532	16,00	332	16,00	532	16,00	732
150616EN	1,6	16,00	734			16,00	034	16,00	534	16,00	334	16,00	534	16,00	734
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○		○				○		○		○	
Cast iron				○		●		●		○		○			
Non ferrous metals															
Heat resistant alloys		○												○	

DNMA / DNMM

		CTCK110		CTCK120		-R28 CTCP115		-R28 CTCP125		-R28 CTCP135		-R58 CTCP115		-R58 CTCP125	
		DCX3110		HCF3120		-NR14 HCX1115		-NR14 HCX1125		-NR14 HCR1135		-NR17 HCX1115		-NR17 HCX1125	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		R		R		R		R		R		R		R	
		DNMA		DNMA		DNMM		DNMM		DNMM		DNMM		DNMM	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 70 156 ...		Article no. 70 156 ...		Article no. 76 165 ...		Article no. 76 165 ...		Article no. 76 165 ...		Article no. 76 166 ...		Article no. 76 166 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
150408EN	0,8	14,77	018	14,77	518										
150412EN	1,2	14,77	020	14,77	520										
150608EN	0,8	16,00	030	16,00	530										
150612EN	1,2	16,00	032	16,00	532	16,00	332	16,00	532	16,00	732	16,00	332	16,00	532
150616EN	1,6					16,00	334	16,00	534	16,00	734	16,00	334	16,00	534
Steel						●		●		●		●		●	
Stainless steel						○		○		○		○		○	
Cast iron		●		●		○		○				○		○	
Non ferrous metals															
Heat resistant alloys										○					

DNMM / DNMG / DNGP

		-R58 CTCP135		-F30 CTPM125		-M30 CTPM125		-M42 CTC2135		-M60 CTPM125		-M70 CTC2135		-F32 CTP2120	
		-NR17 HCR1135		-NF23 HCN2125		-NM23 HCN2125		-M42 CWN2135		-NM26 HCN2125		-NM19 CWN2135		-F32 CCN2120	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN					
															
		R		F		M		M		M		M		F	
		DNMM		DNMG		DNMG		DNMG		DNMG		DNMG		DNGP	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE mm	Article no. 76 166 ... EUR		Article no. 75 013 ... EUR		Article no. 75 014 ... EUR		Article no. 70 158 ... EUR		Article no. 75 015 ... EUR		Article no. 70 263 ... EUR		Article no. 70 118 ... EUR	
110404EN	0,4			12,19	204			12,19	600						
110408EN	0,8			12,19	206	12,19	206	12,19	602			12,19	406		
110412EN	1,2					12,19	208								
150402FN	0,2													19,57	602
150404EN	0,4							14,77	614						
150404FN	0,4													19,57	604
150408EN	0,8							14,77	618						
150408FN	0,8													19,57	608
150602FN	0,2													21,37	610
150604EN	0,4			16,00	228			16,00	620						
150604FN	0,4													21,37	612
150608EN	0,8			16,00	230	16,00	230	16,00	622	16,00	230				
150608FN	0,8													21,37	614
150612EN	1,2	16,00	732			16,00	232			16,00	232				
150616EN	1,6	16,00	734												

Steel	●	○	○	○	○	○	
Stainless steel	○	●	●	●	●	●	●
Cast iron							○
Non ferrous metals							○
Heat resistant alloys	○		○	●	○	●	●

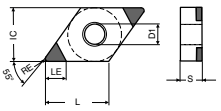
9

DNMG

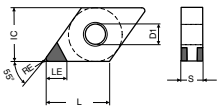
		-M34 CTP5110		-M34 CTP5115		-M42 CTP2120		-M52 CTP2120	
		-M34 HCN5110		-M34 HCN5115		-M42 CCN2120		-M52 CCN2120	
		DRAGONSKIN		DRAGONSKIN					
									
		M		M		M		M	
		DNMG 1A/08		DNMG 1A/08		DNMG 1A/08		DNMG 1A/08	
ISO	RE mm	Article no. 75 004 ... EUR		Article no. 75 004 ... EUR		Article no. 70 158 ... EUR		Article no. 70 119 ... EUR	
150404EN	0,4	15,43	416	15,43	516	14,77	604		
150408EN	0,8	15,43	418	15,43	518				
150412EN	1,2	15,43	420	15,43	520				
150604EN	0,4					16,00	610	16,00	612
150608EN	0,8	16,90	430	16,90	530	16,00	612	16,00	614
150612EN	1,2	16,90	432	16,90	532				
Steel									
Stainless steel		○		○		○		○	
Cast iron						○		○	
Non ferrous metals						○		○	
Heat resistant alloys		●		●		●		●	

DNGA

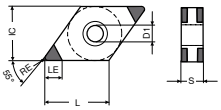
Designation	L	S	D1	IC
	mm	mm	mm	mm
DNGA 1506..	15,5	6,35	5,16	12,7



-B

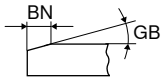


-K (-2SC)



-L (-4SC)

DNGA



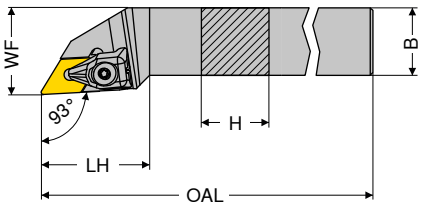
ISO	RE	GB	BN	LE	-L CTBS20C -4SC PBC15-S F CBN DNGA Y0 Article no. 71 403 ...		-B CTBH15C F CBN DNGA NEW Y0 Article no. 71 017 ...		-K CTBH20C -2SC PBC25-S F CBN DNGA Y0 Article no. 71 402 ...		-L CTBH20C -4SC PBC25-S F CBN DNGA Y0 Article no. 71 403 ...		-K CTBH40C -2SC PBC40-S F CBN DNGA Y0 Article no. 71 402 ...		-L CTBH40C -4SC PBC40-S F CBN DNGA Y0 Article no. 71 403 ...	
	mm	°	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
150604SN	0,4	10	0,09	2,8	57,23	122										
150604TN	0,4	15	0,09	2,8					34,98	222						
150604SN	0,4	15	0,09	2,8	57,23	132										
150604SN	0,4	15	0,11	2,8			66,91	32814								
150604SN	0,4	20	0,09	2,8	57,23	152									57,23	332
150604SN	0,4	20	0,11	2,8							57,23	242				
150604TN	0,4	25	0,11	2,8					34,98	252						
150604SN	0,4	25	0,11	2,8									34,98	352	57,23	352
150604SN	0,4	25	0,13	2,8			66,91	32829			57,23	262				
150604FN	0,4			2,8					34,98	212						
150604SN	0,4	30	0,14	2,8											57,23	372
150604SN	0,4	30	0,18	2,8	57,23	182										
150604SN	0,4	35	0,14	2,8									34,98	382		
150608FN	0,8			2,6					34,98	214						
150608SN	0,8	10	0,09	2,6	57,23	124										
150608SN	0,8	15	0,09	2,6	57,23	134										
150608TN	0,8	15	0,09	2,6					34,98	224						
150608SN	0,8	15	0,11	2,6			66,91	33014								
150608SN	0,8	20	0,09	2,6	57,23	154									57,23	334
150608SN	0,8	20	0,11	2,6							57,23	244				
150608TN	0,8	25	0,11	2,6					34,98	254						
150608SN	0,8	25	0,11	2,6									34,98	354	57,23	354
150608SN	0,8	25	0,13	2,6			66,91	33029			57,23	264			57,23	364
150608SN	0,8	30	0,14	2,6							57,23	274			57,23	374
150608SN	0,8	30	0,18	2,6	57,23	184										
150608SN	0,8	35	0,14	2,6									34,98	384		
150612SN	1,2	15	0,11	2,8			66,91	33214								
150612SN	1,2	25	0,13	2,8			66,91	33229								

Cast iron	●					
Sintered steels	●					
Heat resistant alloys	●					
hardened < 45 HRC		●				
hardened 46–55 HRC		●	●	●	●	●
hardened 56–60 HRC		●	●	●	●	●
hardened 61–65 HRC					●	●

9

MaxiLock-D – DDJN 93° – Toolholder with top clamping







Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 541 ...		Right-hand 2A/24 Article no. 70 540 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DDJN R/L 1616 H11	16	16	100	33	20	2	DN.. 1104	76,33	**816**	76,33	**816**
DDJN R/L 2020 K11	20	20	125	33	25	2	DN.. 1104	85,04	**820**	85,04	**820**
DDJN R/L 2525 M11	25	25	150	33	32	2	DN.. 1104	87,97	**825**	87,97	**825**
DDJN R/L 2020 K15	20	20	125	40	25	4	DN.. 1504 / 1506	85,04	**720**	85,04	**720**
DDJN R/L 2525 M15	25	25	150	40	32	4	DN.. 1504 / 1506	87,97	**725**	87,97	**725**
DDJN R/L 3225 P15	32	25	170	40	32	4	DN.. 1504 / 1506	94,37	**832**	94,37	**832**

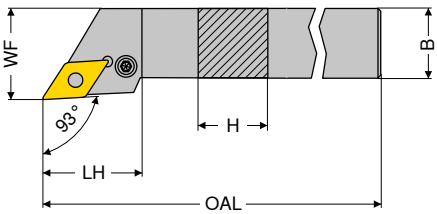
Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

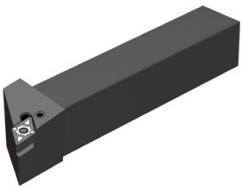
When using DN.. 1504 indexable inserts, use insert seat article no. 70 950 40000.

Spare parts		2A/28 XPress type Article no. 70 950 ...			Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.		EUR			EUR			EUR		EUR	
70 541 816 / 70 540 816		28,76	**835**	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**	3,53	**808**
70 541 820 / 70 540 820		28,76	**835**	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**	3,53	**808**
70 541 825 / 70 540 825		28,76	**835**	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**	3,53	**808**
70 541 720 / 70 540 720		23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**
70 541 725 / 70 540 725		23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**
70 541 832 / 70 540 832		23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**

MaxiLock-N – PDJN 93° – Toolholder with lever clamping







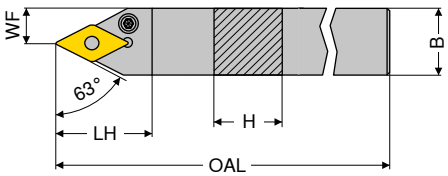
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 541 ...		Right-hand 2A/24 Article no. 70 540 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PDJN R/L 1616 H11	16	16	100	30,0	20	3	DN.. 1104	76,33	**116**	76,33	**116**
PDJN R/L 2020 K11	20	20	125	30,0	25	3	DN.. 1104	85,04	**120**	85,04	**120**
PDJN R/L 2525 M11	25	25	150	30,0	32	3	DN.. 1104	87,97	**125**	87,97	**125**
PDJN R/L 2020 K15	20	20	125	34,9	25	3,2	DN.. 1506	85,04	**020**	85,04	**020**
PDJN R/L 2525 M15	25	25	150	35,4	32	3,2	DN.. 1506	87,97	**025**	87,97	**025**
PDJN R/L 3225 P15	32	25	170	35,4	32	3,2	DN.. 1506	94,37	**032**	94,37	**032**

Spare parts		2A/28 Key I Article no. 70 950 ...			2A/28 Shim Article no. 70 950 ...			2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.		EUR			EUR			EUR		EUR		EUR		EUR	
70 541 116 / 70 540 116	SW2,5	2,45	**175**		2,06	**122**		1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 541 120 / 70 540 120	SW2,5	2,45	**175**		2,06	**122**		1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 541 125 / 70 540 125	SW2,5	2,45	**175**		2,06	**122**		1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 541 020 / 70 540 020	SW3	2,45	**176**		1,76	**198**		1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**
70 541 025 / 70 540 025	SW3	2,45	**176**		1,76	**198**		1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**
70 541 032 / 70 540 032	SW3	2,45	**176**		1,76	**198**		1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**

MaxiLock-N – PDNN 63° – Toolholder with lever clamping





Illustrations show right-hand versions



ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 537 ...		Right-hand 2A/24 Article no. 70 536 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PDNN R/L 2525 M11	25	25	150	30,0	12,5	3	DN.. 1104	87,97	**125**	87,97	**125**
PDNN R/L 2525 M15	25	25	150	36,5	12,5	3,2	DN.. 1506	87,97	**025**	87,97	**025**


Key I


Shim

Assembly pin


Lever

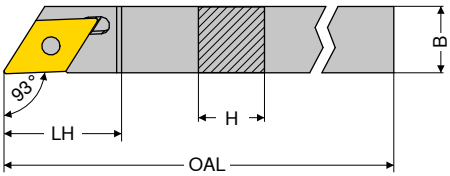

Clamping screw


Solid Carbide Seat D

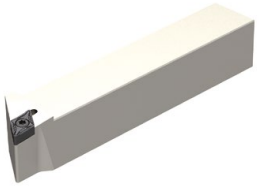
Spare parts for Article no.		2A/28 Article no. 70 950 ...		Shim Article no. 70 950 ...		Assembly pin Article no. 70 950 ...		Lever Article no. 70 950 ...		Clamping screw Article no. 70 950 ...		Solid Carbide Seat D Article no. 70 950 ...	
		EUR		EUR		EUR		EUR		EUR		EUR	
70 537 125 / 70 536 125	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 537 025 / 70 536 025	SW3	2,45	**176**	1,76	**198**	1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**

MaxiLock-S – SDJN 93° – Toolholder with screw clamping





Illustrations show right-hand versions



ISO designation	H	B	OAL	LH	torque moment	Insert	Left-hand X0 Article no. 70 699 ...		Right-hand X0 Article no. 70 698 ...	
	mm	mm	mm	mm	Nm		EUR		EUR	
SDJN R/L 1012 H11	10	12	100	21,3	3,2	DNGU 1104	97,42	**010**	97,42	**010**
SDJN R/L 1212 H11	12	12	100	21,3	3,2	DNGU 1104	97,42	**012**	97,42	**012**
SDJN R/L 1616 K11	16	16	125	21,3	3,2	DNGU 1104	105,90	**016**	105,90	**016**
SDJN R/L 2020 K11	20	20	125	21,3	3,2	DNGU 1104	105,90	**020**	105,90	**020**
SDJN R/L 2525 M11	25	25	150	21,3	3,2	DNGU 1104	122,70	**025**	122,70	**025**


Key D

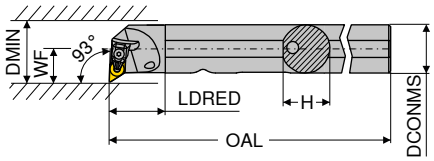

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ...		2A Article no. 72 950 ...	
		EUR		EUR	
70 699 010 / 70 698 010	T15 - IP	11,89	**128**	M4x11 4,80	**007**
70 699 012 / 70 698 012	T15 - IP	11,89	**128**	M4x11 4,80	**007**
70 699 016 / 70 698 016	T15 - IP	11,89	**128**	M4x11 4,80	**007**
70 699 020 / 70 698 020	T15 - IP	11,89	**128**	M4x11 4,80	**007**
70 699 025 / 70 698 025	T15 - IP	11,89	**128**	M4x11 4,80	**007**

9

MaxiLock-D – DDUN 93° – Boring bar with top clamping







Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 569 ...		Right-hand 2A/24 Article no. 70 568 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
A25R DDUN R/L 11	25	24	200	30	17	32	2	DN.. 1104	222,20	**725**	222,20	**725**
A32S DDUN R/L 11	32	31	250	40	22	40	2	DN.. 1104	229,80	**732**	229,80	**732**
A40T DDUN R/L 15	40	39	300	45	27	50	4	DN.. 1506	256,00	**840**	256,00	**840**

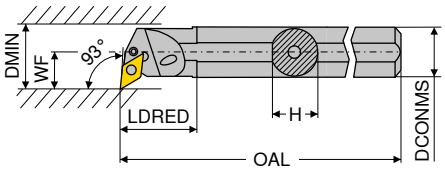
Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts		2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR	
70 568 725 / 70 569 725		28,76	**835**	T09 - IP	11,24 **126**	M3x7 - IP	3,14 **819**	3,53	**808**
70 568 732 / 70 569 732		28,76	**835**	T09 - IP	11,24 **126**	M3x7 - IP	3,14 **819**	3,53	**808**
70 568 840 / 70 569 840		23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**811**

MaxiLock-N – PDUN 93° – Boring bar with lever clamping

- A... = with thro' coolant
- S... = without thro' coolant







Illustrations show right-hand versions

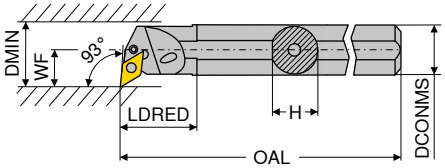
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 569 ...		Right-hand 2A/24 Article no. 70 568 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
A20Q PDUN R/L 11	20	18,5	180	36	16,0	28	3	DN.. 1104	199,40	**120**	199,40	**120**
A25R PDUN R/L 11	25	23,0	200	36	18,5	32	3	DN.. 1104	222,20	**125**	222,20	**125**
A32S PDUN R/L 11	32	30,0	250	36	22,0	40	3	DN.. 1104	229,80	**132**	229,80	**132**
A32S PDUN R/L 15	32	30,0	250	50	22,0	40	3,2	DN.. 1506	229,80	**232**	229,80	**232**
A40T PDUN R/L 15	40	38,0	300	60	27,0	50	3,2	DN.. 1506	256,00	**240**	256,00	**240**
S50W PDUN R/L 15	50	47,0	450	31	35,0	63	3,2	DN.. 1506	316,80	**050**	316,80	**050**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 568 120 / 70 569 120	SW2,5	2,45	**175**					14,97	**125**	2,17	**126**		
70 568 125 / 70 569 125	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 568 132 / 70 569 132	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 568 232 / 70 569 232	SW3	2,45	**176**	1,76	**198**	1,22	**192**	13,68	**188**	3,50	**209**	7,89	**236**
70 568 240 / 70 569 240	SW3	2,45	**176**	1,76	**198**	1,22	**192**	13,68	**188**	3,50	**209**	7,89	**236**
70 568 050 / 70 569 050	SW3	2,45	**176**	1,76	**198**	1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**

MaxiLock-N – PDUN 93° – Boring bar with lever clamping

▲ with carbide core





Illustrations show right-hand versions



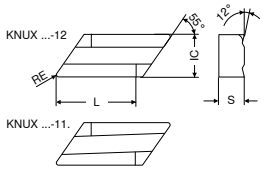
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 563 ...		Right-hand 2A Article no. 70 562 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A25R PDUN R/L 11	25	23	200	40	17	31	3	DN.. 1104	709,60	**025**	709,60	**025**
E-A32S PDUN R/L 15	32	30	250	50	22	39	3,2	DN.. 1506	936,70	**032**	936,70	**032**
E-A40T PDUN R/L 15	40	38	300	60	27	48	3,2	DN.. 1506	1.118,00	**040**	1.118,00	**040**

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
		EUR		EUR		EUR		EUR		EUR		EUR	
70 562 025 / 70 563 025	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	14,97	**121**	3,19	**208**	7,21	**120**
70 562 032 / 70 563 032	SW3	2,45	**176**	1,76	**198**	1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**
70 562 040 / 70 563 040	SW3	2,45	**176**	1,76	**198**	1,22	**192**	13,68	**188**	3,80	**388**	7,89	**236**

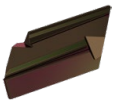
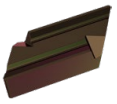
9

KNUX

Designation	L	S	IC
	mm	mm	mm
KNUX 1604..	16	4,76	9,52

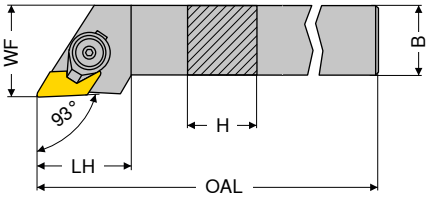


KNUX

		-11 CTCK110	-11 CTCK120	-11 CTCP135	-12 CTCP135
		-11 DCX3110	-11 HCF3120	-11 HCR1135	-12 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		F	F	F	M
		KNUX	KNUX	KNUX	KNUX
		1A/13	1A/13	1A/13	1A/13
ISO	RE mm	Article no. 70 240 ... EUR	Article no. 70 240 ... EUR	Article no. 76 240 ... EUR	Article no. 76 242 ... EUR
160405EL	0,5	14,77 002	14,77 552	14,77 702	14,77 702
160405ER	0,5	14,77 000	14,77 500	14,77 700	14,77 700
160410EL	1,0			14,77 706	14,77 706
160410ER	1,0			14,77 704	14,77 704
Steel		●	●	●	●
Stainless steel		○		○	○
Cast iron		●	●		
Non ferrous metals					
Heat resistant alloys				○	○

Simplex – CKJN 93° – Toolholder with top clamping







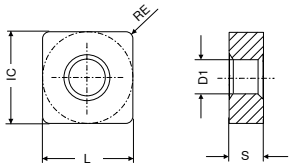
Illustrations show right-hand versions

ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Left-hand 2A/23 Article no. 70 799 ... EUR	Right-hand 2A/23 Article no. 70 798 ... EUR
CKJN R/L 2525 M16	25	25	150	35	32	7	KNUX 1604	140,80 025	140,80 025

		2A/28 Clamp	2A/28 Key I	2A/28 Clamping screw	2A/28 Countersunk head grooved pin	2A/28 Carbide type C	2A/28 Spring pin	2A/28 Spring washer
								
Spare parts		Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...
for Article no.		EUR	EUR	EUR	EUR	EUR	EUR	EUR
70 798 025		17,04 612	2,57 396	5,59 615	1,10 603	11,28 613	2,45 616	1,10 617
70 799 025		17,04 618	2,57 396	5,59 615	1,10 603	11,28 614	2,45 616	1,10 617

SNMG / SNMA / SNMM

Designation	L	S	D1	IC
	mm	mm	mm	mm
SNMG 0903..	9,52	3,18	3,81	9,52
SNM. 1204..	12,70	4,76	5,16	12,70
SNM. 1506..	15,87	6,35	6,35	15,87
SNM. 1906..	19,05	6,35	7,94	19,05
SNMM 2507..	25,40	7,94	9,12	25,40
SNMM 2509..	25,40	9,52	9,12	25,40

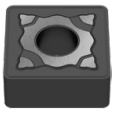


SNMG

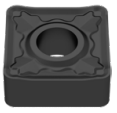
		-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-M50 CTCP115	-M50 CTCP125	-M50 CTCP135	-M70 CTCK110
		-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-NM15 HCX1115	-NM15 HCX1125	-NM15 HCR1135	-NM19 DCX3110
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	M	M	M	M
		SNMG	SNMG	SNMG	SNMG	SNMG	SNMG	SNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 140 ...	Article no. 76 140 ...	Article no. 76 140 ...	Article no. 76 137 ...	Article no. 76 137 ...	Article no. 76 137 ...	Article no. 70 225 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
090308EN	0,8	7,42 306	7,42 506	7,42 706				
120404EN	0,4	11,63 316	11,63 516	11,63 716				
120408EN	0,8	11,63 318	11,63 518	11,63 718	11,63 318	11,63 518	11,63 718	11,63 018
120412EN	1,2	11,63 320	11,63 520	11,63 720	11,63 320	11,63 520	11,63 720	11,63 020
120416EN	1,6				11,63 322	11,63 522	11,63 722	11,63 022
150608EN	0,8				18,46 330	18,46 530	18,46 730	
150612EN	1,2				18,46 332	18,46 532	18,46 732	18,46 032
150616EN	1,6				18,46 334	18,46 534	18,46 734	18,46 034
190612EN	1,2							26,07 044
190616EN	1,6							26,07 046
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○	○	○	○	○
Cast iron		○	○		○	○		●
Non ferrous metals								
Heat resistant alloys				○			○	

9

SNMG / SNMA

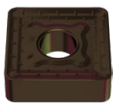
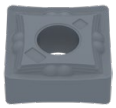
		-M70 CTCK120		-M70 CTCP115		-M70 CTCP125		-M70 CTCP135		CTCP125		CTCP135		CTCK110	
		-NM19 HCF3120		-NM19 HCX1115		-NM19 HCX1125		-NM19 HCR1135		HCX1125		HCR1135		DCX3110	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		M		M		M		M		M		M		R	
		SNMG		SNMG		SNMG		SNMG		SNMG		SNMG		SNMA	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 70 225 ...		Article no. 76 225 ...		Article no. 76 225 ...		Article no. 76 225 ...		Article no. 76 116 ...		Article no. 76 116 ...		Article no. 70 114 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
090308EN	0,8									7,42	506	7,42	706		
120408EN	0,8	11,63	518	11,63	318	11,63	518	11,63	718					11,63	018
120412EN	1,2	11,63	520	11,63	320	11,63	520	11,63	720					11,63	020
120416EN	1,6	11,63	522	11,63	322	11,63	522	11,63	722					11,63	022
150612EN	1,2	18,46	532	18,46	332	18,46	532	18,46	732					18,46	032
150616EN	1,6	18,46	534	18,46	334	18,46	534	18,46	734					18,46	034
190612EN	1,2	26,07	544	26,07	344	26,07	544	26,07	744					26,07	044
190616EN	1,6	26,07	546	26,07	346	26,07	546	26,07	746					26,07	046
190624EN	2,4			26,07	348	26,07	548	26,07	748						
Steel		●		●		●		●		●		●			
Stainless steel				○		○		○		○		○			
Cast iron		●		○		○				○				●	
Non ferrous metals															
Heat resistant alloys								○				○			

SNMA / SNMM

		CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135	-R58 CTCP115	-R58 CTCP125	-R58 CTCP135
		HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135	-NR17 HCX1115	-NR17 HCX1125	-NR17 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		R	R	R	R	R	R	R
		SNMA	SNMM	SNMM	SNMM	SNMM	SNMM	SNMM
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 70 114 ...	Article no. 76 128 ...	Article no. 76 128 ...	Article no. 76 128 ...	Article no. 76 129 ...	Article no. 76 129 ...	Article no. 76 129 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
120408EN	0,8	11,63 518				11,63 318	11,63 518	11,63 718
120412EN	1,2	11,63 520				11,63 320	11,63 520	11,63 720
120416EN	1,6	11,63 522						
150612EN	1,2	18,46 532	18,46 332	18,46 532	18,46 732	18,46 332	18,46 532	18,46 732
150616EN	1,6	18,46 534	18,46 334	18,46 534	18,46 734	18,46 334	18,46 534	18,46 734
190612EN	1,2	26,07 544				26,07 344	26,07 544	26,07 744
190616EN	1,6	26,07 546	26,07 346	26,07 546	26,07 746	26,07 346	26,07 546	26,07 746
190624EN	2,4					26,07 348	26,07 548	26,07 748
250724EN	2,4				51,24 760	51,24 360	51,24 560	51,24 760
250924EN	2,4		60,18 370	60,18 570	60,18 770	60,18 370	60,18 570	60,18 770
Steel			●	●	●	●	●	●
Stainless steel			○	○	○	○	○	○
Cast iron		●	○	○		○	○	
Non ferrous metals								
Heat resistant alloys					○			○

9

SNMM / SNMG

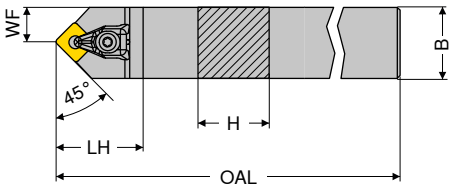
	-R88 CTCP115	-R88 CTCP125	-R88 CTCP135	-F30 CTPM125	-M30 CTPM125	-M42 CTC2135	-M60 CTPM125
	-NR19 HCX1115	-NR19 HCX1125	-NR19 HCR1135	-NF23 HCN2125	-NM23 HCN2125	-M42 CWN2135	-NM26 HCN2125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
							
	R	R	R	F	M	M	M
	SNMM	SNMM	SNMM	SNMG	SNMG	SNMG	SNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 130 ... EUR	Article no. 76 130 ... EUR	Article no. 76 130 ... EUR	Article no. 75 016 ... EUR	Article no. 75 017 ... EUR	Article no. 70 002 ... EUR	Article no. 75 018 ... EUR
120404EN 0,4				11,63 216			
120408EN 0,8				11,63 218	11,63 218	11,63 408	11,63 218
120412EN 1,2				11,63 220		11,63 412	11,63 210
120416EN 1,6							11,63 220
190616SN 1,6	26,07 346	26,07 546	26,07 746				
190624SN 2,4	26,07 348	26,07 548	26,07 748				
250724SN 2,4	51,24 36000	51,24 56000	51,24 760				
250924SN 2,4	60,18 37000	60,18 57000	60,18 770				
Steel	●	●	●	○	○	○	○
Stainless steel	○	○	○	●	●	●	●
Cast iron	○	○					
Non ferrous metals							
Heat resistant alloys			○		○	●	○

SNMG

	-M70 CTC2135	-M34 CTP5110	-M34 CTP5115	-M52 CTP2120
	-NM19 CWN2135	-M34 HCN5110	-M34 HCN5115	-M52 CCN2120
		DRAGONSKIN	DRAGONSKIN	
				
	M	M	M	M
	SNMG	SNMG	SNMG	SNMG
	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 70 225 ... EUR	Article no. 75 005 ... EUR	Article no. 75 005 ... EUR	Article no. 70 129 ... EUR
120408EN 0,8	11,63 418	12,19 418	12,19 518	11,63 608
120412EN 1,2	11,63 420	12,19 420	12,19 520	
190616EN 1,6	26,07 446			
Steel	○			
Stainless steel	●	○	○	○
Cast iron				○
Non ferrous metals				○
Heat resistant alloys	●	●	●	●

MaxiLock-D – DSDN 45° – Toolholder with top clamping







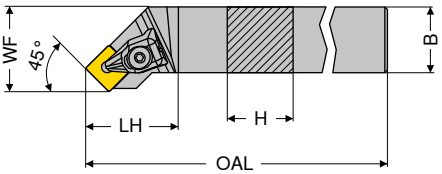
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Neutral 2A/24 Article no. 70 516 ... EUR	
	mm	mm	mm	mm	mm	Nm			
DSDN N 2020 K12	20	20	125	38	10,3	4	SN.. 1204	85,04	**620**
DSDN N 2525 M12	25	25	150	38	12,5	4	SN.. 1204	87,97	**625**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
for Article no.										
70 516 620	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**813**
70 516 625	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**813**

MaxiLock-D – DSSN 45° – Toolholder with top clamping







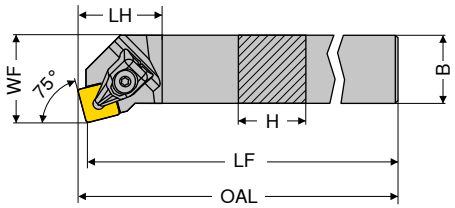
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 513 ... EUR		Right-hand 2A/24 Article no. 70 512 ... EUR	
	mm	mm	mm	mm	mm	Nm					
DSSN R/L 2020 K12	20	20	125	35	25	4	SN.. 1204	85,04	**620**	85,04	**620**
DSSN R/L 2525 M12	25	25	150	35	32	4	SN.. 1204	87,97	**625**	87,97	**625**
DSSN R/L 3225 P12	32	25	170	35	32	4	SN.. 1204	94,37	**632**	94,37	**632**

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
for Article no.										
70 512 620 / 70 513 620	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**813**
70 512 625 / 70 513 625	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**813**
70 512 632 / 70 513 632	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**813**

MaxiLock-D – DSKN 75° – Toolholder with top clamping







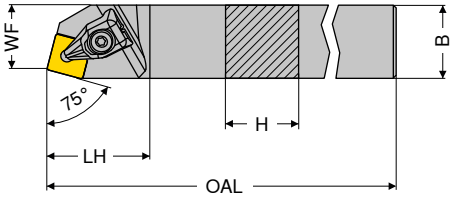
Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 525 ...		Right-hand 2A/24 Article no. 70 524 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DSKN R/L 2525 M12	25	25	153,3	150	28	32	4	SN.. 1204	87,97	625	87,97	625

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
70 525 625 / 70 524 625	23,77	824	T15 - IP	11,89 128	M4,5x12 - IP	2,98	820	7,89	813

MaxiLock-D – DSBN 75° – Toolholder with top clamping







Illustrations show right-hand versions

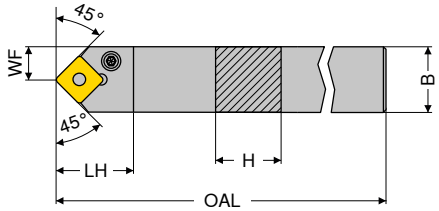
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 521 ...		Right-hand 2A/24 Article no. 70 520 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DSBN R/L 2020 K12	20	20	125	35	17	4	SN.. 1204	85,04	620	85,04	620
DSBN R/L 2525 M12	25	25	150	35	22	4	SN.. 1204	87,97	625	87,97	625
DSBN R/L 2525 M15	25	25	150	42	22	6,5	SN.. 1506	87,97	725	87,97	725
DSBN R/L 3232 P15	32	32	170	42	27	6,5	SN.. 1506	118,80	832	118,80	832
DSBN R/L 3232 P19	32	32	170	48	27	6,5	SN.. 1906	118,80	732	118,80	732
DSBN R/L 4040 S19	40	40	250	48	35	6,5	SN.. 1906	147,70	840	147,70	840
DSBN R/L 4040 S25	40	40	250	57	35	6,5	SN.. 2507 / SN.. 2509	147,70	940	147,70	940

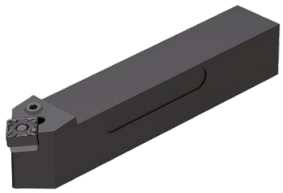
When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40100.

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
70 521 620 / 70 520 620	23,77	824	T15 - IP	11,89 128	M4,5x12 - IP	2,98	820	7,89	813
70 521 625 / 70 520 625	23,77	824	T15 - IP	11,89 128	M4,5x12 - IP	2,98	820	7,89	813
70 521 725 / 70 520 725	26,69	825	T20 - IP	12,54 129	M5x14 - IP	4,23	821	12,05	833
70 521 832 / 70 520 832	26,69	825	T20 - IP	12,54 129	M5x14 - IP	4,23	821	12,05	833
70 521 732 / 70 520 732	29,19	826	T20 - IP	12,54 129	M5x14 - IP	4,23	821	12,91	817
70 521 840 / 70 520 840	29,19	826	T20 - IP	12,54 129	M5x14 - IP	4,23	821	12,91	817
70 521 940 / 70 520 940	45,47	827	T25 - IP	14,50 130	M6x16 - IP	8,04	822	24,10	818

MaxiLock-N – PSDN 45° – Toolholder with lever clamping







ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Neutral 2A/24 Article no. 70 516 ...	
	mm	mm	mm	mm	mm	Nm		EUR	
PSDN N 1616 H09	16	16	100	21,0	8,3	3	SNM. 0903	76,33	016
PSDN N 2020 K12	20	20	125	27,6	10,3	4	SNM. 1204	85,04	020
PSDN N 2525 M12	25	25	150	27,6	12,8	4	SNM. 1204	87,97	025
PSDN N 3225 P19	32	25	170	40,4	12,5	8	SNM. 1906	94,37	03200
PSDN N 4040 S25	40	40	250	48,8	20,0	8	SNM. 2507 / 2509	147,70	04000

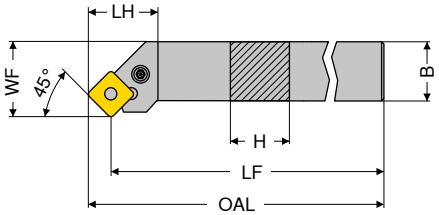
When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40200.

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 516 016	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,11	229
70 516 020	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 516 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 516 03200	SW4	2,57	396	1,76	392	1,22	395	19,11	386	3,80	389	19,21	383
70 516 04000	SW5	3,68	265	1,12	621	1,89	623	25,83	620	2,28	622	39,51	27600

9

MaxiLock-N – PSSN 45° – Toolholder with lever clamping







Illustrations show right-hand versions

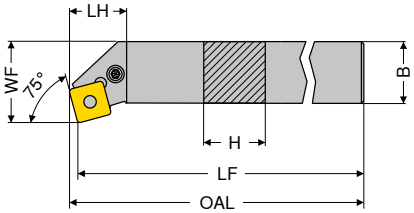
ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 513 ...		Right-hand 2A/24 Article no. 70 512 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PSSN R/L 1616 H09	16	16	106,7	100	21,2	20	3	SNM. 0903	76,33	016	76,33	016
PSSN R/L 2020 K12	20	20	134,0	125	29,3	25	4	SNM. 1204	85,04	020	85,04	020
PSSN R/L 2525 M12	25	25	159,0	150	29,3	32	4	SNM. 1204	87,97	025	87,97	025
PSSN R/L 3225 P12	32	25	179,0	170	32,0	32	4	SNM. 1204	94,37	032	94,37	032
PSSN R 2525 M15	25	25	161,2	150	29,3	32	4	SNM. 1506			87,97	125
PSSN R 3232 P15	32	32	181,2	170	32,0	40	4	SNM. 1506			118,80	132
PSSN R/L 3232 P19	32	32	183,5	170	40,2	40	8	SNM. 1906	118,80	232	118,80	232
PSSN R 4040 S25	40	40	268,0	250	48,8	50	8	SNM. 2507 / 2509			144,90	04000

When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40200.

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 512 016 / 70 513 016	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,11	229
70 512 020 / 70 513 020	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 512 025 / 70 513 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 512 032 / 70 513 032	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 512 125	SW3	2,45	176	1,12	391	1,22	394	12,48	385	3,80	388	12,48	382
70 512 132	SW3	2,45	176	1,12	391	1,22	394	12,48	385	3,80	388	12,48	382
70 512 232 / 70 513 232	SW4	2,57	396	1,76	392	1,22	395	19,11	386	3,80	389	19,21	383
70 512 04000	SW5	3,68	265	1,12	621	1,89	623	25,83	620	2,28	622	39,51	27600

MaxiLock-N – PSKN 75° – Toolholder with lever clamping







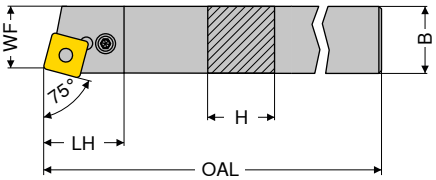
Illustrations show right-hand versions

ISO designation	H	LF	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 525 ...		Right-hand 2A/24 Article no. 70 524 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PSKN R/L 1616 H09	16	100	16	102,5	18,7	20	3	SNM. 0903	76,33	016	76,33	016
PSKN R/L 2020 K12	20	125	20	128,3	22,7	25	4	SNM. 1204	85,04	020	85,04	020
PSKN R/L 2525 M12	25	150	25	153,3	22,7	32	4	SNM. 1204	87,97	025	87,97	025

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
70 525 016 / 70 524 016	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,11	229
70 525 020 / 70 524 020	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 525 025 / 70 524 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230

MaxiLock-N – PSBN 75° – Toolholder with lever clamping







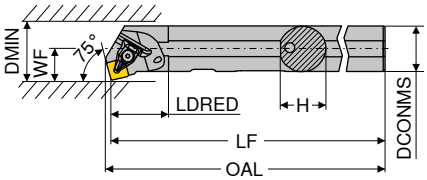
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 521 ...		Right-hand 2A/24 Article no. 70 520 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PSBN R/L 2020 K12	20	20	125	27,5	17	4	SNM. 1204	85,04	020	85,04	020
PSBN R/L 2525 M12	25	25	150	27,5	22	4	SNM. 1204	87,97	025	87,97	025
PSBN R/L 3225 P12	32	25	170	32,0	22	4	SNM. 1204	94,37	032	94,37	032
PSBN R/L 3232 P15	32	32	170	32,0	27	4	SNM. 1506	118,80	132	118,80	132
PSBN R/L 3232 P19	32	32	170	39,2	27	8	SNM. 1906	118,80	232	118,80	232
PSBN R/L 4040 S19	40	40	250	39,2	35	8	SNM. 1906	147,70	04000	147,70	04000
PSBN R/L 4040 S25	40	40	250	48,0	35	8	SNM. 2507 / 2509	147,70	14000	147,70	14000

When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40200.

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
70 520 020 / 70 521 020	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 520 025 / 70 521 025	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 520 032 / 70 521 032	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	6,11	230
70 520 132 / 70 521 132	SW3	2,45	176	1,12	391	1,22	394	12,48	385	3,80	388	12,48	382
70 520 232 / 70 521 232	SW4	2,57	396	1,76	392	1,22	395	19,11	386	3,80	389	19,21	383
70 520 04000 / 70 521 04000	SW4	2,57	396	1,76	392	1,22	395	19,11	386	3,80	389	19,21	383
70 520 14000 / 70 521 14000	SW5	3,68	265	1,12	621	1,89	623	25,83	620	2,28	622	39,51	27600

MaxiLock-D – DSKN 75° – Boring bar with top clamping



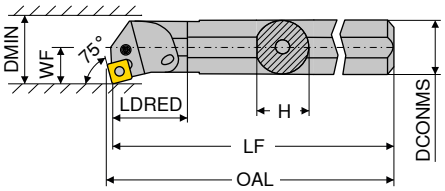


Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	LF mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 561 ... EUR		Right-hand 2A/24 Article no. 70 560 ... EUR	
A32S DSKN R/L 12	32	31	250	254,2	40	22	40	4	SN.. 1204	229,80	**832**	229,80	**832**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
70 561 832 / 70 560 832	23,77	**824**	T15 - IP 11,89	**128**	M4,5x12 - IP 2,98	**820**	7,89	**813**

MaxiLock-N – PSKN 75° – Boring bar with lever clamping





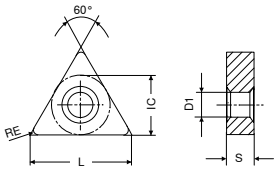
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	LF mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 561 ... EUR		Right-hand 2A/24 Article no. 70 560 ... EUR	
A25R PSKN R/L 12	25	23	200	203	15,5	17	32	4	SNM. 1204	222,20	**225**	222,20	**225**
A32S PSKN R/L 12	32	30	250	253	16,0	22	40	4	SNM. 1204	229,80	**232**	229,80	**232**
A40T PSKN R/L 12	40	38	300	303	23,0	27	50	4	SNM. 1204	256,00	**240**	256,00	**240**

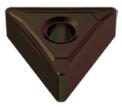
Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
70 561 225 / 70 560 225	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	6,11	**230**
70 561 232 / 70 560 232	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	4,28	**205**	6,11	**230**
70 561 240 / 70 560 240	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	6,11	**230**

TNMG / TNMA / TNMM

Designation	L	S	D1	IC
	mm	mm	mm	mm
TNMG 1103..	11,0	3,18	2,26	6,35
TNM. 1604..	16,5	4,76	3,81	9,52
TNM. 2204..	22,0	4,76	5,16	12,70



TNMG

	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-M50 CTCP115	-M50 CTCP125	-M50 CTCP135
	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-NM15 HCX1115	-NM15 HCX1125	-NM15 HCR1135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	M	M	M
	CERMET TNMG 1A/78	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08
ISO / RE mm	Article no. 76 149 ... EUR	Article no. 76 146 ... EUR	Article no. 76 146 ... EUR	Article no. 76 146 ... EUR	Article no. 76 138 ... EUR	Article no. 76 138 ... EUR	Article no. 76 138 ... EUR
110304EN 0,4		6,44 304	6,44 504	6,44 704			
110308EN 0,8		6,44 306	6,44 506	6,44 706			
160404EN 0,4	10,11 016	10,20 316	10,20 516	10,20 716	10,20 316	10,20 516	10,20 716
160408EN 0,8	10,11 018	10,20 318	10,20 518	10,20 718	10,20 318	10,20 518	10,20 718
160412EN 1,2	10,11 020	10,20 320	10,20 520	10,20 720	10,20 320	10,20 520	10,20 720
220408EN 0,8					13,76 330	13,76 530	13,76 730
220412EN 1,2					13,76 332	13,76 532	13,76 732
Steel	●	●	●	●	●	●	●
Stainless steel	o	o	o	o	o	o	o
Cast iron	o	o	o		o	o	
Non ferrous metals							
Heat resistant alloys				o			o

TNMG

		-M70 CTCK110	-M70 CTCK120	-M70 CTCP115	-M70 CTCP125	-M70 CTCP135	CTCP125	CTCP135
		-NM19 DCX3110	-NM19 HCF3120	-NM19 HCX1115	-NM19 HCX1125	-NM19 HCR1135	HCX1125	HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		TNMG	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE mm	Article no. 70 155 ... EUR	Article no. 70 155 ... EUR	Article no. 76 155 ... EUR	Article no. 76 155 ... EUR	Article no. 76 155 ... EUR	Article no. 76 142 ... EUR	Article no. 76 142 ... EUR
110302EN	0,2							6,44 702
160404ER	0,4						10,20 516	10,20 716
160408EL	0,8						10,20 518	
160408EN	0,8	10,20 018	10,20 518	10,20 318	10,20 518	10,20 718		
160408ER	0,8						10,20 517	10,20 717
160412EN	1,2	10,20 020	10,20 520	10,20 320	10,20 520	10,20 720		
220404EN	0,4				13,76 528			
220408EN	0,8	13,76 030	13,76 530	13,76 330	13,76 530	13,76 730		
220412EN	1,2	13,76 032	13,76 532	13,76 332	13,76 532	13,76 732		
220416EN	1,6	13,76 034	13,76 534	13,76 334	13,76 534	13,76 734		
Steel		●	●	●	●	●	●	●
Stainless steel		○		○	○	○	○	○
Cast iron		●	●	○	○		○	
Non ferrous metals								
Heat resistant alloys						○		○

9

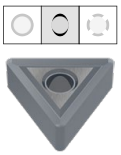
TNMA / TNMM

		CTCK110	CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135	-R58 CTCP115	-R58 CTCP125
		DCX3110	HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135	-NR17 HCX1115	-NR17 HCX1125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		R	M	R	R	R	R	R
		TNMA	TNMA	TNMM	TNMM	TNMM	TNMM	TNMM
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE mm	Article no. 70 134 ... EUR	Article no. 70 134 ... EUR	Article no. 76 154 ... EUR	Article no. 76 154 ... EUR	Article no. 76 154 ... EUR	Article no. 76 152 ... EUR	Article no. 76 152 ... EUR
160408EN	0,8	10,20 018	10,20 518					
160412EN	1,2	10,20 020	10,20 520					
160416EN	1,6	10,20 022	10,20 522					
220408EN	0,8	13,76 030	13,76 530					
220412EN	1,2	13,76 032	13,76 532				13,76 332	13,76 532
220416EN	1,6	13,76 034	13,76 534	13,76 334	13,76 534	13,76 734		
Steel				●	●	●	●	●
Stainless steel				○	○	○	○	○
Cast iron		●	●	○	○		○	○
Non ferrous metals								
Heat resistant alloys						○		

TNMM / TNMG

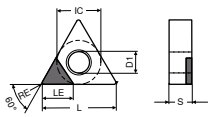
		-R58 CTCP135		-F30 CTPM125		-M30 CTPM125		-M42 CTC2135		-M60 CTPM125		-M70 CTC2135		-M34 CTP5115	
		-NR17 HCR1135		-NF23 HCN2125		-NM23 HCN2125		-M42 CWN2135		-NM26 HCN2125		-NM19 CWN2135		-M34 HCN5115	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN				DRAGONSKIN	
															
		R		F		M		M		M		M		M	
		TNMM		TNMG		TNMG		TNMG		TNMG		TNMG		TNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE mm	Article no. 76 152 ... EUR		Article no. 75 019 ... EUR		Article no. 75 020 ... EUR		Article no. 70 148 ... EUR		Article no. 75 021 ... EUR		Article no. 70 155 ... EUR		Article no. 75 006 ... EUR	
160404EN	0,4			10,20	216			10,11	404						
160408EN	0,8			10,20	218	10,20	218	10,11	408	10,20	218	10,11	418	10,11	516
160412EN	1,2					10,20	220			10,20	220				
220404EN	0,4													14,55	528
220408EN	0,8													14,55	530
220412EN	1,2	13,76	732												
220416EN	1,6													14,55	534
Steel		●		○		○		○		○		○			
Stainless steel		○		●		●		●		●		●		○	
Cast iron															
Non ferrous metals															
Heat resistant alloys		○				○		●		○		●		●	

TNMG

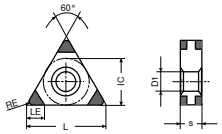
		-M42 CTP2120		-M52 CTP2120	
		-M42 CCN2120		-M52 CCN2120	
					
		M		M	
		TNMG		TNMG	
		1A/08		1A/08	
ISO	RE mm	Article no. 70 148 ... EUR		Article no. 70 152 ... EUR	
160404EN	0,4			10,11	604
160408EN	0,8	10,11	608	10,11	608
Steel					
Stainless steel		○		○	
Cast iron		○		○	
Non ferrous metals		○		○	
Heat resistant alloys		●		●	

TNGA

Designation	L	S	D1	IC
	mm	mm	mm	mm
TNGA 1103..	11,0	3,18	2,26	6,35
TNGA 1604..	16,5	4,76	3,81	9,52

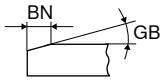


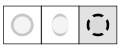
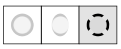
-A



-M (-6SC)

TNGA



	-A CTBH21U	-M CTBH20C	-A CTBH40U	-M CTBH40C
	PBC25	-6SC PBC25-S	PBC40	-6SC PBC40-S
				
				
	F	F	F	F
	CBN TNGA	CBN TNGA	CBN TNGA	CBN TNGA
	Y0	Y0	Y0	Y0
ISO	Article no. 71 108 ...	Article no. 71 404 ...	Article no. 71 108 ...	Article no. 71 404 ...
	EUR	EUR	EUR	EUR

ISO	RE mm	GB °	BN mm	LE mm	-A CTBH21U PBC25 Article no. 71 108 ... EUR		-M CTBH20C -6SC PBC25-S Article no. 71 404 ... EUR		-A CTBH40U PBC40 Article no. 71 108 ... EUR		-M CTBH40C -6SC PBC40-S Article no. 71 404 ... EUR	
110304TN	0,4	20	0,14	2,8	34,44	500						
110308FN	0,8			2,5					34,44	802 [1]		
110308TN	0,8	20	0,14	2,5	34,44	502						
160404FN	0,4			3,5	32,43	404 [1]			32,43	804 [1]		
160404TN	0,4	15	0,09	2,8			93,26	222				
160404SN	0,4	20	0,09	2,8							93,26	332
160404SN	0,4	20	0,11	2,8			93,26	242			93,26	342
160404TN	0,4	20	0,14	3,5	32,43	504						
160404SN	0,4	25	0,11	2,8							93,26	352
160404TN	0,4	25	0,11	2,8			93,26	252				
160404TN	0,4	25	0,12	3,5					32,43	904		
160404FN	0,4			2,8			93,26	212				
160404SN	0,4	25	0,13	2,8			93,26	262				
160404SN	0,4	30	0,14	2,8							93,26	372
160404SN	0,4	35	0,14	2,8							93,26	382
160408TN	0,8	15	0,09	2,5			93,26	224				
160408SN	0,8	15	0,09	2,5							93,26	324
160408SN	0,8	20	0,09	2,5							93,26	334
160408TN	0,8	20	0,09	2,5			93,26	234				
160408SN	0,8	20	0,11	2,5			93,26	244			93,26	344
160408TN	0,8	20	0,14	3,0	32,43	506						
160408SN	0,8	25	0,11	2,5							93,26	354
160408TN	0,8	25	0,11	2,5			93,26	254				
160408TN	0,8	25	0,12	3,0					32,43	906		
160408SN	0,8	25	0,13	2,5			93,26	264			93,26	364
160408SN	0,8	30	0,14	2,5							93,26	374
160408SN	0,8	35	0,14	2,5							93,26	384
160408FN	0,8			2,5			93,26	214				
160408FN	0,8			3,0	32,43	406 [1]						
160408EN	0,8			2,5							93,26	314
160412TN	1,2	15	0,09	2,2			93,26	226				
160412SN	1,2	20	0,09	2,2							93,26	336
160412SN	1,2	20	0,11	2,2			93,26	246			93,26	346
160412SN	1,2	25	0,11	2,2							93,26	356
160412TN	1,2	25	0,11	2,2			93,26	256				
160412SN	1,2	25	0,13	2,2			93,26	266			93,26	366
160412SN	1,2	30	0,14	2,2							93,26	376
160412SN	1,2	35	0,14	2,2							93,26	386
160412FN	1,2			2,2			93,26	216				

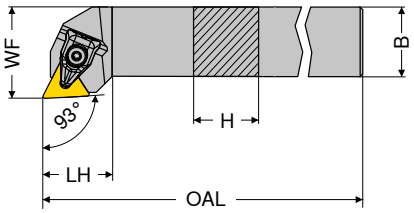
Cast iron				
Sintered steels				
Heat resistant alloys				
hardened < 45 HRC				
hardened 46–55 HRC	●	●	●	●
hardened 56–60 HRC	●	●	●	●
hardened 61–65 HRC			●	●

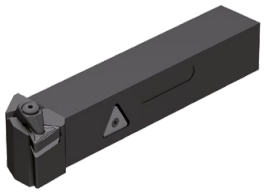
1) Machining to 60 HRC

9

MaxiLock-D – DTJN 93° – Toolholder with top clamping







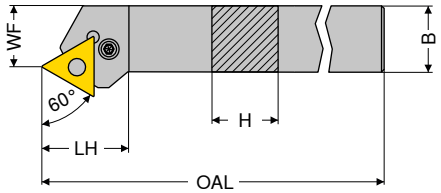
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 591 ...		Right-hand 2A/24 Article no. 70 590 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DTJN R/L 2020 K16	20	20	125	23	25	2	TNM. 1604	85,04	**820**	85,04	**820**
DTJN R/L 2525 M16	25	25	150	24	32	2	TNM. 1604	87,97	**825**	87,97	**825**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
70 590 820 / 70 591 820	24,10	**823**	T09 - IP 11,24	**126**	M3x7 - IP 3,14	**819**	6,94	**847**
70 590 825 / 70 591 825	24,10	**823**	T09 - IP 11,24	**126**	M3x7 - IP 3,14	**819**	6,94	**847**

MaxiLock-N – PTTN 60° – Toolholder with lever clamping







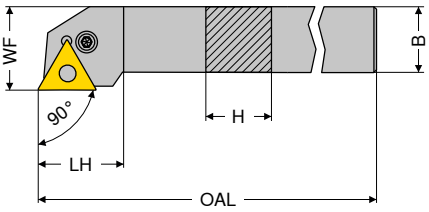
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 529 ...		Right-hand 2A/24 Article no. 70 528 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PTTN R/L 2020 K16	20	20	125	25,9	17	3	TNM. 1604	85,04	**020**	85,04	**020**
PTTN R/L 2525 M22	25	25	150	32,7	22	4	TNM. 2204	87,97	**025**	87,97	**025**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 529 020 / 70 528 020	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	12,48	**185**	3,19	**208**	6,94	**225**
70 529 025 / 70 528 025	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	9,93	**226**

MaxiLock-N – PTGN 90° – Toolholder with lever clamping







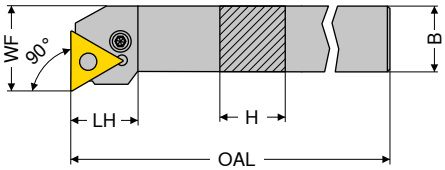
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 533 ...		Right-hand 2A/24 Article no. 70 532 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PTGN R/L 1616 H16	16	16	100	20	20	3	TNM. 1604	76,33	016	76,33	016
PTGN R/L 2020 K16	20	20	125	20	25	3	TNM. 1604	85,04	020	85,04	020
PTGN R/L 2525 M16	25	25	150	22	32	3	TNM. 1604	87,97	025	87,97	025
PTGN R/L 3225 P16	32	25	170	22	32	3	TNM. 1604	94,37	032	94,37	032
PTGN R/L 2525 M22	25	25	150	29	32	4	TNM. 2204	87,97	125	87,97	125
PTGN R/L 3232 P22	32	32	170	29	40	4	TNM. 2204	118,80	132	118,80	132

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 532 016 / 70 533 016	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 532 020 / 70 533 020	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 532 025 / 70 533 025	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 532 032 / 70 533 032	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 532 125 / 70 533 125	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	9,93	226
70 532 132 / 70 533 132	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	9,93	226

MaxiLock-N – PTFN 90° – Toolholder with lever clamping







Illustrations show right-hand versions

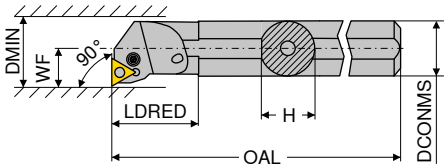
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 535 ...		Right-hand 2A/24 Article no. 70 534 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PTFN R/L 1616 H16	16	16	100	19,7	20	3	TNM. 1604	76,33	016	76,33	016
PTFN R/L 2020 K16	20	20	125	20,2	25	3	TNM. 1604	85,04	020	85,04	020
PTFN R/L 2525 M16	25	25	150	20,2	32	3	TNM. 1604	87,97	025	87,97	025
PTFN R/L 2525 M22	25	25	150	25,2	32	4	TNM. 2204	87,97	125	87,97	125
PTFN R/L 3225 P22	32	25	170	25,2	32	4	TNM. 2204	94,37	132	94,37	132

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 534 016 / 70 535 016	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 534 020 / 70 535 020	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 534 025 / 70 535 025	SW2,5	2,45	175	1,76	197	1,22	191	12,48	185	3,19	208	6,94	225
70 534 125 / 70 535 125	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	9,93	226
70 534 132 / 70 535 132	SW3	2,45	176	1,76	198	1,22	192	12,59	187	3,50	209	9,93	226

MaxiLock-N – PTFN 90° – Boring bar with lever clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant







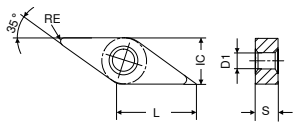
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 565 ... EUR		Right-hand 2A/24 Article no. 70 564 ... EUR	
A16M PTFN R/L 11	16	15,0	150	14,0	11	20	2,2	TNM. 1103	147,70	**216**	147,70	**216**
A20Q PTFN R/L 11	20	18,5	180	14,0	13	25	2,2	TNM. 1103	199,40	**220**	199,40	**220**
A25R PTFN R/L 16	25	23,0	200	17,5	17	32	3	TNM. 1604	222,20	**225**	222,20	**225**
A32S PTFN R/L 16	32	30,0	250	18,0	22	40	3	TNM. 1604	229,80	**232**	229,80	**232**
A40T PTFN R/L 22	40	38,0	300	27,0	27	50	4	TNM. 2204	256,00	**240**	256,00	**240**
S50W PTFN R 22	50	47,0	450	35,0	35	63	4	TNM. 2204			316,80	**050**

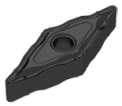
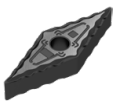
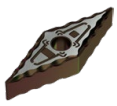
Spare parts for Article no.	2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat T Article no. 70 950 ... EUR	
70 564 216 / 70 565 216	2,45	**177**					12,59	**184**	2,12	**207**		
70 564 220 / 70 565 220	2,45	**177**					12,59	**184**	2,12	**207**		
70 564 225 / 70 565 225	2,45	**175**	1,76	**197**	1,22	**191**	12,48	**185**	3,19	**208**	6,94	**225**
70 564 232 / 70 565 232	2,45	**175**	1,76	**197**	1,22	**191**	12,48	**185**	3,19	**208**	6,94	**225**
70 564 240 / 70 565 240	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	9,93	**226**
70 564 050	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	9,93	**226**

VNMG / VNGP

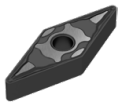
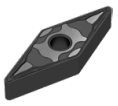
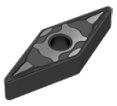
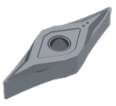
Designation	L	S	D1	IC
	mm	mm	mm	mm
VN.. 1604..	16,6	4,76	3,81	9,52



VNMG

	-F40 CTCP125	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-XU CTCP115	-XU CTCP125	-M40 CTCP125
	-F40 HCX1125	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-XU HCX1115	-XU HCX1125	-M40 HCX1125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	M	M	M
	VNMG	VNMG	VNMG	VNMG	VNMG	VNMG	VNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 000 ... EUR	Article no. 76 156 ... EUR	Article no. 76 156 ... EUR	Article no. 76 156 ... EUR	Article no. 76 294 ... EUR	Article no. 76 294 ... EUR	Article no. 76 001 ... EUR
160404EN 0,4	20,58 516	20,58 316	20,58 516	20,58 716	20,54 316	20,54 516	20,58 516
160408EN 0,8	20,58 518	20,58 318	20,58 518	20,58 718	20,54 318	20,54 518	20,58 518
Steel	●	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○	○
Cast iron	○	○	○		○	○	○
Non ferrous metals							
Heat resistant alloys				○			

VNMG / VNGP

	-M50 CTCK120	-M50 CTCP115	-M50 CTCP125	-F30 CTPM125	-M30 CTPM125	-F32 CTP2120	-M34 CTP5110
	-NM15 HCF3120	-NM15 HCX1115	-NM15 HCX1125	-NF23 HCN2125	-NM23 HCN2125	-F32 CCN2120	-M34 HCN5110
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
							
	M	M	M	F	M	F	M
	VNMG	VNMG	VNMG	VNMG	VNMG	VNGP	VNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 70 131 ... EUR	Article no. 76 131 ... EUR	Article no. 76 131 ... EUR	Article no. 75 022 ... EUR	Article no. 75 023 ... EUR	Article no. 70 167 ... EUR	Article no. 75 009 ... EUR
160402FN 0,2						27,41 602	
160404EN 0,4		20,58 316	20,58 516	20,58 216			19,57 416
160404FN 0,4						27,41 604	
160408EN 0,8	20,58 518	20,58 318	20,58 518	20,58 218	20,58 218		19,57 418
160412EN 1,2	20,58 520	20,58 320	20,58 520				19,57 420
Steel	●	●	●	○	○		
Stainless steel		○	○	●	●	●	○
Cast iron	●	○	○			○	
Non ferrous metals						○	
Heat resistant alloys					○	●	●

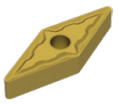
9

VNMG

-M34 CTP5115

-M34 HCN5115

DRAGONSKIN



M

VNMG

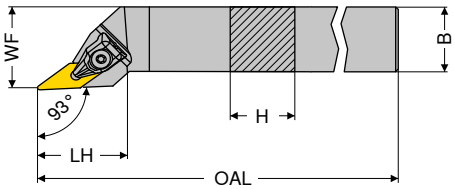
1A/08

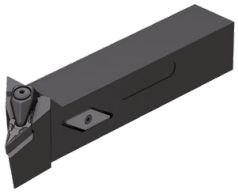
ISO	RE mm	Article no. 75 009 ...	EUR	
160404EN	0,4		19,57	**516**
160408EN	0,8		19,57	**518**
160412EN	1,2		19,57	**520**

Steel	
Stainless steel	○
Cast iron	
Non ferrous metals	
Heat resistant alloys	●

MaxiLock-D – DVJN 93° – Toolholder with top clamping







Illustrations show right-hand versions

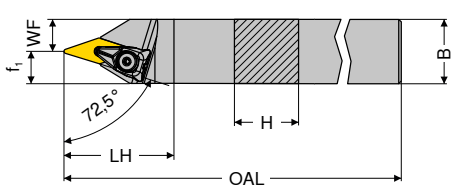
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 503 ...		Right-hand 2A/24 Article no. 70 502 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DVJN R/L 2020 K16	20	20	125	39	25	2	VN.. 1604	97,83	620	97,83	620
DVJN R/L 2525 M16	25	25	150	39	32	2	VN.. 1604	103,80	725	103,80	725

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
70 502 620 / 70 503 620	28,76	835	T09 - IP 11,24	126	M3x7 - IP 3,14	819	5,59	806
70 502 725 / 70 503 725	28,76	835	T09 - IP 11,24	126	M3x7 - IP 3,14	819	5,59	806

MaxiLock-D – DVVN 72.5° – Toolholder with top clamping





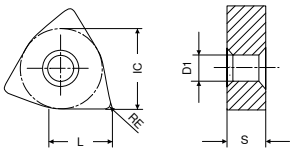


ISO designation	H	B	OAL	LH	WF	f_1	torque moment	Insert	Neutral 2A/24 Article no. 70 506 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR	
DVVN N 2020 K16	20	20	125	43	7,5	12,5	2	VN.. 1604	97,83	620
DVVN N 2525 M16	25	25	150	43	12,5	12,5	2	VN.. 1604	103,80	625

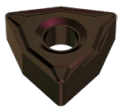
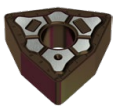
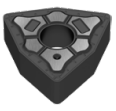
Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
70 506 620	28,76	835	T09 - IP 11,24	126	M3x7 - IP 3,14	819	5,59	806
70 506 625	28,76	835	T09 - IP 11,24	126	M3x7 - IP 3,14	819	5,59	806

WNMG / WNMA

Designation	L	S	D1	IC
	mm	mm	mm	mm
WNMG 0604..	6,5	4,76	3,81	9,52
WNM. 0804..	8,6	4,76	5,16	12,70

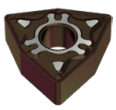


WNMG

	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-TFQ CTEP110	-TFQ CTCP115	-TFQ CTCP125
	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-TFQ DCC1110	-TFQ HCX1115	-TFQ HCX1125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET WNMG 1A/78	WNMG 1A/08	WNMG 1A/08	WNMG 1A/08	CERMET WNMG 1A/78	WNMG 1A/08	WNMG 1A/08

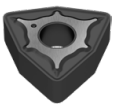
ISO	RE	Article no. 76 171 ...		Article no. 76 157 ...		Article no. 76 157 ...		Article no. 76 157 ...		Article no. 76 177 ...		Article no. 76 177 ...		Article no. 76 177 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
060404EN	0,4	9,68	004	9,95	304	9,95	504	9,95	704			11,52	304	11,52	514
060408EN	0,8	9,68	006	9,95	306	9,95	506	9,95	706	11,52	006	11,52	306	11,52	506
080404EN	0,4			12,53	316	12,53	516	12,53	716	14,42	016				
080408EN	0,8	12,53	018	12,53	318	12,53	518	12,53	718	14,42	018	14,42	318	14,42	518
080412EN	1,2			12,53	320	12,53	520	12,53	720			14,42	320	14,42	520
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○		○		○		○		○		○	
Cast iron		○		○		○				○		○		○	
Non ferrous metals															
Heat resistant alloys								○							

WNMG

	-XU CTCP115	-XU CTCP125	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115	-M50 CTCP125	-M50 CTCP135
	-XU HCX1115	-XU HCX1125	-NM15 DCX3110	-NM15 HCF3120	-NM15 HCX1115	-NM15 HCX1125	-NM15 HCR1135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	M	M	M	M	M	M	M
	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO RE mm	Article no. 76 295 ... EUR	Article no. 76 295 ... EUR	Article no. 70 139 ... EUR	Article no. 70 139 ... EUR	Article no. 76 139 ... EUR	Article no. 76 139 ... EUR	Article no. 76 139 ... EUR
060404EN 0,4					9,95 304	9,95 504	9,95 704
060408EN 0,8					9,95 306	9,95 506	9,95 706
060412EN 1,2					9,95 308	9,95 508	9,95 708
080404EN 0,4	12,54 316	12,54 516			12,53 316	12,53 516	12,53 716
080408EN 0,8	12,54 318	12,54 518	12,53 018	12,53 518	12,53 318	12,53 518	12,53 718
080412EN 1,2	12,54 320	12,54 520	12,53 020	12,53 520	12,53 320	12,53 520	12,53 720
080416EN 1,6					12,53 322	12,53 522	12,53 722
Steel	●	●	●	●	●	●	●
Stainless steel	○	○	○		○	○	○
Cast iron	○	○	●	●	○	○	
Non ferrous metals							
Heat resistant alloys							○

9

WNMG

	-TMQ CTCP115	-TMQ CTCP125	-M70 CTCK110	-M70 CTCK120	-M70 CTCP115	-M70 CTCP125	-M70 CTCP135
	-TMQ HCX1115	-TMQ HCX1125	-NM19 DCX3110	-NM19 HCF3120	-NM19 HCX1115	-NM19 HCX1125	-NM19 HCR1135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	M	M	M	M	M	M	M
	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO RE mm	Article no. 76 198 ... EUR	Article no. 76 198 ... EUR	Article no. 70 273 ... EUR	Article no. 70 273 ... EUR	Article no. 76 273 ... EUR	Article no. 76 273 ... EUR	Article no. 76 273 ... EUR
060408EN 0,8					9,95 306	9,95 506	9,95 706
060412EN 1,2					9,95 308	9,95 508	9,95 708
080408EN 0,8	14,42 31800	14,42 518	12,53 018	12,53 518	12,53 318	12,53 518	12,53 718
080412EN 1,2	14,42 320	14,42 520	12,53 020	12,53 520	12,53 320	12,53 520	12,53 720
080416EN 1,6			12,53 022	12,53 522	12,53 322	12,53 522	12,53 722
Steel	●	●	●	●	●	●	●
Stainless steel	○	○	○		○	○	○
Cast iron	○	○	●	●	○	○	
Non ferrous metals							
Heat resistant alloys							○

WNMA / WNMG

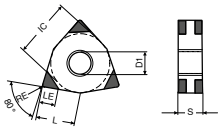
		CTCK110		CTCK120		-F30 CTPM125		-M30 CTPM125		-M42 CTC2135		-M60 CTPM125		-M70 CTC2135	
		DCX3110		HCF3120		-NF23 HCN2125		-NM23 HCN2125		-M42 CWN2135		-NM26 HCN2125		-NM19 CWN2135	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN			
		R		R		F		M		M		M		M	
		WNMA		WNMA		WNMG		WNMG		WNMG		WNMG		WNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 70 169 ...		Article no. 70 169 ...		Article no. 75 024 ...		Article no. 75 025 ...		Article no. 70 178 ...		Article no. 75 026 ...		Article no. 70 273 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
060404EN	0,4					9,95	204			9,68	400				
060408EN	0,8					9,95	206	9,95	206	9,68	402	9,95	206		
060412EN	1,2							9,95	208			9,95	208		
080404EN	0,4					12,53	216			12,53	404				
080408EN	0,8	12,53	018	12,53	518	12,53	218	12,53	218	12,53	406	12,53	218	12,53	418
080412EN	1,2	12,53	020	12,53	520			12,53	220	12,53	408	12,53	220		
080416EN	1,6	12,53	022	12,53	522										
Steel						○		○		○		○		○	
Stainless steel						●		●		●		●		●	
Cast iron		●		●											
Non ferrous metals															
Heat resistant alloys								○		●		○		●	

WNMG

		-M34 CTP5110		-M34 CTP5115		-M42 CTP2120		-M52 CTP2120	
		-M34 HCN5110		-M34 HCN5115		-M42 CCN2120		-M52 CCN2120	
		DRAGONSKIN		DRAGONSKIN					
		M		M		M		M	
		WNMG		WNMG		WNMG		WNMG	
		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 75 008 ...		Article no. 75 008 ...		Article no. 70 178 ...		Article no. 70 179 ...	
	mm	EUR		EUR		EUR		EUR	
060404EN	0,4							9,68	604
060408EN	0,8							9,68	608
080404EN	0,4							12,53	612
080408EN	0,8	13,09	418	13,09	518	12,53	608	12,53	614
080412EN	1,2	13,09	420	13,09	520				
Steel									
Stainless steel		○		○		○		○	
Cast iron						○		○	
Non ferrous metals						○		○	
Heat resistant alloys		●		●		●		●	

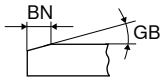
WNGA

Designation	L	S	D1	IC
	mm	mm	mm	mm
WNGA 0804..	8,5	4,76	5,13	12,7



-M (-6SC)

WNGA



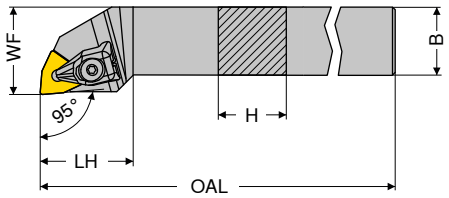
	-M CTBS20C	-M CTBH20C	-M CTBH40C
	-6SC PBC15-S	-6SC PBC25-S	-6SC PBC40-S
			
	F	F	F
	CBN WNGA	CBN WNGA	CBN WNGA
	Y0	Y0	Y0
ISO	Article no. 71 405 ...	Article no. 71 405 ...	Article no. 71 405 ...
	EUR	EUR	EUR
080404SN	81,39 122		
080404SN	81,39 132		
080404SN	81,39 152		81,39 332
080404SN		81,39 242	
080404SN			81,39 352
080404SN		81,39 262	
080404SN			81,39 372
080408SN	81,39 124		
080408SN	81,39 134		
080408SN	81,39 154		81,39 334
080408SN		81,39 244	
080408SN			81,39 354
080408SN		81,39 264	81,39 364
080408SN	81,39 174		
080408SN		81,39 274	81,39 376

Cast iron	●		
Sintered steels	●		
Heat resistant alloys	●		
hardened < 45 HRC			
hardened 46–55 HRC		●	●
hardened 56–60 HRC		●	●
hardened 61–65 HRC			●

9

MaxiLock-D – DWLN 95° – Toolholder with top clamping







Illustrations show right-hand versions

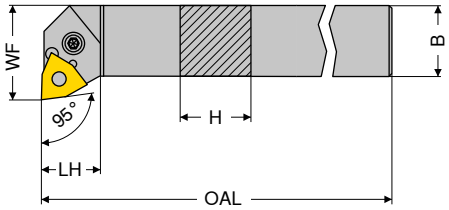
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 543 ...		Right-hand 2A/24 Article no. 70 542 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
DWLN R/L 1616 H06	16	16	100	25	20	2	WN.. 0604	76,33	**716**	76,33	**716**
DWLN R/L 2020 K06	20	20	125	27	25	2	WN.. 0604	85,04	**720**	85,04	**720**
DWLN R/L 2525 M06	25	25	150	27	32	2	WN.. 0604	87,97	**725**	87,97	**725**
DWLN R/L 2020 K08	20	20	125	34	25	4	WN.. 0804	85,04	**620**	85,04	**620**
DWLN R/L 2525 M08	25	25	150	34	32	4	WN.. 0804	87,97	**625**	87,97	**625**

Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat W Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
70 543 716 / 70 542 716	24,10	**823**	T09 - IP	11,24 **126**	M3x7 - IP	3,14	**819**	3,40 **807**
70 543 720 / 70 542 720	24,10	**823**	T09 - IP	11,24 **126**	M3x7 - IP	3,14	**819**	3,40 **807**
70 543 725 / 70 542 725	24,10	**823**	T09 - IP	11,24 **126**	M3x7 - IP	3,14	**819**	3,40 **807**
70 543 620 / 70 542 620	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98	**820**	9,93 **812**
70 543 625 / 70 542 625	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98	**820**	9,93 **812**

MaxiLock-N – PWLN 95° – Toolholder with lever clamping





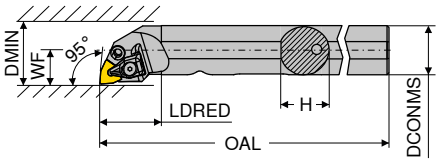


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 543 ...		Right-hand 2A/24 Article no. 70 542 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PWLN R/L 1616 H06	16	16	100	20	22,5	3	WNMG 0604	76,33	**116**	76,33	**116**
PWLN R/L 2020 K06	20	20	125	26	25,0	3	WNMG 0604	85,04	**120**	85,04	**120**
PWLN R/L 2525 M06	25	25	150	19	32,0	3	WNMG 0604	87,97	**125**	87,97	**125**
PWLN R/L 2020 K08	20	20	125	22	25,0	4	WNMG 0804	85,04	**020**	85,04	**020**
PWLN R/L 2525 M08	25	25	150	22	32,0	4	WNMG 0804	87,97	**025**	87,97	**025**
PWLN R/L 3225 P08	32	25	170	22	32,0	4	WNMG 0804	94,37	**032**	94,37	**032**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat W Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR		EUR	
70 542 116 / 70 543 116	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	12,48	**185**	3,19	**208**	7,21	**127**
70 542 120 / 70 543 120	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	12,48	**185**	3,19	**208**	7,21	**127**
70 542 125 / 70 543 125	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	12,48	**185**	3,19	**208**	7,21	**127**
70 542 020 / 70 543 020	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**
70 542 025 / 70 543 025	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**
70 542 032 / 70 543 032	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**

MaxiLock-D – DWLN 95° – Boring bar with top clamping





Illustrations show right-hand versions

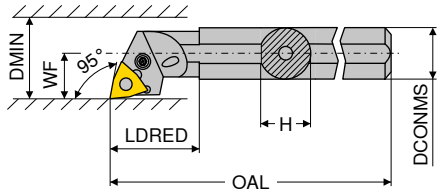
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 573 ... EUR		Right-hand 2A/24 Article no. 70 572 ... EUR	
A25R DWLN R/L 06	25	24	200	32	17	32	2	WN.. 0604	222,20	**725**	222,20	**725**
A32S DWLN R/L 08	32	31	250	40	22	40	4	WN.. 0804	229,80	**732**	229,80	**732**
A40T DWLN R 08	40	39	300	45	27	50	4	WN.. 0804			256,00	**640**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Hydrant Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat W Article no. 70 950 ... EUR	
70 572 725 / 70 573 725	24,10	**823**	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**	20,84	**834**	3,40	**807**
70 572 732 / 70 573 732	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	20,84	**834**	9,93	**812**
70 572 640	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	20,84	**834**	9,93	**812**

9

MaxiLock-N – PWLN 95° – Boring bar with lever clamping





Illustrations show right-hand versions

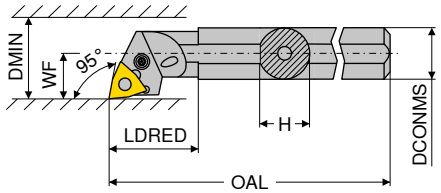
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 573 ... EUR		Right-hand 2A/24 Article no. 70 572 ... EUR	
A16M PWLN R/L 06	16	15	150	20	11	20	3	WNMG 0604	180,50	**116**	180,50	**116**
A20Q PWLN R/L 06-1	20	19	180	30	13	25	3	WNMG 0604	199,40	**121**	199,40	**121**
A25R PWLN R/L 06	25	23	200	25	17	32	3	WNMG 0604	222,20	**125**	222,20	**125**
A32S PWLN R/L 06	32	30	250	50	22	40	3	WNMG 0604	229,80	**132**	229,80	**132**
A25R PWLN R/L 08	25	23	200	40	17	31	4	WNMG 0804	222,30	**225**	222,30	**225**
A32S PWLN R/L 08	32	30	250	50	22	40	4	WNMG 0804	229,80	**032**	229,80	**032**
A40T PWLN R/L 08	40	39	300	60	27	50	4	WNMG 0804	256,00	**040**	256,00	**040**

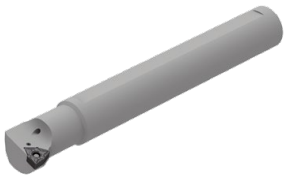
Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat W Article no. 70 950 ... EUR	
70 572 116 / 70 573 116	SW2	2,45	**177**					14,97	**129**	4,23	**217**		
70 572 121 / 70 573 121	SW2	2,45	**177**					14,97	**129**	4,23	**217**		
70 572 125 / 70 573 125	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	12,48	**185**	3,19	**208**	7,21	**127**
70 572 132 / 70 573 132	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	12,48	**185**	3,19	**208**	7,21	**127**
70 572 225 / 70 573 225	SW3	2,45	**176**					12,59	**187**	4,28	**205**		
70 572 032 / 70 573 032	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**
70 572 040 / 70 573 040	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**

MaxiLock-N – PWLN 95° – Boring bar with lever clamping

▲ with carbide core







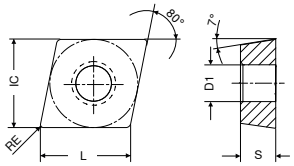
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 567 ... EUR		Right-hand 2A Article no. 70 566 ... EUR	
E-A16M PWLN R/L 06	16	15	150	24	11	20	3	WNMG 0604	640,40	**016**	640,40	**016**
E-A20Q PWLN R/L 06	20	18	180	29	13	27	3	WNMG 0604	684,60	**020**	684,60	**020**
E-A25R PWLN R/L 06	25	23	200	40	17	31	3	WNMG 0604	709,60	**025**	709,60	**025**
E-A25R PWLN R/L 08	25	23	200	40	17	31	4	WNMG 0804	709,60	**125**	709,60	**125**
E-A32S PWLN R/L 08	32	30	250	50	22	39	4	WNMG 0804	936,70	**032**	936,70	**032**
E-A40T PWLN R/L 08	40	38	300	60	27	48	4	WNMG 0804	1.118,00	**040**	1.118,00	**040**

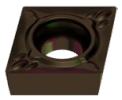
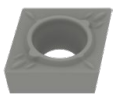
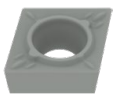
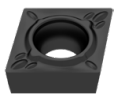
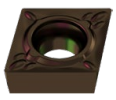
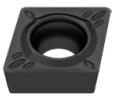
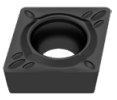
Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat W Article no. 70 950 ... EUR	
70 566 016 / 70 567 016	SW2	2,45	**177**					14,97	**129**	4,23	**217**		
70 566 020 / 70 567 020	SW2	2,45	**177**					14,97	**129**	4,23	**217**		
70 566 025 / 70 567 025	SW2,5	2,45	**175**	2,06	**122**	1,22	**191**	12,48	**185**	3,19	**208**	7,21	**127**
70 566 125 / 70 567 125	SW3	2,45	**176**					12,59	**187**	3,50	**209**		
70 566 032 / 70 567 032	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**
70 566 040 / 70 567 040	SW3	2,45	**176**	1,76	**198**	1,22	**192**	12,59	**187**	3,50	**209**	8,72	**235**

CCGT / CCMT / CCXT

Designation	L	S	D1	IC
	mm	mm	mm	mm
CC.T 0602..	6,4	2,38	2,8	6,35
CC.T 09T3..	9,7	3,97	4,4	9,52
CC.T 1204..	12,9	4,76	5,5	12,70

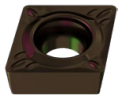
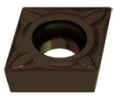
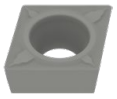
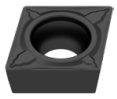
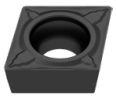
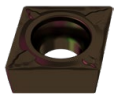
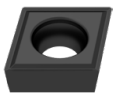


CCGT / CCMT

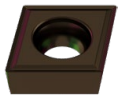
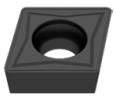
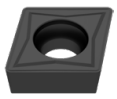
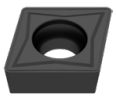
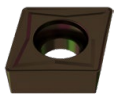
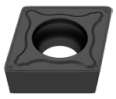
	-CF05 CTEP110	-SF TCM10	-SF TCM407	-SF CTCP125	-SF CTCP135	-SF CTCP115	-SF CTCP125
	-PF14 DCC1110	-ZF CWC10	-ZF CWC407	-ZF HCX1125	-ZF HCR1135	-ZF HCX1115	-ZF HCX1125
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET CCGT 1A/78	CERMET CCGT 1A/78	CERMET CCGT 1A/78	CCGT 1A/08	CCGT 1A/08	CCMT 1A/08	CCMT 1A/08
ISO / RE mm	Article no. 76 247 ... EUR	Article no. 70 251 ... EUR	Article no. 70 251 ... EUR	Article no. 76 251 ... EUR	Article no. 76 251 ... EUR	Article no. 76 253 ... EUR	Article no. 76 253 ... EUR
060202EN 0,2	13,86 002	13,43 900	13,43 850	13,86 502	13,86 702		
060204EN 0,4	13,86 004	13,43 902	13,43 852			7,78 304	7,78 504
09T302EN 0,2	14,77 014	13,86 904	13,86 854				
09T304EN 0,4	14,77 016	13,86 906				9,70 316	9,70 516
09T308EN 0,8	14,77 018	13,86 908				9,70 318	9,70 518
120404EN 0,4		17,34 910					13,66 528
120408EN 0,8							13,66 530
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○		○	○
Non ferrous metals							
Heat resistant alloys					○		

9

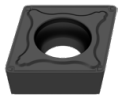
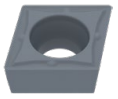
CCMT / CCGT

		-SF CTCP135		-CF55 CTEP110		-SMF TCM10		-SMF CTCP115		-SMF CTCP125		-SMF CTCP135		-SM CTCP125	
		-ZF HCR1135		-PF15 DCC1110		-SMF CWC10		-SMF HCX1115		-SMF HCX1125		-SMF HCR1135		-ZM HCX1125	
		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		F		F		F		F		F		F		M	
		CCMT		CERMET CCMT		CERMET CCMT		CCMT		CCMT		CCMT		CCGT	
		1A/08		1A/78		1A/78		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 253 ...		Article no. 76 248 ...		Article no. 70 249 ...		Article no. 76 249 ...		Article no. 76 249 ...		Article no. 76 249 ...		Article no. 76 250 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
060202EN	0,2													13,86	502
060204EN	0,4	7,78	704	7,54	004	7,28	900			7,78	504	7,78	704		
060208EN	0,8									7,78	506				
09T304EN	0,4	9,70	716	9,68	016	9,03	904	9,70	316	9,70	516	9,70	716		
09T308EN	0,8			9,68	018	9,03	906	9,70	318	9,70	518				
120404EN	0,4			13,66	028					13,66	528				
120408EN	0,8							13,66	330			13,66	730		
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○				○		○		○		○	
Cast iron				○		○		○		○				○	
Non ferrous metals															
Heat resistant alloys		○										○			

CCGT / CCMT

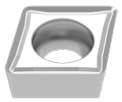
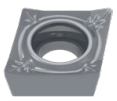
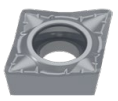
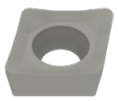
		-SM CTCP135		-SM CTCK110		-SM CTCK120		-SM CTCP115		-SM CTCP125		-SM CTCP135		-SMQ CTCP115	
		-ZM HCR1135		-ZM DCX3110		-ZM HCF3120		-ZM HCX1115		-ZM HCX1125		-ZM HCR1135		-SMQ HCX1115	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		M		M		M		M		M		M		F	
		CCGT		CCMT		CCMT		CCMT		CCMT		CCMT		CCMT	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 250 ...		Article no. 70 252 ...		Article no. 70 252 ...		Article no. 76 252 ...		Article no. 76 252 ...		Article no. 76 252 ...		Article no. 76 194 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
060202EN	0,2	13,86	702												
060204EN	0,4			7,78	004	7,78	554	7,78	304	7,78	504	7,78	704		
060208EN	0,8			7,78	006	7,78	506	7,78	306			7,78	706		
09T304EN	0,4			9,70	016	9,70	516	9,70	316	9,70	516	9,70	716	10,91	31600
09T308EN	0,8			9,70	018	9,70	518	9,70	318	9,70	518	9,70	718	10,91	31800
09T312EN	1,2			9,70	020	9,70	520								
120404EN	0,4			13,66	028	13,66	528	13,66	328	13,66	528	13,66	728	15,33	32800
120408EN	0,8			13,66	030	13,66	530	13,66	330	13,66	530	13,66	730	15,33	330
120412EN	1,2									13,66	532				
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○				○		○		○		○	
Cast iron				●		●		○		○				○	
Non ferrous metals															
Heat resistant alloys		○										○			

CCMT / CCXT

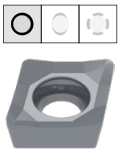
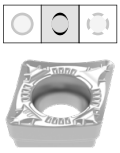
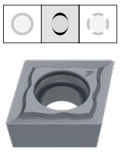
ISO	RE	-SMQ CTCP125	-SF CTC2135	-F43 CTC2135	-M81 CWN2120	-M25 CTPM125	-SM CTC2135	-M55 CTPM125
		-SMQ HCX1125	-ZF CWN2135	-F43 CWN2135		-PF23 HCN2125	-ZM CWN2135	-PF26 HCN2125
		DRAGONSKIN				DRAGONSKIN		DRAGONSKIN
								
		F	F	F	M	F	M	F
		CCMT	CCMT	CCMT	CCXT	CCMT	CCMT	CCMT
		1A/08	1A/08	1A/08	1A	1A/08	1A/08	1A/08
		Article no. 76 194 ...	Article no. 70 253 ...	Article no. 70 185 ...	Article no. 70 254 ...	Article no. 75 210 ...	Article no. 70 252 ...	Article no. 75 211 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
060202FN	0,2				9,64 100			
060204EN	0,4		7,54 460			7,78 204	7,54 670	7,78 204
060204FN	0,4				9,64 102			
09T302FN	0,2				9,43 104			
09T304EN	0,4	10,91 516	9,68 464	9,68 460		9,70 216	9,68 674	9,70 216
09T304FN	0,4				9,43 106			
09T308EN	0,8	10,91 518		9,68 462		9,70 218	9,68 676	9,70 218
09T308FN	0,8				9,43 108			
120404EN	0,4	15,33 528					13,66 678	13,66 228
120408EN	0,8	15,33 530					13,66 680	13,66 230
Steel		●	○	○		○	○	○
Stainless steel		○	●	●	●	●	●	●
Cast iron		○						
Non ferrous metals					○			
Heat resistant alloys			●	●			●	

9

CCGT

ISO	RE	-23P H216T	-25P H210T	-25P AMZ	-25Q H210T	-25Q AMZ	-27 H10T	-27 CWN15
		-23P CWK26	-25P CWK20	-25P AMZ	-25Q CWK20	-25Q AMZ	-AL CWK15	-AL CWN15
								
		F	F	F	M	M	M	M
		CCGT	CCGT	CCGT	CCGT	CCGT	CCGT	CCGT
		1A/90	1A/90	1A/90	1A/90	1A	1A/90	1A
		Article no. 70 255 ...	Article no. 70 248 ...	Article no. 70 248 ...	Article no. 70 248 ...	Article no. 70 248 ...	Article no. 70 254 ...	Article no. 70 254 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
060202FN	0,2	10,91 652	10,91 636	12,98 556			10,22 600	12,97 300
060204FN	0,4	10,91 654	10,91 638	12,98 558	11,86 678	15,68 618	10,22 602	12,97 302
09T302FN	0,2		11,42 639	13,31 539			10,91 604	13,41 304
09T304FN	0,4	11,42 656	11,42 640	13,31 560	12,53 680	16,43 620	10,91 606	13,41 306
09T308FN	0,8	11,42 658	11,42 641	13,31 541	12,53 681	16,43 621	10,91 608	13,41 308
120402FN	0,2		13,31 643				12,75 610	15,56 310
120404FN	0,4		13,31 642	17,00 562	14,77 682	18,48 622	12,75 612	15,56 312
120408FN	0,8		13,31 644	17,00 564	14,77 686	18,48 626	12,75 614	15,56 314
Steel				○		○		
Stainless steel				○		○		○
Cast iron		○	○	○	○	○	○	
Non ferrous metals		●	●	●	●	●	●	●
Heat resistant alloys		○	○		○		○	

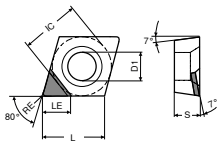
CCGT / CCMT

ISO	RE mm	-27 AMZ -AL AMZ	-29 H216T	-29 AMZ	-F23 CTP2120 -F23 CCN2120
					
		M CCGT 1A/90	M CCMT NEW 1A/90	M CCMT NEW 1A/90	F CCGT 1A/08
		Article no. 70 254 ...	Article no. 70 245 ...	Article no. 70 245 ...	Article no. 70 191 ...
	mm	EUR	EUR	EUR	EUR
060200FN	0,0				13,86 600
060201FN	0,1				13,86 602
060202FN	0,2	12,42 450			
060204EN	0,4		7,86 60400	9,40 40400	
060204FN	0,4	12,42 452			
09T300FN	0,0				16,00 604
09T301FN	0,1				16,00 606
09T302FN	0,2	12,75 454			
09T304EN	0,4		8,37 61600	9,71 41600	
09T304FN	0,4	12,75 456			
09T308EN	0,8		8,37 61800	9,71 41800	
09T308FN	0,8	12,75 458			
120402FN	0,2	15,89 460			
120404FN	0,4	15,89 462			
120408FN	0,8	15,89 464			

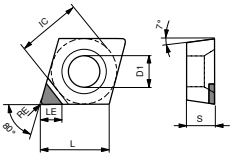
Steel	○		○	
Stainless steel	○		○	●
Cast iron	○	○	○	○
Non ferrous metals	●	●	●	○
Heat resistant alloys		○		●

CCGW / CCGT

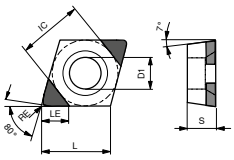
Designation	L	S	D1	IC
	mm	mm	mm	mm
CCG. 0602..	6,40	2,38	2,8	6,35
CCGW 09T3..	9,70	3,97	4,4	9,52
CCGW 1204..	12,90	4,76	5,5	12,70



CCGT -A

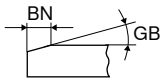


CCGW -A



CCGW-Q-B / -B
(CCGW -2MC / -2Q)

CCGW / CCGT



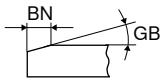
	-A CTBS10U	-A CTBS10U	-B CTBS20C	-Q-B CTBS20C
	PBC10	PBC10	-2MC PBC15-S	-2Q PBC15-S
				
	F	F	F	F
	CBN CCGW	CBN CCGT	CBN CCGW	CBN CCGW
	Y0	Y0	Y0	Y0
ISO	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 161 ...	Article no. 71 162 ...
	EUR	EUR	EUR	EUR
060202SN				55,21 120
060202SN				55,21 130
060202TN	34,55 300			
060202TN				55,21 140
060202SN			55,21 150	55,21 150
060202TN			55,21 160	55,21 160
060202FN	34,55 200	41,23 200		
060202EN			55,21 110	55,21 110
060204SN			55,21 121	55,21 121
060204SN			55,21 131	55,21 131
060204TN	34,55 302			
060204TN			55,21 141	55,21 141
060204SN			55,21 151	55,21 151
060204TN			55,21 161	55,21 161
060204SN				55,21 171
060204FN	34,55 202	41,23 202		
060208SN			55,21 122	
060208SN			55,21 132	
060208TN			55,21 142	
060208TN			55,21 162	
060208SN			55,21 172	
060208SN			55,21 182	
060208EN			55,21 112	
09T302SN			55,21 123	
09T302SN			55,21 133	
09T302SN			55,21 153	
09T302TN			55,21 163	
09T302SN			55,21 173	
09T302EN			55,21 113	

Cast iron	●	●	●	●
Sintered steels	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened < 45 HRC				
hardened 46–55 HRC				
hardened 56–60 HRC				
hardened 61–65 HRC				

9

→ v_c Page 160–167
Continued on next page

CCGW / CCGT

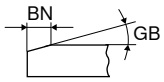


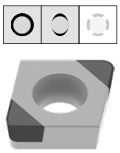
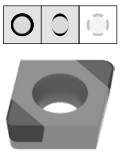
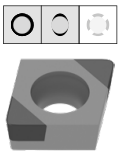
	-A CTBS10U	-A CTBS10U	-B CTBS20C	-Q-B CTBS20C
	PBC10	PBC10	-2MC PBC15-S	-2Q PBC15-S
				
	F	F	F	F
	CBN CCGW	CBN CCGT	CBN CCGW	CBN CCGW
	Y0	Y0	Y0	Y0
	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 161 ...	Article no. 71 162 ...
	EUR	EUR	EUR	EUR

ISO	RE mm	GB °	BN mm	LE mm								
09T304EN	0,4			3,1					55,21	114		
09T304SN	0,4	10	0,09	3,1					55,21	124	55,21	124
09T304SN	0,4	15	0,11	3,1					55,21	134	55,21	134
09T304TN	0,4	20	0,14	2,8	34,55	304						
09T304TN	0,4	20	0,15	3,1					55,21	144	55,21	144
09T304SN	0,4	20	0,16	3,1					55,21	154	55,21	154
09T304TN	0,4	25	0,17	3,1					55,21	164	55,21	164
09T304SN	0,4	25	0,18	3,1					55,21	174	55,21	174
09T304SN	0,4	30	0,18	3,1					55,21	184		
09T304FN	0,4			2,8	34,55	204						
09T308SN	0,8	10	0,09	2,8					55,21	125	55,21	125
09T308SN	0,8	15	0,11	2,8							55,21	135
09T308TN	0,8	20	0,14	2,5	34,55	306						
09T308TN	0,8	20	0,15	2,8					55,21	145	55,21	145
09T308SN	0,8	20	0,16	2,8					55,21	155	55,21	155
09T308TN	0,8	25	0,17	2,8					55,21	165	55,21	165
09T308SN	0,8	25	0,18	2,8					55,21	175		
09T308SN	0,8	30	0,18	2,8					55,21	185		
09T308FN	0,8			2,5	34,55	206						
09T308EN	0,8			2,8							55,21	115
120404FN	0,4			3,1	34,55	208						
120404TN	0,4	20	0,14	3,1	34,55	308						
120408FN	0,8			2,8	34,55	210						
120408TN	0,8	20	0,14	2,8	34,55	310						

Cast iron	●	●	●	●
Sintered steels	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened < 45 HRC				
hardened 46–55 HRC				
hardened 56–60 HRC				
hardened 61–65 HRC				

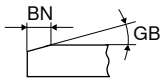
CCGW



					-B CTBH15U		-B CTBH15C		-Q-B CTBH15C	
										
					F		F		F	
					CBN CCGW		CBN CCGW		CBN CCGW	
					NEW Y0		NEW Y0		NEW Y0	
ISO	RE	GB	BN	LE	Article no. 71 001 ...		Article no. 71 000 ...		Article no. 71 002 ...	
	mm	°	mm	mm	EUR		EUR		EUR	
060202SN	0,2	15	0,11	3,4	69,18	**30214**	66,91	**30214**		
060202EN	0,2			3,4	69,18	**00200**	66,91	**00200**		
060204SN	0,4	15	0,11	3,1	69,18	**30414**	66,91	**30414**		
060204SN	0,4	25	0,13	3,1	69,18	**30429**	66,91	**30429**		
060204EN	0,4			3,1	69,18	**00400**	66,91	**00400**		
060208EN	0,8			2,8	69,18	**00600**	66,91	**00600**		
060208SN	0,8	15	0,11	2,8	69,18	**30614**	66,91	**30614**		
060208SN	0,8	25	0,13	2,8	69,18	**30629**	66,91	**30629**		
09T302SN	0,2	15	0,11	3,4			66,91	**31414**		
09T302SN	0,2	25	0,13	3,4			66,91	**31429**		
09T304SN	0,4	15	0,11	3,1			66,91	**31614**	77,62	**31614**
09T304SN	0,4	25	0,13	3,1			66,91	**31629**	66,91	**31629**
09T308SN	0,8	15	0,11	2,8			66,91	**31814**	66,91	**31814**
09T308SN	0,8	25	0,13	2,8			66,91	**31829**	66,91	**31829**
Cast iron										
Sintered steels										
Heat resistant alloys										
hardened < 45 HRC					●		●		●	
hardened 46–55 HRC					●		●		●	
hardened 56–60 HRC					●		●		●	
hardened 61–65 HRC										

9

CCGW / CCGT



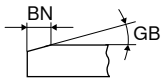
	-A CTBH21U	-A CTBH21U	-B CTBH21U	-Q-B CTBH21U	-B CTBH20C	-Q-B CTBH20C
	PBC25	PBC25	-2S PBC25	-2Q PBC25	-2MC PBC25-S	-2Q PBC25-S
						
	F	F	F	F	F	F
	CBN CCGW Y0	CBN CCGT Y0	CBN CCGW Y0	CBN CCGW Y0	CBN CCGW Y0	CBN CCGW Y0
	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 121 ...	Article no. 71 123 ...	Article no. 71 161 ...	Article no. 71 162 ...
	EUR	EUR	EUR	EUR	EUR	EUR

ISO	RE mm	GB °	BN mm	LE mm	71 120 ... EUR		71 124 ... EUR		71 121 ... EUR		71 123 ... EUR		71 161 ... EUR		71 162 ... EUR	
060202SN	0,2	10	0,09	3,4									55,21	230	55,21	230
060202SN	0,2	15	0,11	3,4											55,21	240
060202SN	0,2	20	0,09	3,4									55,21	250		
060202TN	0,2	20	0,14	3,4	34,55	500										
060202TN	0,2	25	0,14	3,4									55,21	260		
060202EN	0,2			3,4											55,21	220
060202SN	0,2	25	0,15	3,4									55,21	270		
060202FN	0,2			3,4	34,55	400 [1]	41,23	400							55,21	210
060204EN	0,4			3,1									55,21	221		
060204SN	0,4	10	0,09	3,1									55,21	231	55,21	231
060204SN	0,4	15	0,11	3,1									55,21	241	55,21	241
060204SN	0,4	20	0,09	3,1									55,21	251	55,21	251
060204TN	0,4	20	0,14	3,1	34,55	502										
060204TN	0,4	25	0,14	3,1									55,21	261	55,21	261
060204FN	0,4			3,1	34,55	402 [1]	41,23	402								
060204SN	0,4	25	0,15	3,1									55,21	271		
060208SN	0,8	10	0,09	2,8									55,21	232		
060208SN	0,8	20	0,09	2,8									55,21	252		
060208TN	0,8	25	0,14	2,8									55,21	262		
060208SN	0,8	30	0,18	2,8									55,21	282		
060208FN	0,8			2,8									55,21	212		
09T302SN	0,2	10	0,09	3,4									55,21	233		
09T302SN	0,2	15	0,11	3,4									55,21	243		
09T302SN	0,2	20	0,09	3,4									55,21	253		
09T302SN	0,2	25	0,15	3,4									55,21	273		
09T304SN	0,4	10	0,09	3,1									55,21	234		
09T304SN	0,4	15	0,11	3,1									55,21	244		
09T304SN	0,4	20	0,09	3,1									55,21	254		
09T304TN	0,4	20	0,14	2,8	34,55	504										
09T304TN	0,4	20	0,14	3,1					54,36	502	54,58	502				
09T304TN	0,4	25	0,14	3,1									55,21	264		
09T304SN	0,4	25	0,15	3,1									55,21	274		
09T304SN	0,4	30	0,18	3,1									55,21	284		
09T304EN	0,4			3,1									55,21	224		
09T304FN	0,4			3,1					54,36	402 [1]						
09T304FN	0,4			2,8	34,55	404 [1]										
09T308SN	0,8	10	0,09	2,8									55,21	235	55,21	235
09T308SN	0,8	15	0,11	2,8									55,21	245	55,21	245
09T308SN	0,8	20	0,09	2,8											55,21	255
09T308TN	0,8	20	0,14	2,8					54,36	504	54,58	504				
09T308TN	0,8	20	0,14	2,5	34,55	506										
09T308TN	0,8	25	0,14	2,8									55,21	265	55,21	265
09T308SN	0,8	25	0,15	2,8									55,21	275		
09T308FN	0,8			2,5	34,55	406 [1]										
09T308EN	0,8			2,8											55,21	225
09T308FN	0,8			2,8					54,36	404 [1]	54,58	404 [1]			55,21	215
120404TN	0,4	20	0,14	3,1	34,55	508										
120408TN	0,8	20	0,14	2,8	34,55	510										

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC						

1) Machining to 60 HRC

CCGW / CCGT



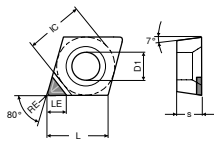
	-A CTBH40U	-A CTBH40U	-B CTBH40U	-Q-B CTBH40U	-B CTBH40C	-Q-B CTBH40C
	PBC40	PBC40	-2S PBC40	-2Q PBC40	-2MC PBC40-S	-2Q PBC40-S
						
	F	F	F	F	F	F
	CBN CCGW	CBN CCGT	CBN CCGW	CBN CCGW	CBN CCGW	CBN CCGW
	Y0	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 121 ...	Article no. 71 123 ...	Article no. 71 161 ...	Article no. 71 162 ...
RE mm / GB ° / BN mm / LE mm	EUR	EUR	EUR	EUR	EUR	EUR
060202TN 0,2 20 0,09 3,4					55,21 320	
060202SN 0,2 20 0,09 3,4						55,21 330
060202SN 0,2 25 0,09 3,4					55,21 350	55,21 350
060202TN 0,2 25 0,11 3,4					55,21 340	55,21 340
060202TN 0,2 25 0,12 3,4	34,55 900					
060202TN 0,2 30 0,14 3,4					55,21 360	55,21 360
060202FN 0,2 3,4	34,55 800	41,23 800				
060204SN 0,4 20 0,09 3,1					55,21 331	
060204SN 0,4 25 0,09 3,1					55,21 351	55,21 351
060204TN 0,4 25 0,11 3,1					55,21 341	55,21 341
060204TN 0,4 25 0,12 3,1	34,55 902					
060204TN 0,4 30 0,14 3,1					55,21 361	55,21 361
060204SN 0,4 30 0,16 3,1					55,21 371	55,21 371
060204SN 0,4 35 0,17 3,1					55,21 381	55,21 381
060204FN 0,4 3,1	34,55 802	41,23 802				
060208TN 0,8 20 0,09 2,8					55,21 322	
060208SN 0,8 25 0,09 2,8					55,21 352	
060208TN 0,8 25 0,11 2,8					55,21 342	
060208TN 0,8 30 0,14 2,8					55,21 362	
060208SN 0,8 30 0,16 2,8					55,21 372	
060208SN 0,8 35 0,17 2,8					55,21 382	
09T302TN 0,2 20 0,09 3,4					55,21 323	
09T302SN 0,2 25 0,09 3,4					55,21 353	
09T302TN 0,2 25 0,11 3,4					55,21 343	
09T302SN 0,2 30 0,16 3,4					55,21 373	
09T302SN 0,2 35 0,17 3,4					55,21 383	
09T304SN 0,4 20 0,09 3,1					55,21 334	55,21 334
09T304TN 0,4 20 0,09 3,1					55,21 324	55,21 324
09T304SN 0,4 25 0,09 3,1					55,21 354	55,21 354
09T304TN 0,4 25 0,11 3,1					55,21 344	55,21 344
09T304TN 0,4 25 0,12 3,1			54,36 902	54,58 902		
09T304TN 0,4 25 0,12 2,8	34,55 904					
09T304TN 0,4 30 0,14 3,1					55,21 364	55,21 364
09T304SN 0,4 30 0,16 3,1					55,21 374	
09T304EN 0,4 3,1					55,21 314	
09T304SN 0,4 35 0,17 3,1					55,21 384	
09T304FN 0,4 3,1			54,36 802	54,58 802		
09T304FN 0,4 2,8	34,55 804					
09T308SN 0,8 20 0,09 2,8					55,21 335	55,21 335
09T308TN 0,8 20 0,09 2,8					55,21 325	55,21 325
09T308SN 0,8 25 0,09 2,8					55,21 355	55,21 355
09T308TN 0,8 25 0,11 2,8					55,21 345	55,21 345
09T308TN 0,8 25 0,12 2,8			54,36 904	54,58 904		
09T308TN 0,8 25 0,12 2,5	34,55 906					
09T308TN 0,8 30 0,14 2,8					55,21 365	55,21 365
09T308SN 0,8 30 0,16 2,8						55,21 375
09T308SN 0,8 35 0,17 2,8					55,21 385	
09T308FN 0,8 2,8			54,36 804	54,58 804		
09T308FN 0,8 2,5	34,55 806					
09T308EN 0,8 2,8						55,21 315
120404FN 0,4 3,1	34,55 808					
120404TN 0,4 25 0,12 3,1	34,55 908					
120408TN 0,8 25 0,12 2,8	34,55 910					

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC	●	●	●	●	●	●

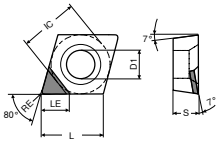
9

CCGW / CCGT

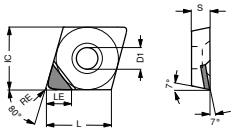
Designation	L	S	D1	IC
	mm	mm	mm	mm
CCG. 0602..	6,45	2,38	2,8	6,35
CCG. 09T3..	9,70	3,97	4,4	9,52
CCG. 1204..	12,90	4,76	5,5	12,70



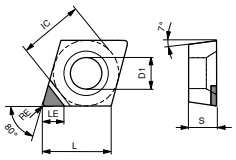
CCGW -Q-A



CCGT -A



CCGT -Q-A

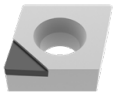


CCGW -A

CCGW / CCGT

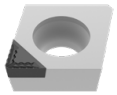
	-A CTDMD05	-A CTDPD20	-A CTDPD20	-Q-A CTDPD20	-Q-A CTDPD20
	MDC	PDC	PDC	-2Q PDC	-2Q PDC
	F	F	F	F	F
	DIAMOND CCGW	DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGW	DIAMOND CCGT
	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 120 ...	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 125 ...	Article no. 71 126 ...
RE mm / LE mm	EUR	EUR	EUR	EUR	EUR
060201FN 0,1 3,4					61,68 101
060202FN 0,2 2,5	261,80 050				
060202FN 0,2 3,3				61,68 102	61,68 102
060202FN 0,2 3,4		48,64 100	48,64 100		
060204FN 0,4 2,5	261,80 052				
060204FN 0,4 3,1					61,68 104
060204FN 0,4 3,2		48,64 102	48,64 102	61,68 104	
09T301FN 0,1 4,5				62,85 111	62,85 111
09T302FN 0,2 4,4				62,85 112	62,85 112
09T304FN 0,4 2,5	265,00 054				
09T304FN 0,4 4,2				62,85 114	62,85 114
09T304FN 0,4 4,3		49,70 104	49,70 104		
09T308FN 0,8 2,5	265,00 056				
09T308FN 0,8 4,1		49,70 106	49,70 106		
120402FN 0,2 4,4				63,91 122	63,91 122
120404FN 0,4 4,2				63,91 124	63,91 124
120404FN 0,4 4,3		49,70 108	49,70 108		
120408FN 0,8 4,1		49,70 110	49,70 110		
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys	○				

CCGT / CCGW

			-A-CB1 CTDPD20		-A-CB1 CTDPD20		-Q-A CTDPS30		-Q-A CTDPS30		-A-CB2 CTDPS30		-A-Q-CB2 CTDPS30	
			-CB1 PDC		-Q-CB1 PDC		-2Q PDC-S		-2Q PDC-S		-CB2 PDC-S		-Q-CB2 PDC-S	
														
			F		F		F		F		M		M	
			DIAMOND CCGT Y0		DIAMOND CCGT Y0		DIAMOND CCGW Y0		DIAMOND CCGT Y0		DIAMOND CCGT Y0		DIAMOND CCGT Y0	
ISO	RE	LE	Article no. 71 300 ...		Article no. 71 305 ...		Article no. 71 125 ...		Article no. 71 126 ...		Article no. 71 301 ...		Article no. 71 306 ...	
	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
060202FN	0,2	3,3					61,68	152	61,68	152				
060202EN	0,2	3,3											66,24	202
060202EN	0,2	3,4									57,76	202		
060202FN	0,2	3,4	57,76	102										
060204FN	0,4	3,1			66,24	104								
060204EN	0,4	3,1											66,24	204
060204EN	0,4	3,2									57,76	204		
060204FN	0,4	3,2	57,76	104										
060208EN	0,8	3,0									62,63	208		
09T302FN	0,2	4,4					62,85	162	62,85	162				
09T302EN	0,2	4,4											66,98	212
09T302EN	0,2	4,5									57,65	212		
09T302FN	0,2	4,5	59,03	112										
09T304FN	0,4	4,2			66,98	114								
09T304EN	0,4	4,2											66,98	214
09T304EN	0,4	4,3									57,65	214		
09T304FN	0,4	4,3	59,03	114										
09T308EN	0,8	4,1									62,42	218		
09T308FN	0,8	4,1	63,91	118										
120402FN	0,2	4,4							63,91	172				
120402EN	0,2	4,4											68,78	222
120404EN	0,4	4,2											68,78	224
120404FN	0,4	4,2			68,78	124			63,91	174				
120404EN	0,4	4,3									60,09	224		
120404FN	0,4	4,3	60,09	124										
120408EN	0,8	4,1									65,07	228		
120408FN	0,8	4,1	65,07	128										
Steel														
Stainless steel														
Cast iron														
Non ferrous metals			●		●		●		●		●		●	
Heat resistant alloys							○		○		○		○	

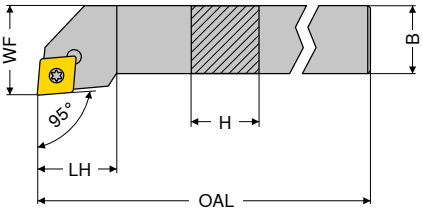
9

CCGT

			-A-CB3 CTDPU20		-A-CB1 CTDCD10		-A-CB2 CTDCD10		-A-Q-CB2 CTDCD10	
			-CB3 PDC-S		-CB1 CVD		-CB2 CVD		-Q-CB2 CVD	
										
			R		F		M		M	
			DIAMOND CCGT		DIAMOND CCGT		DIAMOND CCGT		DIAMOND CCGT	
			Y0		Y0		Y0		Y0	
ISO	RE	LE	Article no. 71 302 ...		Article no. 71 300 ...		Article no. 71 301 ...		Article no. 71 306 ...	
	mm	mm	EUR		EUR		EUR		EUR	
060202FN	0,2	2,4			76,20	302				
060204EN	0,4	2,1							81,07	304
060204FN	0,4	2,2			76,20	304				
060204EN	0,4	2,2					76,20	304		
060204EN	0,4	3,2	57,76	204						
09T304EN	0,4	2,1							81,70	314
09T304FN	0,4	2,2			78,63	314				
09T304EN	0,4	2,2					78,63	314		
09T304EN	0,4	4,3	57,65	214						
09T308EN	0,8	4,1	62,42	218						
120404EN	0,4	2,1							83,62	324
120408EN	0,8	2,1					88,38	328		
Steel										
Stainless steel										
Cast iron										
Non ferrous metals				●		●		●		●
Heat resistant alloys				○						

MaxiLock-S – SCLC 95° – Toolholder with screw clamping







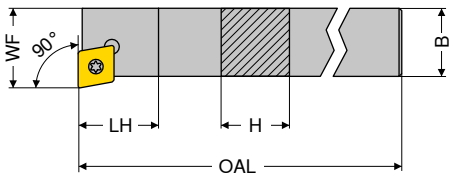
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 653 ...		Right-hand 2A/24 Article no. 70 652 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SCLC R/L 0808 D06	8	8	60	9	10	1,2	CC.. 0602	60,92	**008**	60,92	**008**
SCLC R/L 1010 E06	10	10	70	9	12	1,2	CC.. 0602	64,59	**010**	64,59	**010**
SCLC R/L 1212 F09	12	12	80	15	16	3,2	CC.. 09T3	64,59	**012**	64,59	**012**
SCLC R/L 1616 H09	16	16	100	17	20	3,2	CC.. 09T3	80,00	**016**	80,00	**016**
SCLC R/L 2020 K09	20	20	125	17	25	3,2	CC.. 09T3	85,04	**020**	85,04	**020**
SCLC R/L 1616 H12	16	16	100	20	20	5	CC.. 1204	80,00	**116**	80,00	**116**
SCLC R/L 2020 K12	20	20	125	20	25	5	CC.. 1204	85,04	**120**	85,04	**120**
SCLC R/L 2525 M12	25	25	150	20	32	5	CC.. 1204	87,97	**125**	87,97	**125**
SCLC R/L 3225 P12	32	25	170	20	32	5	CC.. 1204	91,44	**132**	91,44	**132**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 653 008 / 70 652 008	7,80	**110**			2,36	**112**				
70 653 010 / 70 652 010	7,80	**110**			2,36	**112**				
70 653 012 / 70 652 012	9,28	**113**			3,14	**113**				
70 653 016 / 70 652 016			8,28	**398**	3,14	**113**	9,67	**165**	4,64	**171**
70 653 020 / 70 652 020			8,28	**398**	3,14	**113**	9,67	**165**	4,64	**171**
70 653 116 / 70 652 116			8,28	**398**	2,57	**114**	12,37	**166**	4,64	**170**
70 653 120 / 70 652 120			8,28	**398**	2,57	**114**	12,37	**166**	4,64	**170**
70 653 125 / 70 652 125			8,28	**398**	2,57	**114**	12,37	**166**	4,64	**170**
70 653 132 / 70 652 132			8,28	**398**	2,57	**114**	12,37	**166**	4,64	**170**

MaxiLock-S – SCFC 90° – Toolholder with screw clamping



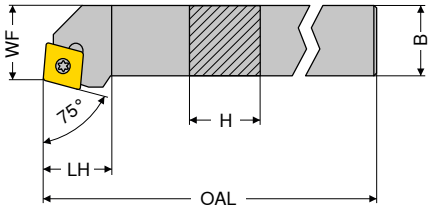


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 761 ...		Right-hand 2A/24 Article no. 70 760 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SCFC R/L 0808 D06	8	8	60	10	10	1,2	CC.. 0602	60,92	008	60,92	008
SCFC R/L 1010 E06	10	10	70	10	12	1,2	CC.. 0602	64,59	010	64,59	010
SCFC R/L 1212 F09	12	12	80	13	16	3,2	CC.. 09T3	64,59	012	64,59	012
SCFC R/L 1616 H09	16	16	100	13	20	3,2	CC.. 09T3	80,00	016	80,00	016
SCFC R/L 2020 K12	20	20	125	17	25	5	CC.. 1204	85,04	020	85,04	020

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 761 008 / 70 760 008	7,80	110			2,36	112				
70 761 010 / 70 760 010	7,80	110			2,36	112				
70 761 012 / 70 760 012	9,28	113			3,14	113				
70 761 016 / 70 760 016			8,28	398	3,14	113	9,67	165	4,64	171
70 761 020 / 70 760 020			8,28	398	2,57	114	12,37	166	4,64	170

MaxiLock-S – SCRC 75° – Toolholder with screw clamping





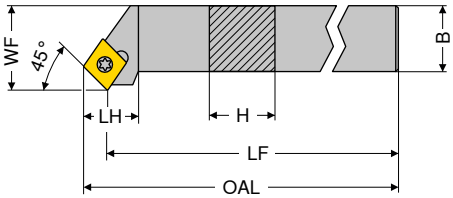
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 649 ...		Right-hand 2A/24 Article no. 70 648 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SCRC R 1010 E06	10	10	70	10	11	1,2	CC.. 0602			64,59	010
SCRC R/L 1212 F09	12	12	80	16	13	3,2	CC.. 09T3	64,59	012	64,59	012
SCRC R/L 1616 H09	16	16	100	17	17	3,2	CC.. 09T3	80,00	016	80,00	016
SCRC R/L 2020 K09	20	20	125	17	22	3,2	CC.. 09T3	85,04	020	85,04	020
SCRC R/L 2020 K12	20	20	125	20	22	5	CC.. 1204	85,04	120	85,04	120
SCRC R/L 2525 M12	25	25	150	20	27	5	CC.. 1204	87,97	125	87,97	125

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 648 010	7,80	110			2,36	112				
70 649 012 / 70 648 012	9,28	113			3,14	113				
70 649 016 / 70 648 016			8,28	398	3,14	113	9,67	165	4,64	171
70 649 020 / 70 648 020			8,28	398	3,14	113	9,67	165	4,64	171
70 649 120 / 70 648 120			8,28	398	2,57	114	12,37	166	4,64	170
70 649 125 / 70 648 125			8,28	398	2,57	114	12,37	166	4,64	170

MaxiLock-S – SCSC 45° – Toolholder with screw clamping







Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 641 ...		Right-hand 2A/24 Article no. 70 640 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SCSC R 1616 H12	16	16	109,1	100	20	20	5	CC.. 1204			80,00	016
SCSC R/L 2020 K12	20	20	134,1	125	20	25	5	CC.. 1204	85,04	020	85,04	020
SCSC R/L 2525 M12	25	25	159,1	150	20	32	5	CC.. 1204	87,97	025	87,97	025


Combination Key 2A/28


Clamping screw 2A/28


Carbide type C 2A/28

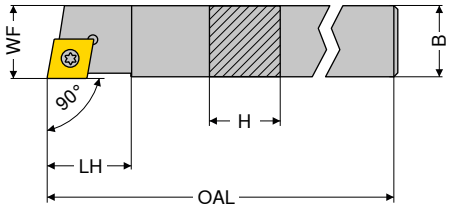

Threaded sleeve 2A/28

Spare parts for Article no.		Article no. 70 950 ... EUR			Article no. 70 950 ... EUR		Article no. 70 950 ... EUR			Article no. 70 950 ... EUR	
70 640 016	T15/SW	8,28	398	M4,5x12	2,57	114	12,37	166	M4,5	4,64	170
70 641 020 / 70 640 020	T15/SW	8,28	398	M4,5x12	2,57	114	12,37	166	M4,5	4,64	170
70 641 025 / 70 640 025	T15/SW	8,28	398	M4,5x12	2,57	114	12,37	166	M4,5	4,64	170

MaxiLock-S – SCAC 90° – Toolholder with screw clamping

▲ for sliding head lathes







Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 757 ...		Right-hand 2A/24 Article no. 70 756 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SCAC R/L 0808 K06	8	8	125	9	8	1,2	CC.. 0602	64,59	108	64,59	108
SCAC R/L 0808 D06	8	8	60	9	8	1,2	CC.. 0602	60,92	008	60,92	008
SCAC R/L 1010 M06	10	10	150	9	10	1,2	CC.. 0602	64,59	110	64,59	110
SCAC R/L 1010 E06	10	10	70	9	10	1,2	CC.. 0602	64,59	010	64,59	010
SCAC R/L 1212 M09	12	12	150	13	12	3,2	CC.. 09T3	72,25	112	72,25	112
SCAC R/L 1212 F09	12	12	80	13	12	3,2	CC.. 09T3	64,59	012	64,59	012
SCAC R/L 1414 M09	14	14	150	13	14	3,2	CC.. 09T3	72,25	114	72,25	114
SCAC R/L 1616 H09	16	16	100	13	16	3,2	CC.. 09T3	80,00	116	80,00	116
SCAC R/L 2020 K12	20	20	125	17	20	5	CC.. 1204	85,04	120	85,04	120


Key D Y7


Combination Key 2A/28


Clamping screw 2A


Carbide type C 2A/28

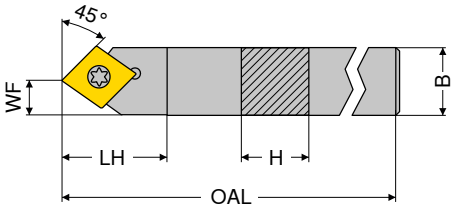

Threaded sleeve 2A/28

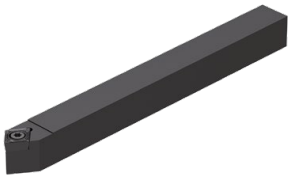
Spare parts for Article no.	Article no. 80 950 ... EUR		Article no. 70 950 ... EUR		Article no. 70 950 ... EUR		Article no. 70 950 ... EUR		Article no. 70 950 ... EUR	
70 756 108 / 70 757 108	7,80	110			2,36	112				
70 756 008 / 70 757 008	7,80	110			2,36	112				
70 756 110 / 70 757 110	7,80	110			2,36	112				
70 756 010 / 70 757 010	7,80	110			2,36	112				
70 756 112 / 70 757 112	9,28	113			3,14	113				
70 756 012 / 70 757 012	9,28	113			3,14	113				
70 756 114 / 70 757 114	9,28	113			3,14	113				
70 756 116 / 70 757 116			8,28	398	3,14	113	9,67	165	4,64	171
70 756 120 / 70 757 120			8,28	398	2,57	114	12,37	166	4,64	170

9

MaxiLock-S – SCDC 45° – Toolholder with screw clamping







ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 752 ... EUR	
SCDC L 0808 K06	8	8	125	13	4	1,2	CC.. 0602	64,59	**008**
SCDC L 1010 M06	10	10	150	13	5	1,2	CC.. 0602	64,59	**010**
SCDC L 1212 M09	12	12	150	18	6	3,2	CC.. 09T3	72,25	**012**
SCDC L 1414 M09	14	14	150	18	7	3,2	CC.. 09T3	72,25	**014**



Key D



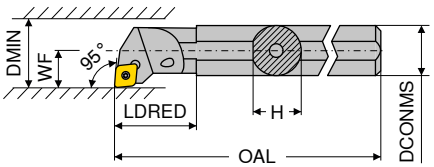
Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... EUR			2A Article no. 70 950 ... EUR	
70 752 008	T08	7,80	**110**	M2,5x6	2,36	**112**
70 752 010	T08	7,80	**110**	M2,5x6	2,36	**112**
70 752 012	T15	9,28	**113**	M3,5x11	3,14	**113**
70 752 014	T15	9,28	**113**	M3,5x11	3,14	**113**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant







Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 717 ...		Right-hand 2A/24 Article no. 70 716 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
S08H SCLC R/L 06	8	7,2	100		5	11	1,2	CC.. 0602	96,57	008	96,57	008
A08F SCLC R/L 06	8	7,6	80	17	5	11	1,2	CC.. 0602	96,57	208	96,57	208
A10H SCLC R/L 06	10	9,5	100	19	7	13	1,2	CC.. 0602	96,57	210	96,57	210
S10K SCLC R/L 06	10	9,0	125		7	13	1,2	CC.. 0602	96,57	010	96,57	010
A12K SCLC R/L 06	12	11,5	125	22	9	16	1,2	CC.. 0602	96,57	212	96,57	212
S12Q SCLC R/L 06	12	11,0	180		9	16	1,2	CC.. 0602	96,57	012	96,57	012
A16M SCLC R/L 06	16	14,0	150	50	9	18	1,2	CC.. 0602	98,67	116	98,67	116
S16R SCLC R/L 09	16	14,5	200		11	20	3,2	CC.. 09T3	98,67	016	98,67	016
A16M SCLC R/L 09	16	15,0	150	29	11	20	3,2	CC.. 09T3	98,67	216	98,67	216
A20Q SCLC R/L 09	20	18,5	180	32	13	25	3,2	CC.. 09T3	123,00	220	123,00	220
S20S SCLC R/L 09	20	18,0	250		13	25	3,2	CC.. 09T3	123,00	020	123,00	020
S25T SCLC R/L 09	25	23,0	300		17	32	3,2	CC.. 09T3	141,40	025	141,40	025
A25R SCLC R/L 09	25	23,0	200	36	17	32	3,2	CC.. 09T3	141,40	225	141,40	225
A32S SCLC R/L 12	32	30,0	250	50	22	40	5	CC.. 1204	194,40	232	194,40	232
A40T SCLC R/L 12	40	38,0	300	60	27	50	5	CC.. 1204	233,40	240	233,40	240

Tool holders with HSK-T or PSC interface can be found in→ **Chapter 16.**

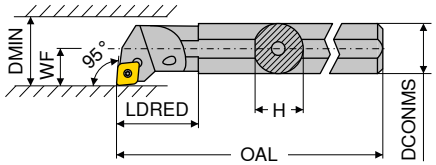
9

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Combination Key Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
70 716 008 / 70 717 008	7,80	110			2,57	116				
70 716 208 / 70 717 208	7,80	110			2,57	116				
70 716 210 / 70 717 210	7,80	110			2,57	116				
70 716 010 / 70 717 010	7,80	110			2,57	116				
70 716 212 / 70 717 212	7,80	110			2,57	116				
70 716 012 / 70 717 012	7,80	110			2,57	116				
70 716 116 / 70 717 116	7,80	110			2,57	116				
70 716 016 / 70 717 016	9,28	113			3,14	110				
70 716 216 / 70 717 216	9,28	113			3,14	110				
70 716 220 / 70 717 220	9,28	113			3,14	304				
70 716 020 / 70 717 020	9,28	113			3,14	110				
70 716 025 / 70 717 025	9,28	113			3,14	113				
70 716 225 / 70 717 225	9,28	113			3,14	304				
70 716 232 / 70 717 232			8,28	398	2,57	114	12,37	166	4,64	170
70 716 240 / 70 717 240			8,28	398	2,57	114	12,37	166	4,64	170

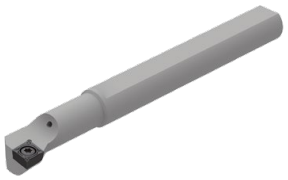
MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions



ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 719 ...	EUR		Right-hand 2A Article no. 70 718 ...	EUR	
E-A08F SCLC R/L 06	8	7,5	80	18	6	12	1,2	CC.. 0602		177,20	**208**		177,20	**208**
E-A10H SCLC R/L 06	10	9,0	100	20	7	14	1,2	CC.. 0602		177,20	**210**		177,20	**210**
E-A12K SCLC R/L 06	12	11,0	125	20	9	18	1,2	CC.. 0602		190,90	**212**		190,90	**212**
E-A16M SCLC R/L 09	16	15,0	150	28	11	22	3,2	CC.. 09T3		324,00	**216**		324,00	**216**
E-A20Q SCLC R/L 09	20	18,0	180	38	13	26	3,2	CC.. 09T3		400,60	**220**		400,60	**220**
E-A25R SCLC R/L 09	25	23,0	200	38	17	34	3,2	CC.. 09T3		508,50	**225**		508,50	**225**
E-A32S SCLC R/L 12	32	30,0	250	43	22	39	5	CC.. 1204		800,10	**232**		800,10	**232**

Y7



Key D

2A/28

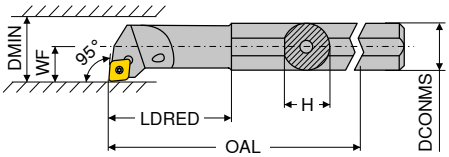


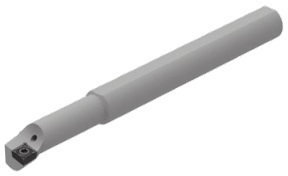
Clamping screw

Spare parts for Article no.		Article no. 80 950 ...	EUR			Article no. 70 950 ...	EUR	
70 718 208 / 70 719 208	T08		7,80	**110**	M2,5x5		2,57	**116**
70 718 210 / 70 719 210	T08		7,80	**110**	M2,5x5		2,57	**116**
70 718 212 / 70 719 212	T08		7,80	**110**	M2,5x5		2,57	**116**
70 718 216 / 70 719 216	T15		9,28	**113**	M4x9,5		3,14	**449**
70 718 220 / 70 719 220	T15		9,28	**113**	M4x9,5		3,14	**449**
70 718 225 / 70 719 225	T15		9,28	**113**	M4x9,5		3,14	**449**
70 718 232 / 70 719 232	T15		9,28	**113**	M4x11		3,40	**174**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions

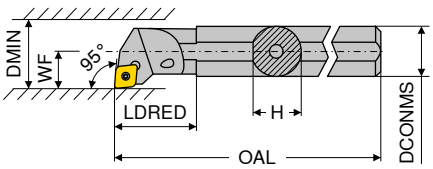
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 719 ... EUR		Right-hand 2A Article no. 70 718 ... EUR	
E-A0608F SCLC R/L 06	8	7,5	100	25	4	8	1,2	CC.. 0602	190,90	308	190,90	308
E-A0810H SCLC R/L 06	10	9,0	110	32	6	12	1,2	CC.. 0602	190,90	310	190,90	310
E-A1012K SCLC R/L 06	12	11,0	125	38	7	14	1,2	CC.. 0602	190,90	312	190,90	312
E-A1216M SCLC R/L 06	16	15,0	150	50	9	18	1,2	CC.. 0602	190,90	316	190,90	316

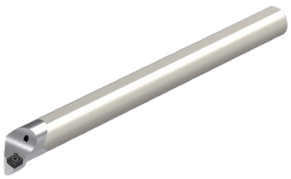
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 718 308 / 70 719 308	7,80	110	2,57	116
70 718 310 / 70 719 310	7,80	110	2,57	116
70 718 312 / 70 719 312	7,80	110	2,57	116
70 718 316 / 70 719 316	7,80	110	2,57	116

9

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ Type: Solid carbide



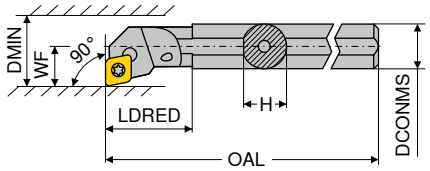


Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 719 ... EUR		Right-hand 2A/24 Article no. 70 718 ... EUR	
E08H SCLC R/L 06	8	7,6	100		5	11	1,2	CC.. 0602	219,60	008	219,60	008
E10K SCLC R/L 06	10	9,0	125	22	7	13	1,2	CC.. 0602	253,70	010	253,70	010
E12Q SCLC R/L 06	12	11,5	180	26	9	16	1,2	CC.. 0602	333,20	012	333,20	012
E16R SCLC R/L 09	16	15,0	200	34	11	20	3,2	CC.. 09T3	435,40	016	435,40	016
E20S SCLC R/L 09	20	18,5	250	38	13	25	3,2	CC.. 09T3	543,90	020	543,90	020
E25T SCLC R/L 09	25	23,0	300	43	17	32	3,2	CC.. 09T3	959,10	025	959,10	025

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR	
70 719 008 / 70 718 008	T08	7,80	110	M2,5x5	2,57	116
70 719 010 / 70 718 010	T08	7,80	110	M2,5x5	2,57	116
70 719 012 / 70 718 012	T08	7,80	110	M2,5x5	2,57	116
70 719 016 / 70 718 016	T15	9,28	113	M3,5x7,2	3,14	110
70 719 020 / 70 718 020	T15	9,28	113	M3,5x8,6	3,14	304
70 719 025 / 70 718 025	T15	9,28	113	M3,5x11	3,14	113

MaxiLock-S – SCFC 90° – Boring bar with screw clamping





Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 793 ...	EUR		Right-hand 2A/24 Article no. 70 792 ...	EUR	
A08F SCFC R/L 06	8	7,6	80	17	5	11	1,2	CC.. 0602		96,57	**208**		96,57	**208**
A10H SCFC R/L 06	10	9,5	100	19	7	13	1,2	CC.. 0602		96,57	**210**		96,57	**210**
A12K SCFC R/L 06	12	11,5	125	22	9	16	1,2	CC.. 0602		96,57	**212**		96,57	**212**



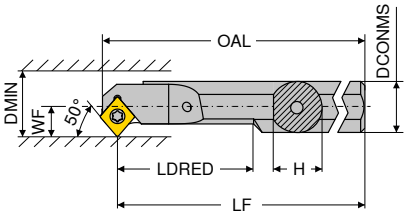
Key D



Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ...	EUR		2A/28 Article no. 70 950 ...	EUR	
70 792 208 / 70 793 208	T08		7,80	**110**	M2,5x5	2,57	**116**
70 792 210 / 70 793 210	T08		7,80	**110**	M2,5x5	2,57	**116**
70 792 212 / 70 793 212	T08		7,80	**110**	M2,5x5	2,57	**116**

MaxiLock-S – SCMC 50° – Boring bar with screw clamping





Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LF mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 723 ...	EUR		Right-hand 2A Article no. 70 722 ...	EUR	
A08H SCMC R/L 06	8	7	104,15	100	20	5,5	10,5	1,2	CC.. 0602		96,57	**208**		96,57	**208**
A10H SCMC R/L 06	10	9	114,15	110	26	6,0	11,0	1,2	CC.. 0602		96,57	**210**		96,57	**210**
A12K SCMC R/L 06	12	11	129,15	125	32	7,0	13,0	1,2	CC.. 0602		96,57	**212**		96,57	**212**
A16M SCMC R/L 06	16	14	154,15	150	40	9,0	16,0	1,2	CC.. 0602		98,67	**216**		98,67	**216**



Key D



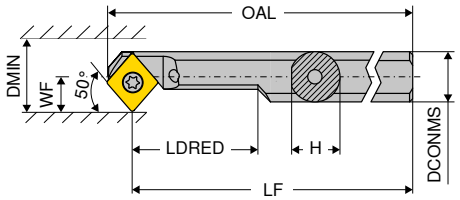
Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ...	EUR		2A/28 Article no. 70 950 ...	EUR	
70 723 208 / 70 722 208	T08		7,80	**110**	M2,5x5	2,57	**116**
70 723 210 / 70 722 210	T08		7,80	**110**	M2,5x5	2,57	**116**
70 723 212 / 70 722 212	T08		7,80	**110**	M2,5x5	2,57	**116**
70 723 216 / 70 722 216	T08		7,80	**110**	M2,5x5	2,57	**116**

MaxiLock-S – SCMC 50° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions



ISO designation	DCONMS	H	OAL	LF	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 707 ...		Right-hand 2A Article no. 70 706 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A0608H SCMC R/L 06	8	7,5	104,15	100	20	5,5	10,5	1,2	CC.. 0602	190,90	**008**	190,90	**008**
E-A0810H SCMC R/L 06	10	9,0	114,15	110	26	6,0	11,0	1,2	CC.. 0602	190,90	**010**	190,90	**010**
E-A1012K SCMC R/L 06	12	11,0	129,15	125	32	7,0	13,0	1,2	CC.. 0602	190,90	**012**	190,90	**012**
E-A1216M SCMC R/L 06	16	15,0	154,15	150	40	9,0	16,0	1,2	CC.. 0602	190,90	**016**	190,90	**016**

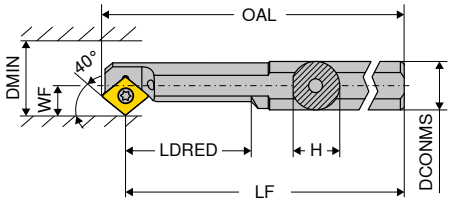
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 706 008 / 70 707 008	7,80	**110**	2,57	**116**
70 706 010 / 70 707 010	7,80	**110**	2,57	**116**
70 706 012 / 70 707 012	7,80	**110**	2,57	**116**
70 706 016 / 70 707 016	7,80	**110**	2,57	**116**

9

MaxiLock-S – SCXC 40° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions

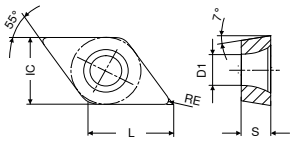


ISO designation	DCONMS	H	OAL	LF	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 715 ...		Right-hand 2A Article no. 70 714 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A0608H SCXC R/L 06	8	7,5	105	100	20	5	9,5	1,2	CC.. 0602	190,90	**008**	190,90	**008**
E-A0810H SCXC R/L 06	10	9,0	115	110	26	6	11,0	1,2	CC.. 0602	190,90	**010**	190,90	**010**
E-A1012K SCXC R/L 06	12	11,0	130	125	32	7	13,0	1,2	CC.. 0602	190,90	**012**	190,90	**012**
E-A1216M SCXC R/L 06	16	15,0	155	150	40	9	16,0	1,2	CC.. 0602	190,90	**016**	190,90	**016**

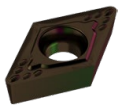
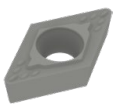
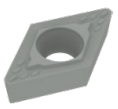
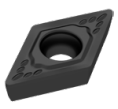
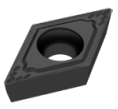
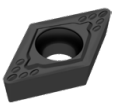
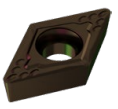
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 714 008 / 70 715 008	7,80	**110**	2,57	**116**
70 714 010 / 70 715 010	7,80	**110**	2,57	**116**
70 714 012 / 70 715 012	7,80	**110**	2,57	**116**
70 714 016 / 70 715 016	7,80	**110**	2,57	**116**

DCGT / DCMT / DCXT / DCET

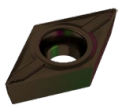
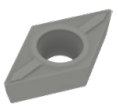
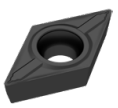
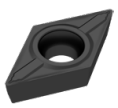
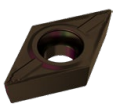
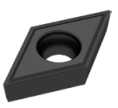
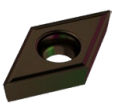
Designation	L	S	D1	IC
	mm	mm	mm	mm
DC.T 0702..	7,75	2,38	2,8	6,35
DC.T 11T3..	11,60	3,97	4,4	9,52



DCGT / DCMT

	-CF05 CTEP110	-SF TCM10	-SF TCM407	-SF CTCP125	-SF CTCP115	-SF CTCP125	-SF CTCP135
	-PF14 DCC1110	-ZF CWC10	-ZF CWC407	-ZF HCX1125	-ZF HCX1115	-ZF HCX1125	-ZF HCR1135
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET DCGT 1A/78	CERMET DCGT 1A/78	CERMET DCGT 1A/78	DCGT 1A/08	DCMT 1A/08	DCMT 1A/08	DCMT 1A/08
ISO / RE mm	Article no. 76 245 ... EUR	Article no. 70 257 ... EUR	Article no. 70 257 ... EUR	Article no. 76 257 ... EUR	Article no. 76 259 ... EUR	Article no. 76 259 ... EUR	Article no. 76 259 ... EUR
070201EN 0,1		13,43 898					
070202EN 0,2	13,86 002	13,43 900		13,86 502			
070204EN 0,4	13,86 004	13,43 902	13,43 852		7,78 304	7,78 504	7,78 704
11T302EN 0,2	18,35 014	17,12 904	17,12 854				
11T304EN 0,4	18,35 016	17,12 906	17,12 856		10,93 316	10,93 516	10,93 716
11T308EN 0,8	18,35 018	17,12 908	17,12 858		10,93 318	10,93 518	10,93 718
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○	○	○	
Non ferrous metals							
Heat resistant alloys							○

DCMT / DCGT

	-CF55 CTEP110	-SMF TCM10	-SMF CTCP115	-SMF CTCP125	-SMF CTCP135	-SM CTCP125	-SM CTCP135
	-PF15 DCC1110	-SMF CWC10	-SMF HCX1115	-SMF HCX1125	-SMF HCR1135	-ZM HCX1125	-ZM HCR1135
	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	M	M
	CERMET DCMT 1A/78	CERMET DCMT 1A/78	DCMT 1A/08	DCMT 1A/08	DCMT 1A/08	DCGT 1A/08	DCGT 1A/08
ISO / RE mm	Article no. 76 246 ... EUR	Article no. 70 265 ... EUR	Article no. 76 265 ... EUR	Article no. 76 265 ... EUR	Article no. 76 265 ... EUR	Article no. 76 256 ... EUR	Article no. 76 256 ... EUR
070202EN 0,2	7,87 002	7,28 898				13,86 502	13,86 702
070204EN 0,4	7,87 004	7,28 900		7,78 504	7,78 704		
070208EN 0,8					7,78 706		
11T304EN 0,4	10,91 016	10,22 904	10,93 316	10,93 516	10,93 716		
11T308EN 0,8	10,91 018	10,22 906	10,93 318	10,93 518	10,93 718		
Steel	●	●	●	●	●	●	●
Stainless steel	○		○	○	○	○	○
Cast iron	○	○	○	○		○	
Non ferrous metals							
Heat resistant alloys					○		○

DCMT

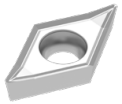
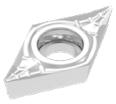
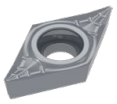
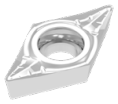
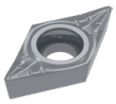
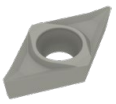
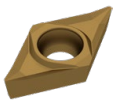
ISO	RE mm	-SM CTCK110 -ZM DCX3110 DRAGONSKIN		-SM CTCK120 -ZM HCF3120 DRAGONSKIN		-SM CTCP115 -ZM HCX1115 DRAGONSKIN		-SM CTCP125 -ZM HCX1125 DRAGONSKIN		-SM CTCP135 -ZM HCR1135 DRAGONSKIN		-SMQ CTCP115 -SMQ HCX1115 DRAGONSKIN		-SMQ CTCP125 -SMQ HCX1125 DRAGONSKIN	
		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08	
		Article no. 70 258 ...		Article no. 70 258 ...		Article no. 76 258 ...		Article no. 76 258 ...		Article no. 76 258 ...		Article no. 76 195 ...		Article no. 76 195 ...	
		EUR		EUR		EUR		EUR		EUR		EUR		EUR	
070204EN	0,4	7,78	004	7,78	554	7,78	304	7,78	504	7,78	704	8,87	304	8,87	504
070208EN	0,8	7,78	006	7,78	506	7,78	306	7,78	506	7,78	706				
11T304EL	0,4													12,19	516
11T304EN	0,4	10,93	016	10,93	516	10,93	316	10,93	516	10,93	716			12,19	515
11T304ER	0,4													12,19	517
11T308EN	0,8	10,93	018	10,93	518	10,93	318	10,93	518	10,93	718			12,19	518
11T312EN	1,2							10,93	520						
Steel		●		●		●		●		●		●		●	
Stainless steel		○				○		○		○		○		○	
Cast iron		●		●		○		○				○		○	
Non ferrous metals															
Heat resistant alloys										○					

9

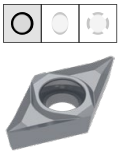
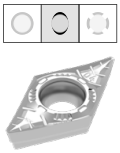
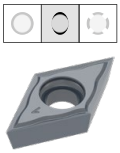
DCGT / DCMT / DCXT

ISO	RE mm	-SF CTC2135 -ZF CWN2135		-SF CTC2135 -ZF CWN2135		-F43 CTC2135 -F43 CWN2135		-M81 CWN2120		-M25 CTPM125 -PF23 HCN2125 DRAGONSKIN		-SM CTC2135 -ZM CWN2135		-M55 CTPM125 -PF26 HCN2125 DRAGONSKIN	
		F DCGT 1A/08		F DCMT 1A/08		F DCMT 1A/08		M DCXT 1A		F DCMT 1A/08		M DCMT 1A/08		F DCMT 1A/08	
		Article no. 70 257 ...		Article no. 70 259 ...		Article no. 70 186 ...		Article no. 70 260 ...		Article no. 75 213 ...		Article no. 70 258 ...		Article no. 75 214 ...	
		EUR		EUR		EUR		EUR		EUR		EUR		EUR	
070202EN	0,2	13,86	440			7,54	400			7,78	202				
070202FN	0,2							9,85	100						
070204EN	0,4			7,54	440	7,54	402			7,78	204	7,54	440	7,78	204
070204FN	0,4							9,85	102						
070208EN	0,8											7,54	442	7,78	206
11T302EN	0,2					10,91	404			10,91	214				
11T302FN	0,2							10,23	104						
11T304EN	0,4			10,91	444	10,91	406			10,93	216	10,91	444	10,93	216
11T304FN	0,4							10,23	106						
11T308EN	0,8			10,91	446	10,91	408			10,93	218	10,91	448	10,93	218
11T308FN	0,8							10,23	108						
Steel		○		○		○				○		○		○	
Stainless steel		●		●		●		●		●		●		●	
Cast iron															
Non ferrous metals								○							
Heat resistant alloys		●		●		●						●			

DCGT

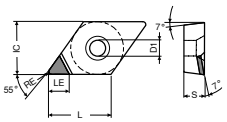
	-23P H216T	-25P H210T	-25P AMZ	-25Q H210T	-25Q AMZ	-27 H10T	-27 CWN15
	-23P CWK26	-25P CWK20	-25P AMZ	-25Q CWK20	-25Q AMZ	-AL CWK15	-AL CWN15
							
	F	F	F	M	M	M	M
	DCGT	DCGT	DCGT	DCGT	DCGT	DCGT	DCGT
	1A/90	1A/90	1A/90	1A/90	1A	1A/90	1A
ISO / RE mm	Article no. 70 261 ... EUR	Article no. 70 263 ... EUR	Article no. 70 263 ... EUR	Article no. 70 263 ... EUR	Article no. 70 263 ... EUR	Article no. 70 260 ... EUR	Article no. 70 260 ... EUR
070202FN 0,2		9,83 632	11,75 552			9,29 600	11,89 300
070204FN 0,4	9,83 654	9,83 634	11,75 554			9,29 602	11,89 302
11T302FN 0,2		12,19 635	14,21 535			11,63 604	14,06 304
11T304FL 0,4				13,31 670	16,97 620		
11T304FN 0,4	12,19 664	12,19 636	14,21 556	13,31 660	16,97 610	11,63 606	14,06 306
11T304FR 0,4				13,31 680	16,97 630		
11T308FL 0,8				13,31 672	16,97 622		
11T308FN 0,8	12,19 666	12,19 638	14,21 558	13,31 662	16,97 612	11,63 608	14,06 308
11T308FR 0,8				13,31 682	16,97 642		
Steel			○		○		
Stainless steel			○		○		○
Cast iron	○	○	○	○	○	○	
Non ferrous metals	●	●	●	●	●	●	●
Heat resistant alloys	○	○		○		○	

DCGT / DCMT / DCET

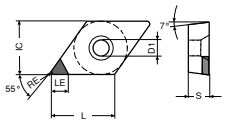
	-27 AMZ	-29 H216T	-29 AMZ	-F05 CTPX710	-F23 CTP2120
	-AL AMZ				-F23 CCN2120
					
	M	M	M	F	F
	DCGT	DCMT	DCMT	DCET	DCGT
	1A/90	NEW 1A/90	NEW 1A/90	NEW 1H/17	1A/08
ISO / RE mm	Article no. 70 260 ... EUR	Article no. 70 246 ... EUR	Article no. 70 246 ... EUR	Article no. 76 254 ... EUR	Article no. 70 192 ... EUR
0702005FN 0,05				16,76 10200	
070200FN 0,00					13,86 600
0702015FN 0,15				16,76 10600	
070201FN 0,10				16,76 10400	13,86 602
070202FN 0,20	11,29 450			16,76 10800	
070204EN 0,40		7,12 60400	8,76 40400		
070204FN 0,40	11,29 452				
11T3005FN 0,05				22,22 11400	
11T300FN 0,00					18,68 604
11T3015FN 0,15				22,22 11800	
11T301FN 0,10				22,22 11600	18,68 606
11T302FN 0,20	13,66 454			22,22 12000	
11T304EN 0,40		9,60 61600	10,95 41600		
11T304FN 0,40	13,66 456				
11T304N 0,40				22,22 12200	
11T308EN 0,80		9,60 61800	10,95 41800		
11T308FN 0,80	13,66 458				
Steel	○		○	●	
Stainless steel	○		○	●	●
Cast iron	○	○	○	○	○
Non ferrous metals	●	●	●	○	○
Heat resistant alloys		○		●	●

DCGW / DCGT

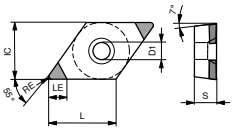
Designation	L	S	D1	IC
	mm	mm	mm	mm
DCG. 0702..	7,75	2,38	2,8	6,35
DCG. 11T3..	11,60	3,97	4,4	9,52



DCGT -A

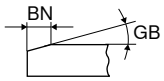


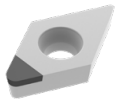
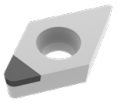
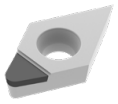
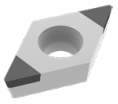
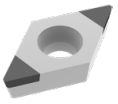
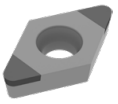
DCGW -A



DCGW-B

DCGW / DCGT

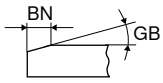


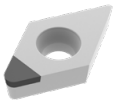
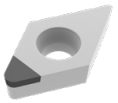
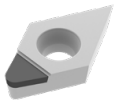
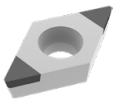
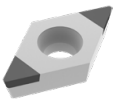
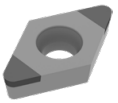
	-A CTBS10U	-A CTBS10U	-A CTBS10U	-B CTBS10U	-B CTBS10U	-B CTBS20C
	PBC10	PBC10	PBC10	-2S PBC10	-2S PBC10	-2MC PBC15-S
						
	F	F	F	F	F	F
	CBN DCGW	CBN DCGW	CBN DCGT	CBN DCGW	CBN DCGW	CBN DCGW
	Y0	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 130 ...	Article no. 71 130 ...	Article no. 71 134 ...	Article no. 71 131 ...	Article no. 71 131 ...	Article no. 71 163 ...
RE mm	EUR	EUR	EUR	EUR	EUR	EUR
GB °						
BN mm						
LE mm						
070202SN 0,2 10 0,09 3,9						55,21 120
070202SN 0,2 15 0,11 3,9						55,21 130
070202TN 0,2 20 0,14 3,9		34,55 300				
070202TN 0,2 20 0,15 3,9						55,21 140
070202SN 0,2 20 0,16 3,9						55,21 150
070202TN 0,2 25 0,17 3,9						55,21 160
070202FN 0,2 3,9	34,55 200		38,15 200			
070204SN 0,4 10 0,09 3,5						55,21 121
070204SN 0,4 15 0,11 3,5						55,21 131
070204TN 0,4 20 0,14 3,5		34,55 302				
070204TN 0,4 20 0,15 3,5						55,21 141
070204SN 0,4 20 0,16 3,5						55,21 151
070204TN 0,4 25 0,17 3,5						55,21 161
070204SN 0,4 30 0,18 3,5						55,21 181
070204FN 0,4 3,5	34,55 202		38,15 202			
070208SN 0,8 15 0,11 3,0						55,21 132
070208TN 0,8 20 0,14 3,0		34,55 304				
070208TN 0,8 20 0,15 3,0						55,21 142
070208SN 0,8 20 0,16 3,0						55,21 152
070208TN 0,8 25 0,17 3,0						55,21 162
070208SN 0,8 25 0,18 3,0						55,21 172
070208EN 0,8 3,0						55,21 112
070208FN 0,8 3,0	34,55 204		38,15 204			
11T302SN 0,2 15 0,11 3,9						55,21 133
11T302TN 0,2 20 0,14 3,9		34,55 306			54,36 300	
11T302TN 0,2 20 0,15 3,9						55,21 143
11T302SN 0,2 20 0,16 3,9						55,21 153
Cast iron	●	●	●	●	●	●
Sintered steels	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened < 45 HRC						
hardened 46–55 HRC						
hardened 56–60 HRC						
hardened 61–65 HRC						

9

→ v_c Page 160–167
Continued on next page

DCGW / DCGT

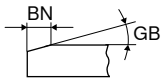


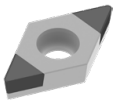
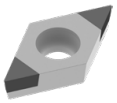
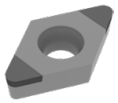
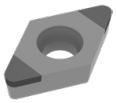
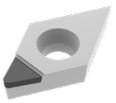
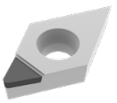
	-A CTBS10U	-A CTBS10U	-A CTBS10U	-B CTBS10U	-B CTBS10U	-B CTBS20C
	PBC10	PBC10	PBC10	-2S PBC10	-2S PBC10	-2MC PBC15-S
						
	F	F	F	F	F	F
	CBN DCGW	CBN DCGW	CBN DCGT	CBN DCGW	CBN DCGW	CBN DCGW
	Y0	Y0	Y0	Y0	Y0	Y0
	Article no. 71 130 ...	Article no. 71 130 ...	Article no. 71 134 ...	Article no. 71 131 ...	Article no. 71 131 ...	Article no. 71 163 ...
	EUR	EUR	EUR	EUR	EUR	EUR

ISO	RE mm	GB °	BN mm	LE mm												
11T302TN	0,2	25	0,17	3,9											55,21	163
11T302FN	0,2			3,9	34,55	206			39,43	206	54,36	200				
11T302EN	0,2			3,9											55,21	113
11T304SN	0,4	10	0,09	3,5											55,21	124
11T304TN	0,4	20	0,14	3,5			34,55	308					54,36	302		
11T304TN	0,4	20	0,15	3,5											55,21	144
11T304SN	0,4	20	0,16	3,5											55,21	154
11T304TN	0,4	25	0,17	3,5											55,21	164
11T304SN	0,4	25	0,18	3,5											55,21	174
11T304SN	0,4	30	0,18	3,5											55,21	184
11T304FN	0,4			3,5	34,55	208			39,43	208	54,36	202				
11T308SN	0,8	15	0,11	3,0											55,21	135
11T308TN	0,8	20	0,14	3,0			34,55	310					54,36	304		
11T308TN	0,8	20	0,15	3,0											55,21	145
11T308SN	0,8	20	0,16	3,0											55,21	155
11T308TN	0,8	25	0,17	3,0											55,21	165
11T308SN	0,8	30	0,18	3,0											55,21	185
11T308FN	0,8			3,0	34,55	210			39,43	210	54,36	204				
11T308EN	0,8			3,0											55,21	115

Cast iron	●	●	●	●	●	●
Sintered steels	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened < 45 HRC						
hardened 46–55 HRC						
hardened 56–60 HRC						
hardened 61–65 HRC						

DCGW / DCGT



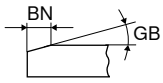
	-B CTBH15U	-B CTBH15U	-B CTBH15C	-B CTBH15C	-A CTBH21U PBC25	-A CTBH40U PBC40
						
	F	F	F	F	F	F
	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGT	CBN DCGT
	NEW Y0	NEW Y0	NEW Y0	NEW Y0	Y0	Y0
	Article no. 71 008 ...	Article no. 71 012 ...	Article no. 71 007 ...	Article no. 71 009 ...	Article no. 71 134 ...	Article no. 71 134 ...
	EUR	EUR	EUR	EUR	EUR	EUR

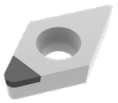
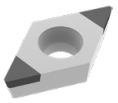
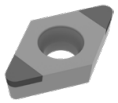
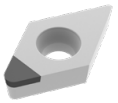
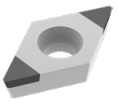
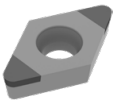
ISO	RE mm	GB °	BN mm	LE mm												
070202EN	0,2			3,9	73,61	00200			66,91	00200						
070202SN	0,2	15	0,11	3,9	69,18	30214			66,91	30214						
070202FN	0,2			3,9									38,15	400	38,15	800
070204EN	0,4			3,5	69,18	00400			66,91	00400						
070204SN	0,4	15	0,11	3,5	69,18	30414			66,91	30414						
070204SN	0,4	25	0,13	3,5	69,18	30429			66,91	30429						
070204FN	0,4			3,5									38,15	402	38,15	802
070208SN	0,8	15	0,11	3,0			69,18	30614			66,91	30614				
070208SN	0,8	25	0,13	3,0			69,18	30629			66,91	30629				
070208EN	0,8			3,0			69,18	00600			66,91	00600				
11T302SN	0,2	15	0,11	3,9					66,91	31414						
11T302RN	0,2			3,9					66,91	21400						
11T302SN	0,2	25	0,13	3,9					66,91	31429						
11T302FN	0,2			3,9									39,43	406	39,43	806
11T304SN	0,4	15	0,11	3,5					66,91	31614						
11T304SN	0,4	25	0,13	3,5					66,91	31629						
11T304RN	0,4			3,5					66,91	21600						
11T304FN	0,4			3,5									39,43	408	39,43	808
11T308RN	0,8			3,0							66,91	21800				
11T308SN	0,8	15	0,11	3,0							66,91	31814				
11T308SN	0,8	25	0,13	3,0							66,91	31829				
11T308FN	0,8			3,0									39,43	410	39,43	810

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC	●	●	●	●		
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC						●

9

DCGW

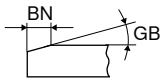


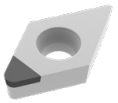
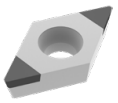
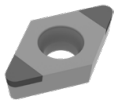
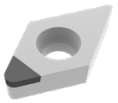
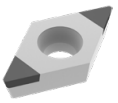
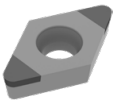
	-A CTBH21U	-B CTBH21U	-B CTBH20C	-A CTBH40U	-B CTBH40U	-B CTBH40C
	PBC25	-2S PBC25	-2MC PBC25-S	PBC40	-2S PBC40	-2MC PBC40-S
						
	F	F	F	F	F	F
	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW
	Y0	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 130 ...	Article no. 71 131 ...	Article no. 71 163 ...	Article no. 71 130 ...	Article no. 71 131 ...	Article no. 71 163 ...
RE mm / GB ° / BN mm / LE mm	EUR	EUR	EUR	EUR	EUR	EUR
070202FN 0,2 / / / 3,9	34,55 400 [1]			34,55 800		
070202SN 0,2 / 10 / 0,09 / 3,9			55,21 230			
070202SN 0,2 / 15 / 0,11 / 3,9			55,21 240			
070202SN 0,2 / 20 / 0,09 / 3,9			55,21 250			
070202TN 0,2 / 20 / 0,09 / 3,9						55,21 320
070202TN 0,2 / 20 / 0,14 / 3,9	34,55 500					
070202SN 0,2 / 25 / 0,09 / 3,9						55,21 350
070202TN 0,2 / 25 / 0,11 / 3,9						55,21 340
070202TN 0,2 / 25 / 0,12 / 3,9				34,55 900		
070202TN 0,2 / 25 / 0,14 / 3,9			55,21 260			
070202TN 0,2 / 30 / 0,14 / 3,9						55,21 360
070202SN 0,2 / 30 / 0,16 / 3,9						55,21 370
070202SN 0,2 / 35 / 0,17 / 3,9						55,21 380
070202EN 0,2 / / / 3,9						55,21 310
070204SN 0,4 / 10 / 0,09 / 3,5			55,21 231			
070204SN 0,4 / 15 / 0,11 / 3,5			55,21 241			
070204SN 0,4 / 20 / 0,09 / 3,5			55,21 251			55,21 331
070204TN 0,4 / 20 / 0,14 / 3,5	34,55 502					
070204SN 0,4 / 25 / 0,09 / 3,5						55,21 351
070204TN 0,4 / 25 / 0,11 / 3,5						55,21 341
070204TN 0,4 / 25 / 0,12 / 3,5				34,55 902		
070204TN 0,4 / 25 / 0,14 / 3,5			55,21 261			
070204SN 0,4 / 25 / 0,15 / 3,5			55,21 271			
070204TN 0,4 / 30 / 0,14 / 3,5						55,21 361
070204SN 0,4 / 30 / 0,16 / 3,5						55,21 371
070204SN 0,4 / 35 / 0,17 / 3,5						55,21 381
070204FN 0,4 / / / 3,5	34,55 402 [1]		55,21 211	34,55 802		
070208SN 0,8 / 10 / 0,09 / 3,0			55,21 232			
070208SN 0,8 / 20 / 0,09 / 3,0			55,21 252			55,21 332
070208TN 0,8 / 20 / 0,14 / 3,0	34,55 504					
070208SN 0,8 / 25 / 0,09 / 3,0						55,21 352
070208TN 0,8 / 25 / 0,11 / 3,0						55,21 342
070208TN 0,8 / 25 / 0,12 / 3,0				34,55 904		
070208TN 0,8 / 25 / 0,14 / 3,0			55,21 262			
070208TN 0,8 / 30 / 0,14 / 3,0						55,21 362
070208SN 0,8 / 30 / 0,16 / 3,0						55,21 372
070208SN 0,8 / 35 / 0,17 / 3,0						55,21 382
070208FN 0,8 / / / 3,0	34,55 404 [1]		55,21 212	34,55 804		
070208EN 0,8 / / / 3,0			55,21 222			55,21 312
11T302FN 0,2 / / / 3,9	34,55 406 [1]	54,36 400 [1]		34,55 806	54,36 800 [1]	
11T302SN 0,2 / 15 / 0,09 / 3,9			55,21 233			
11T302SN 0,2 / 15 / 0,11 / 3,9			55,21 243			
11T302SN 0,2 / 20 / 0,09 / 3,9			55,21 253			
11T302TN 0,2 / 20 / 0,09 / 3,9						55,21 323

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC				●	●	●

1) Machining to 60 HRC

DCGW



	-A CTBH21U	-B CTBH21U	-B CTBH20C	-A CTBH40U	-B CTBH40U	-B CTBH40C
	PBC25	-2S PBC25	-2MC PBC25-S	PBC40	-2S PBC40	-2MC PBC40-S
						
	F	F	F	F	F	F
	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW	CBN DCGW
	Y0	Y0	Y0	Y0	Y0	Y0
	Article no. 71 130 ...	Article no. 71 131 ...	Article no. 71 163 ...	Article no. 71 130 ...	Article no. 71 131 ...	Article no. 71 163 ...
	EUR	EUR	EUR	EUR	EUR	EUR

ISO	RE mm	GB °	BN mm	LE mm	-A CTBH21U PBC25 EUR		-B CTBH21U -2S PBC25 EUR		-B CTBH20C -2MC PBC25-S EUR		-A CTBH40U PBC40 EUR		-B CTBH40U -2S PBC40 EUR		-B CTBH40C -2MC PBC40-S EUR	
11T302TN	0,2	20	0,14	3,9	34,55	506	54,36	500								
11T302SN	0,2	25	0,09	3,9											55,21	353
11T302TN	0,2	25	0,11	3,9											55,21	343
11T302TN	0,2	25	0,12	3,9							34,55	906	54,36	900		
11T302TN	0,2	25	0,14	3,9					55,21	263						
11T302SN	0,2	25	0,15	3,9					55,21	273						
11T302TN	0,2	30	0,14	3,9											55,21	363
11T302SN	0,2	35	0,17	3,9											55,21	383
11T302EN	0,2			3,9											55,21	313
11T304FN	0,4			3,5	34,55	408 [1]	54,36	402 [1]	55,21	214	34,55	808	54,36	802 [1]		
11T304SN	0,4	10	0,09	3,5					55,21	234						
11T304SN	0,4	15	0,11	3,5					55,21	244						
11T304SN	0,4	20	0,09	3,5					55,21	254					55,21	334
11T304TN	0,4	20	0,09	3,5											55,21	324
11T304TN	0,4	20	0,14	3,5	34,55	508	54,36	502								
11T304SN	0,4	25	0,09	3,5											55,21	354
11T304TN	0,4	25	0,11	3,5											55,21	344
11T304TN	0,4	25	0,12	3,5							34,55	908	54,36	902		
11T304TN	0,4	25	0,14	3,5					55,21	264						
11T304SN	0,4	25	0,15	3,5					55,21	274						
11T304TN	0,4	30	0,14	3,5											55,21	364
11T304SN	0,4	30	0,16	3,5											55,21	374
11T304SN	0,4	30	0,18	3,5					55,21	284						
11T304SN	0,4	35	0,17	3,5											55,21	384
11T304EN	0,4			3,5					55,21	224					55,21	314
11T308SN	0,8	15	0,11	3,0					55,21	245						
11T308SN	0,8	20	0,09	3,0					55,21	255					55,21	335
11T308TN	0,8	20	0,09	3,0											55,21	325
11T308TN	0,8	20	0,14	3,0	34,55	510	54,36	504								
11T308SN	0,8	25	0,09	3,0											55,21	355
11T308TN	0,8	25	0,11	3,0											55,21	345
11T308TN	0,8	25	0,12	3,0							34,55	910	54,36	904		
11T308TN	0,8	25	0,14	3,0					55,21	265						
11T308TN	0,8	30	0,14	3,0											55,21	365
11T308SN	0,8	30	0,16	3,0											55,21	375
11T308SN	0,8	30	0,18	3,0					55,21	285						
11T308SN	0,8	35	0,17	3,0											55,21	385
11T308EN	0,8			3,0					55,21	225						
11T308FN	0,8			3,0	34,55	410 [1]	54,36	404 [1]	55,21	215			54,36	804 [1]		

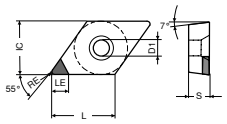
Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC				●	●	●

1) Machining to 60 HRC

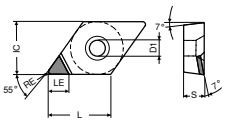
9

DCGW / DCGT

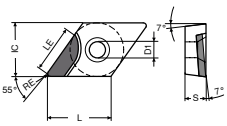
Designation	L	S	D1	IC
	mm	mm	mm	mm
DCG. 0702..	7,75	2,38	2,8	6,35
DCG. 11T3..	11,60	3,97	4,4	9,52



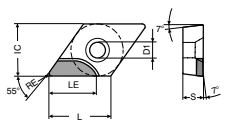
DCGW -A



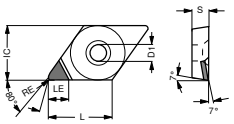
DCGT -A



DCGT-L

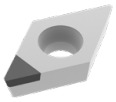
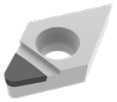
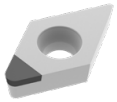
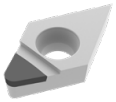
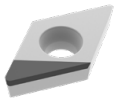
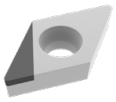


DCGT-R

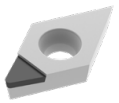
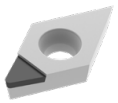
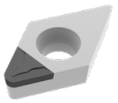
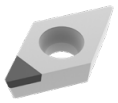
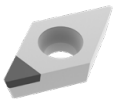


DCGT -Q-A (-2Q)

DCGW / DCGT

	-A CTDMD05	-A CTDMD05	-A CTDPD20	-A CTDPD20	-A CTDPD20	-A CTDPD20
	MDC	MDC	PDC	PDC	PDC	PDC
						
	F	F	F	F	F	F
	DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT
	Y0	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 130 ...	Article no. 71 134 ...	Article no. 71 130 ...	Article no. 71 134 ...	Article no. 71 135 ...	Article no. 71 136 ...
RE mm / LE mm	EUR	EUR	EUR	EUR	EUR	EUR
070202FN 0,2 2,5		283,00 050				
070202FN 0,2 3,7			48,64 100	48,64 100		
070204FN 0,4 2,5		283,00 052				
070204FN 0,4 3,4			48,64 102	48,64 102		
070204FRR 0,4 5,5					67,61 102	
070204FLL 0,4 5,5						67,61 102
070208FN 0,8 2,5		283,00 054				
070208FN 0,8 3,0			48,64 104	48,64 104		
070208FRR 0,8 5,0					67,61 104	
070208FLL 0,8 5,0						67,61 104
11T302FN 0,2 2,5		283,00 056				
11T302FN 0,2 3,0	260,70 056					
11T302FN 0,2 4,7			52,14 106	52,14 106		
11T304FN 0,4 2,5		283,00 058				
11T304FN 0,4 3,0	260,70 058					
11T304FN 0,4 4,3			52,14 108	52,14 108		
11T304FRR 0,4 7,5					73,02 108	
11T304FLL 0,4 7,5						73,02 108
11T308FN 0,8 2,5		283,00 060				
11T308FN 0,8 4,0			52,14 110	52,14 110		
11T308FRR 0,8 7,0					73,02 110	
11T308FLL 0,8 7,0						73,02 110
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	○	○				

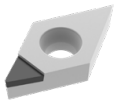
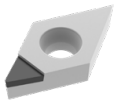
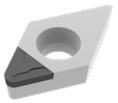
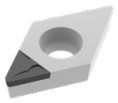
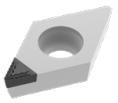
DCGT / DCGW

ISO	RE	LE	-Q-A CTDPD20 -2Q PDC		-Q-A CTDPD20 -2Q PDC		-A-CB1 CTDPD20 -CB1 PDC		-Q-A CTDPS30 -2Q PDC-S		-Q-A CTDPS30 -2Q PDC-S	
												
			F DIAMOND DCGT Y0		F DIAMOND DCGT Y0		F DIAMOND DCGT Y0		F DIAMOND DCGW Y0		F DIAMOND DCGW Y0	
			Article no. 71 144 ...		Article no. 71 145 ...		Article no. 71 310 ...		Article no. 71 138 ...		Article no. 71 139 ...	
	mm	mm	EUR		EUR		EUR		EUR		EUR	
070202FN	0,2	3,7					60,09	**102**				
070204FL	0,4	3,0			60,51	**104**						
070204FR	0,4	3,0	60,51	**104**								
070204FN	0,4	3,4					60,09	**104**				
070208FN	0,8	3,0					66,24	**108**				
11T302FR	0,2	4,0							63,91	**162**		
11T302FN	0,2	4,7					63,91	**112**				
11T304FR	0,4	4,0	63,91	**114**					63,91	**164**		
11T304FL	0,4	4,0			63,91	**114**					63,91	**164**
11T304FN	0,4	4,3					63,91	**114**				
11T308FN	0,8	4,0					71,10	**118**				

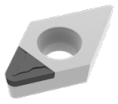
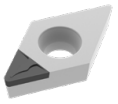
Steel												
Stainless steel												
Cast iron												
Non ferrous metals			●		●		●		●		●	
Heat resistant alloys									○		○	

9

DCGT

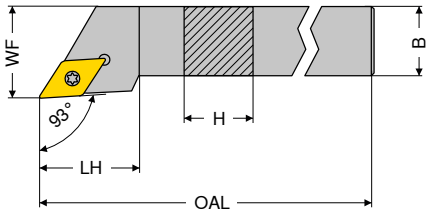
ISO	RE	LE	-Q-A CTDPS30 -2Q PDC-S		-Q-A CTDPS30 -2Q PDC-S		-A-CB1 CTDPS30 -CB1 PDC-S		-A-CB2 CTDPS30 -CB2 PDC-S		-A-CB3 CTDPU20 -CB3 PDC-S	
												
			F DIAMOND DCGT Y0		F DIAMOND DCGT Y0		F DIAMOND DCGT Y0		M DIAMOND DCGT Y0		R DIAMOND DCGT Y0	
			Article no. 71 144 ...		Article no. 71 145 ...		Article no. 71 310 ...		Article no. 71 311 ...		Article no. 71 312 ...	
	mm	mm	EUR		EUR		EUR		EUR		EUR	
070201FL	0,1	3,0			60,51	151						
070202FL	0,2	3,0			60,51	152						
070202FR	0,2	3,0	60,51	152								
070202FN	0,2	3,7					60,09	202				
070202EN	0,2	3,7							60,09	202		
070204FN	0,4	3,4					60,09	204				
070204EN	0,4	3,4							60,09	204	60,09	204
070208EN	0,8	3,0							66,24	208		
11T301FL	0,1	4,0			63,91	161						
11T301FR	0,1	4,0	63,91	161								
11T302FR	0,2	4,0	63,91	162								
11T302FL	0,2	4,0			63,91	162						
11T302FN	0,2	4,7					63,91	212				
11T302EN	0,2	4,7							63,91	212		
11T304FN	0,4	4,3					63,91	214				
11T304EN	0,4	4,3							63,91	214	63,91	214
11T308EN	0,8	4,0							71,10	218	71,10	218
11T308FN	0,8	4,0					71,10	218				
Steel												
Stainless steel												
Cast iron												
Non ferrous metals			●		●		●		●		●	
Heat resistant alloys			○		○		○		○		○	

DCGT

ISO	RE	LE	-A-CB1 CTDCD10 -CB1 CVD		-A-CB2 CTDCD10 -CB2 CVD	
						
			F DIAMOND DCGT Y0		M DIAMOND DCGT Y0	
			Article no. 71 310 ...		Article no. 71 311 ...	
	mm	mm	EUR		EUR	
070202FN	0,2	2,6	77,37	302		
070204FN	0,4	2,3	77,37	304		
070204EN	0,4	2,3			77,37	304
070208EN	0,8	2,0			83,62	308
11T304EN	0,4	2,3			78,63	314
11T304FN	0,4	2,3	78,63	314		
11T308EN	0,8	2,0			84,78	318
11T308FN	0,8	2,0	84,78	318		
Steel						
Stainless steel						
Cast iron						
Non ferrous metals			●		●	
Heat resistant alloys						

MaxiLock-S – SDJC 93° – Toolholder with screw clamping







Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 685 ...		Right-hand 2A/24 Article no. 70 684 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SDJC R/L 0808 D07	8	8	60	13,0	10	1,2	DC.. 0702	60,92	**008**	60,92	**008**
SDJC R/L 1010 E07	10	10	70	13,0	12	1,2	DC.. 0702	64,59	**010**	64,59	**010**
SDJC R/L 1212 F07	12	12	80	14,5	16	1,2	DC.. 0702	64,59	**012**	64,59	**012**
SDJC R/L 1616 H11	16	16	100	20,0	20	3,2	DC.. 11T3	80,00	**016**	80,00	**016**
SDJC R/L 2020 K11	20	20	125	20,5	25	3,2	DC.. 11T3	85,04	**020**	85,04	**020**
SDJC R/L 2525 M11	25	25	150	21,5	32	3,2	DC.. 11T3	87,97	**025**	87,97	**025**
SDJC R/L 3225 P11	32	25	170	21,5	32	3,2	DC.. 11T3	91,44	**032**	91,44	**032**

Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

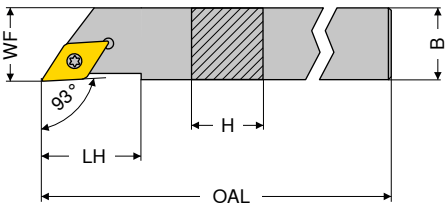
Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
Insert	EUR		EUR		EUR		EUR		EUR	
DC.. 0702	7,80	**110**			2,36	**112**				
DC.. 11T3			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**

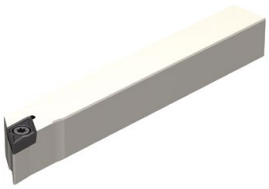
9

MaxiLock-S – SDJC 93° – Toolholder with screw clamping

▲ for sliding head lathes







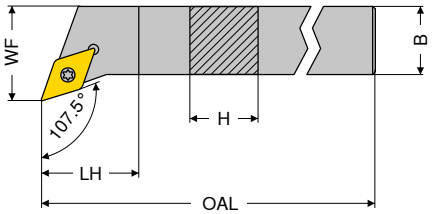
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand X0 Article no. 70 685 ...		Right-hand X0 Article no. 70 684 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SDJC R/L 0808 H07	8	8	100	13,0	8	1,2	DC.. 0702	78,43	**108**	78,43	**108**
SDJC R/L 1010 H07	10	10	100	13,0	10	1,2	DC.. 0702	78,43	**110**	78,43	**110**
SDJC R/L 1212 H07	12	12	100	14,5	12	1,2	DC.. 0702	88,08	**112**	88,08	**112**
SDJC R/L 1616 K07	16	16	125	33,0	16	1,2	DC.. 0702	97,42	**116**	97,42	**116**
SDJC R/L 1212 H11	12	12	100	22,0	12	3,2	DC.. 11T3	88,08	**212**	88,08	**212**
SDJC R/L 1616 K11	16	16	125	33,0	16	3,2	DC.. 11T3	97,42	**216**	97,42	**216**

Spare parts		Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 72 950 ...	
Insert		EUR		EUR	
DC.. 0702	T08	7,80	**110**	4,80	**002**
DC.. 11T3	T15	9,28	**113**	4,80	**006**

MaxiLock-S – SDHC 107.5° – Toolholder with screw clamping







Illustrations show right-hand versions

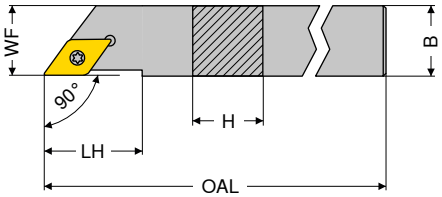
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 689 ...		Right-hand 2A/24 Article no. 70 688 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SDHC R/L 1010 E07	10	10	70	5,5	12	1,2	DC.. 0702	64,59	**010**	64,59	**010**
SDHC R/L 1212 F07	12	12	80	12,0	16	1,2	DC.. 0702	64,59	**012**	64,59	**012**
SDHC R/L 1616 H11	16	16	100	10,4	20	3,2	DC.. 11T3	80,00	**016**	80,00	**016**
SDHC R/L 2020 K11	20	20	125	14,0	32	3,2	DC.. 11T3	85,04	**020**	85,04	**020**
SDHC R/L 2525 M11	25	25	150	20,0	32	3,2	DC.. 11T3	87,97	**025**	87,97	**025**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 689 010 / 70 688 010	7,80	**110**			2,36	**112**				
70 689 012 / 70 688 012	7,80	**110**			2,36	**112**				
70 689 016 / 70 688 016			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 689 020 / 70 688 020			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 689 025 / 70 688 025			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**

MaxiLock-S – SDAC 90° – Toolholder with screw clamping

▲ for sliding head lathes







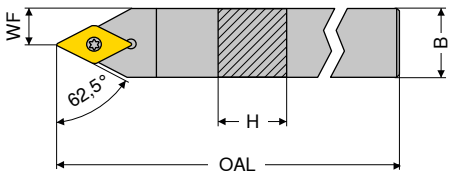
Illustrations show right-hand versions

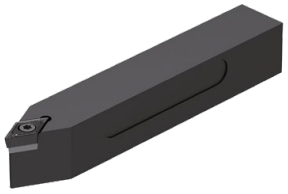
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 789 ...		Right-hand 2A/24 Article no. 70 788 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SDAC R/L 0808 K07	8	8	125	14	8	1,2	DC.. 0702	64,59	**008**	64,59	**008**
SDAC R/L 1010 M07	10	10	150	14	10	1,2	DC.. 0702	64,59	**010**	64,59	**010**
SDAC R/L 1212 M07	12	12	150	14	12	1,2	DC.. 0702	72,25	**012**	72,25	**012**
SDAC R/L 1414 M11	14	14	150	21	14	3,2	DC.. 11T3	72,25	**014**	72,25	**014**

Spare parts		Y7 Key D Article no. 80 950 ...			2A Clamping screw Article no. 70 950 ...	
for Article no.		EUR			EUR	
70 788 008 / 70 789 008	T08	7,80	**110**	M2,5x6	2,36	**112**
70 788 010 / 70 789 010	T08	7,80	**110**	M2,5x6	2,36	**112**
70 788 012 / 70 789 012	T08	7,80	**110**	M2,5x6	2,36	**112**
70 788 014 / 70 789 014	T15	9,28	**113**	M3,5x11	3,14	**113**

MaxiLock-S – SDNC 62.5° – Toolholder with screw clamping







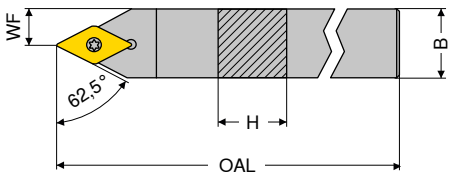
ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 680 ... EUR	
SDNC N 0808 D07	8	8	60	4,0	1,2	DC.. 0702	60,92	008
SDNC N 1010 E07	10	10	70	5,0	1,2	DC.. 0702	64,59	010
SDNC N 1212 F07	12	12	80	6,0	1,2	DC.. 0702	64,59	012
SDNC N 1616 H11	16	16	100	8,0	3,2	DC.. 11T3	80,00	016
SDNC N 2020 K11	20	20	125	10,0	3,2	DC.. 11T3	85,04	020
SDNC N 2525 M11	25	25	150	12,5	3,2	DC.. 11T3	87,97	025

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Combination Key Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
70 680 008	7,80	110			2,36	112				
70 680 010	7,80	110			2,36	112				
70 680 012	7,80	110			2,36	112				
70 680 016			8,28	398	3,14	113	7,49	106	4,64	171
70 680 020			8,28	398	3,14	113	7,49	106	4,64	171
70 680 025			8,28	398	3,14	113	7,49	106	4,64	171

9

MaxiLock-S – SDNC 62.5° – Toolholder with screw clamping







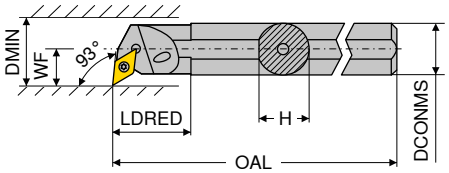
ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 784 ... EUR	
SDNC N 0808 K07	8	8	125	4	1,2	DC.. 0702	60,92	008
SDNC N 1010 M07	10	10	150	5	1,2	DC.. 0702	64,59	010
SDNC N 1212 M07	12	12	150	6	1,2	DC.. 0702	72,25	012
SDNC N 1414 M11	14	14	150	7	3,2	DC.. 11T3	72,25	014

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR			2A Clamping screw Article no. 70 950 ... EUR	
70 784 008	T08	7,80	110	M2,5x6	2,36	112
70 784 010	T08	7,80	110	M2,5x6	2,36	112
70 784 012	T08	7,80	110	M2,5x6	2,36	112
70 784 014	T15	9,28	113	M3,5x11	3,14	113

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant







Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 737 ... EUR		Right-hand 2A/24 Article no. 70 736 ... EUR	
S12Q SDUC R/L 07	12	11,0	180		9	17	1,2	DC.. 0702	96,57	**012**	96,57	**012**
A12K SDUC R/L 07	12	11,5	125	22	9	16	1,2	DC.. 0702	96,57	**212**	96,57	**212**
A16M SDUC R/L 07	16	15,0	150	29	11	20	1,2	DC.. 0702	98,67	**216**	98,67	**216**
S16R SDUC R/L 07	16	15,0	200		11	21	1,2	DC.. 0702	98,67	**016**	98,67	**016**
A20Q SDUC R/L 07	20	18,5	180	32	13	25	1,2	DC.. 0702	123,00	**220**	123,00	**220**
S20S SDUC R 07	20	18,0	250		13	25	1,2	DC.. 0702			123,00	**020**
S20S SDUC R 11	20	18,0	250		13	25	3,2	DC.. 11T3			123,00	**120**
A20Q SDUC R/L 11	20	18,5	180	32	13	25	3,2	DC.. 11T3	123,00	**320**	123,00	**320**
A25R SDUC R/L 11	25	23,0	200	36	17	32	3,2	DC.. 11T3	141,40	**325**	141,40	**325**
S25T SDUC R/L 11	25	23,0	300		17	32	3,2	DC.. 11T3	141,40	**125**	141,40	**125**
A32S SDUC R/L 11	32	30,0	250	50	22	40	3,2	DC.. 11T3	194,40	**332**	194,40	**332**
S32U SDUC R 11	32	30,0	350		22	40	3,2	DC.. 11T3			194,40	**132**
A40T SDUC R/L 11	40	38,0	300	60	27	50	3,2	DC.. 11T3	233,40	**340**	233,40	**340**

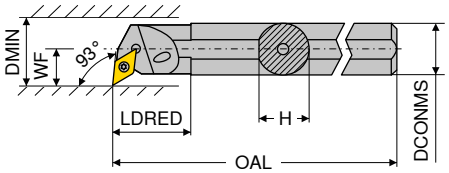
Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

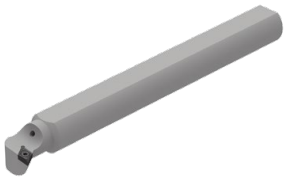
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Combination Key Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
70 736 012 / 70 737 012	7,80	**110**			2,36	**112**				
70 736 212 / 70 737 212	7,80	**110**			2,36	**112**				
70 736 216 / 70 737 216	7,80	**110**			2,36	**112**				
70 736 016 / 70 737 016	7,80	**110**			2,36	**112**				
70 736 220 / 70 737 220	7,80	**110**			2,36	**112**				
70 736 020	7,80	**110**			2,36	**112**				
70 736 120	9,28	**113**			3,14	**110**				
70 736 320 / 70 737 320	9,28	**113**			3,14	**110**				
70 736 325 / 70 737 325	9,28	**113**			3,14	**113**				
70 736 125 / 70 737 125			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 736 332 / 70 737 332			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 736 132			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 736 340 / 70 737 340			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ with carbide core







Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 739 ...		Right-hand 2A Article no. 70 738 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A10H SDUC R/L 07	10	9	100	28	8	13	1,2	DC.. 0702	179,40	**210**	179,40	**210**
E-A12K SDUC R/L 07	12	11	125	18	9	18	1,2	DC.. 0702	179,40	**212**	179,40	**212**
E-A16M SDUC R/L 07	16	15	150	30	11	22	1,2	DC.. 0702	285,20	**216**	285,20	**216**
E-A20Q SDUC R/L 07	20	18	180	38	13	26	1,2	DC.. 0702	357,60	**220**	357,60	**220**
E-A20Q SDUC R/L 11	20	18	180	38	13	26	3,2	DC.. 11T3	378,60	**320**	378,60	**320**
E-A25R SDUC R/L 11	25	23	200	38	17	34	3,2	DC.. 11T3	545,30	**225**	545,30	**225**
E-A32S SDUC R/L 11	32	30	250	43	22	39	3,2	DC.. 11T3	800,10	**232**	800,10	**232**

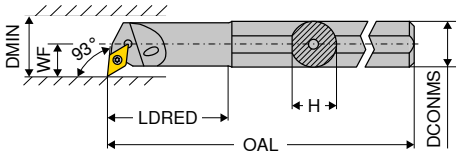
Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
for Article no.	EUR		EUR	
70 738 210 / 70 739 210	7,80	**110**	2,36	**112**
70 738 212 / 70 739 212	7,80	**110**	2,36	**112**
70 738 216 / 70 739 216	7,80	**110**	2,36	**112**
70 738 220 / 70 739 220	7,80	**110**	2,36	**112**
70 738 320 / 70 739 320	9,28	**113**	3,14	**449**
70 738 225 / 70 739 225	9,28	**113**	3,14	**449**
70 738 232 / 70 739 232	9,28	**113**	3,14	**449**

9

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ with carbide core







Illustrations show right-hand versions

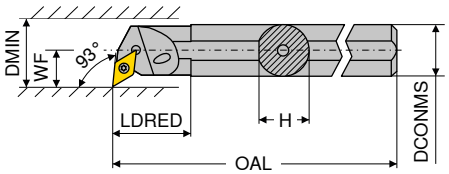
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 739 ...		Right-hand 2A Article no. 70 738 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A0810H SDUC R/L 07	10	9	100	22	7	12,5	1,2	DC.. 0702	223,40	**410**	223,40	**410**
E-A1012K SDUC R/L 07	12	11	125	28	9	15,5	1,2	DC.. 0702	223,40	**412**	223,40	**412**
E-A1216M SDUC R/L 07	16	15	150	36	11	19,5	1,2	DC.. 0702	223,40	**416**	223,40	**416**

Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
for Article no.	EUR		EUR	
70 738 410 / 70 739 410	7,80	**110**	2,36	**112**
70 738 412 / 70 739 412	7,80	**110**	2,36	**112**
70 738 416 / 70 739 416	7,80	**110**	2,36	**112**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ Type: Solid carbide







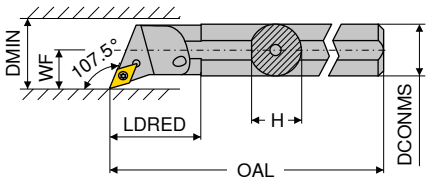
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 739 ... EUR		Right-hand 2A/24 Article no. 70 738 ... EUR	
E12Q SDUC R/L 07	12	11,5	180	26	9	16	1,2	DC.. 0702	333,20	**012**	333,20	**012**
E16R SDUC R/L 07	16	15,0	200	34	11	20	1,2	DC.. 0702	435,40	**016**	435,40	**016**
E20S SDUC R/L 11	20	18,5	250	38	13	25	3,2	DC.. 11T3	543,90	**120**	543,90	**120**
E25T SDUC R/L 11	25	23,0	300	43	17	32	3,2	DC.. 11T3	959,10	**125**	959,10	**125**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR	
70 739 012 / 70 738 012	7,80	**110**	2,36	**112**
70 739 016 / 70 738 016	7,80	**110**	2,36	**112**
70 739 120 / 70 738 120	9,28	**113**	3,14	**304**
70 739 125 / 70 738 125	9,28	**113**	3,14	**113**

MaxiLock-S – SDQC 107.5° – Boring bar with screw clamping







Illustrations show right-hand versions

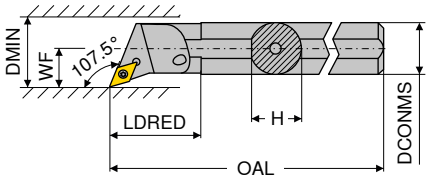
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 741 ... EUR		Right-hand 2A Article no. 70 740 ... EUR	
A10H SDQC R/L 07	10	9,0	100	22	7	12,5	1,2	DC.. 0702	96,57	**210**	96,57	**210**
A12K SDQC R/L 07	12	11,5	125	22	9	16,0	1,2	DC.. 0702	96,57	**212**	96,57	**212**
A16M SDQC R/L 07	16	15,0	150	29	11	20,0	1,2	DC.. 0702	98,67	**216**	98,67	**216**
A20Q SDQC R/L 07	20	18,5	180	32	13	25,0	1,2	DC.. 0702	123,00	**220**	123,00	**220**
A25R SDQC R/L 11	25	23,0	200	36	17	32,0	3,2	DC.. 11T3	141,40	**225**	141,40	**225**
A32S SDQC R/L 11	32	30,0	250	50	22	40,0	3,2	DC.. 11T3	194,40	**232**	194,40	**232**
A40T SDQC R/L 11	40	38,0	300	60	27	50,0	3,2	DC.. 11T3	233,40	**240**	233,40	**240**

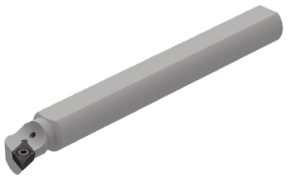
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Combination Key Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
70 740 210 / 70 741 210	7,80	**110**			2,36	**112**				
70 740 212 / 70 741 212	7,80	**110**			2,36	**112**				
70 740 216 / 70 741 216	7,80	**110**			2,36	**112**				
70 740 220 / 70 741 220	7,80	**110**			2,36	**112**				
70 740 225 / 70 741 225			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 740 232 / 70 741 232			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**
70 740 240 / 70 741 240			8,28	**398**	3,14	**113**	7,49	**106**	4,64	**171**

MaxiLock-S – SDQC 107.5° – Boring bar with screw clamping

▲ with carbide core







Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 751 ...		Right-hand 2A Article no. 70 750 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A12K SDQC R/L 07	12	11	125	24	9	18	1,2	DC.. 0702	179,40	**012**	179,40	**012**
E-A16M SDQC R/L 07	16	15	150	30	11	22	1,2	DC.. 0702	306,20	**016**	306,20	**016**
E-A20Q SDQC R/L 07	20	18	180	38	13	26	1,2	DC.. 0702	357,60	**020**	357,60	**020**
E-A20Q SDQC R/L 11	20	18	180	38	13	26	3,2	DC.. 11T3	378,60	**120**	378,60	**120**
E-A25R SDQC R/L 11	25	23	200	38	17	34	3,2	DC.. 11T3	605,10	**025**	605,10	**025**
E-A32S SDQC R/L 11	32	30	250	43	22	39	3,2	DC.. 11T3	800,10	**032**	800,10	**032**

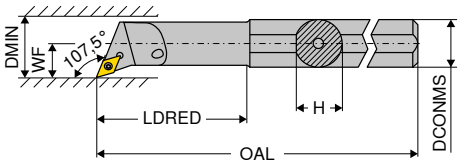
Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
for Article no.	EUR		EUR	
70 750 012 / 70 751 012	7,80	**110**	2,36	**112**
70 750 016 / 70 751 016	7,80	**110**	2,36	**112**
70 750 020 / 70 751 020	7,80	**110**	2,36	**112**
70 750 120 / 70 751 120	9,28	**113**	3,14	**449**
70 750 025 / 70 751 025	9,28	**113**	3,14	**449**
70 750 032 / 70 751 032	9,28	**113**	3,14	**449**

9

MaxiLock-S – SDQC 107.5° – Boring bar with screw clamping

▲ with carbide core







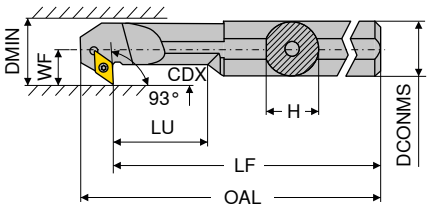
Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 751 ...		Right-hand 2A Article no. 70 750 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A0810H SDQC R/L 07	10	9	100	22	7	12,5	1,2	DC.. 0702	223,40	**210**	223,40	**210**
E-A1012K SDQC R/L 07	12	11	125	28	9	15,5	1,2	DC.. 0702	223,40	**212**	223,40	**212**
E-A1216M SDQC R/L 07	16	15	150	36	11	19,5	1,2	DC.. 0702	223,40	**216**	223,40	**216**

Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
for Article no.	EUR		EUR	
70 750 210 / 70 751 210	7,80	**110**	2,36	**112**
70 750 212 / 70 751 212	7,80	**110**	2,36	**112**
70 750 216 / 70 751 216	7,80	**110**	2,36	**112**

MaxiLock-S – SDXC 93° – Boring bar with screw clamping







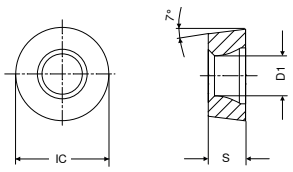
Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	LU	WF	DMIN	CDX	torque moment	Insert	Left-hand 2A/24 Article no. 70 733 ... EUR		Right-hand 2A/24 Article no. 70 732 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	Nm					
A12K SDXC R/L 07	12	11,5	125	137,0	24	9	16	4,5	1,2	DC.. 0702	96,57	**212**	96,57	**212**
A16M SDXC R/L 07	16	15,0	150	162,0	36	11	20	4,5	1,2	DC.. 0702	98,67	**216**	98,67	**216**
A20Q SDXC R/L 11	20	18,5	180	196,5	40	13	25	6,5	3,2	DC.. 11T3	123,00	**220**	123,00	**220**
A25R SDXC R/L 11	25	23,0	200	216,8	50	17	32	9,5	3,2	DC.. 11T3	141,40	**225**	141,40	**225**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR	
70 733 212 / 70 732 212	7,80	**110**	2,36	**112**
70 733 216 / 70 732 216	7,80	**110**	2,36	**112**
70 733 220 / 70 732 220	9,28	**113**	3,14	**304**
70 733 225 / 70 732 225	9,28	**113**	3,14	**304**

RCMT / RCGT

Designation	S	D1	IC
	mm	mm	mm
RCGT 0602..	2,38	2,8	6
RCGT 0803..	3,18	3,4	8
RC.T 1003..	3,18	4,0	10
RCMT 1204..	4,76	4,9	12
RCMT 1606..	6,35	5,3	16
RCMT 2006..	6,35	6,5	20
RCMT 2507..	7,94	7,2	25



RCMT / RCGT

ISO	RE	-SMF CTCK110		-SM CTCP125		-SM CTCP135		-SM CTCP115		-SM CTCP125		-SM CTCP135		-27 H10T	
		-SMF DCX3110		-ZM HCX1125		-ZM HCR1135		-ZM HCX1115		-ZM HCX1125		-ZM HCR1135		-AL CWK15	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN			
		F		M		M		M		M		M		M	
		RCMT		RCGT		RCGT		RCMT		RCMT		RCMT		RCGT	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/90	
		Article no. 70 188 ...		Article no. 76 262 ...		Article no. 76 262 ...		Article no. 76 264 ...		Article no. 76 264 ...		Article no. 76 264 ...		Article no. 70 266 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
0602MOEN	3,0			8,07	502	8,07	702								
0602MOFN	3,0													6,03	600
0803MOEN	4,0			8,99	512	8,99	712								
0803MOFN	4,0													6,73	602
1003MOFN	5,0													6,73	604
1003MOSN	5,0									7,78	514	7,78	714		
1204MOSN	6,0							9,22	328	9,22	526	9,22	726		
1606MOEN	8,0	18,13	038												
1606MOSN	8,0							18,13	340	18,13	538	18,13	738		
2006MOSN	10,0									24,95	550	24,95	750		
2507MOSN	12,5							40,18	36200	40,18	562	40,18	762		
Steel		●		●		●		●		●		●			
Stainless steel		○		○		○		○		○		○			
Cast iron		●		○				○		○					○
Non ferrous metals															●
Heat resistant alloys						○						○			○

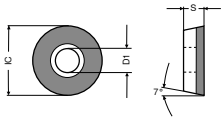
9

RCGT

		-27 CWN15		-27 AMZ	
		-AL CWN15		-AL AMZ	
					
		M		M	
		RCGT		RCGT	
		1A		1A/90	
ISO	RE mm	Article no. 70 266 ... EUR		Article no. 70 266 ... EUR	
0602MOFN	3	8,03	300		
0803MOFN	4	8,03	302	7,87	502
Steel					○
Stainless steel			○		○
Cast iron					○
Non ferrous metals			●		●
Heat resistant alloys					

RCGT

Designation	S	D1	IC
	mm	mm	mm
RCGT 0602..	2,38	2,8	6
RCGT 10T3..	3,97	4,4	10



RCGT-F

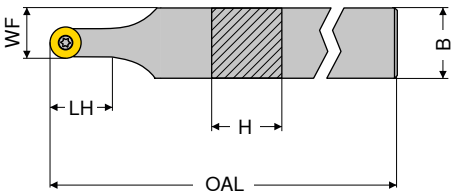
RCGT

ISO	RE	LE	-F-CB1 CTDPD20 -CB1 PDC		-F-CB1 CTDPS30 -CB1 PDC-S		-F-CB2 CTDPS30 -CB2 PDC-S	
								
			F		F		M	
			DIAMOND RCGT		DIAMOND RCGT		DIAMOND RCGT	
			Y0		Y0		NEW Y0	
	mm	mm	Article no. 71 315 ... EUR		Article no. 71 315 ... EUR		Article no. 71 316 ... EUR	
0602M0EN	3	6					146,20	202
0602M0FN	3	6	146,20	102	146,20	202		
10T3M0EN	5	10					191,80	204
10T3M0FN	5	10	191,80	104	191,80	204		
Steel								
Stainless steel								
Cast iron								
Non ferrous metals				●		●		●
Heat resistant alloys						○		○

9

MaxiLock-S – SRDC 0° – Toolholder with screw clamping





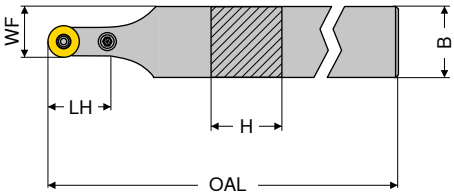


ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 708 ... EUR	
SRDC N 1212 F06	12	12	80	12,4	9,0	1,2	RC.. 0602 M0	73,60	**012**
SRDC N 1616 H06	16	16	100	12,4	11,0	1,2	RC.. 0602 M0	76,33	**016**
SRDC N 2020 K06	20	20	125	12,4	13,0	1,2	RC.. 0602 M0	85,04	**020**
SRDC N 2525 M06	25	25	150	12,4	15,5	1,2	RC.. 0602 M0	87,97	**025**
SRDC N 1616 H08	16	16	100	16,4	12,0	1,8	RC.. 0803 M0	76,33	**116**
SRDC N 2020 K08	20	20	125	16,4	14,0	1,8	RC.. 0803 M0	85,04	**120**
SRDC N 2525 M08	25	25	150	16,4	16,5	1,8	RC.. 0803 M0	87,97	**125**
SRDC N 1616 H10	16	16	100	20,3	13,0	3,2	RC.. 1003 M0	76,33	**216**
SRDC N 2020 K10	20	20	125	20,3	15,0	3,2	RC.. 1003 M0	85,04	**220**
SRDC N 2525 M10	25	25	150	20,3	17,5	3,2	RC.. 1003 M0	87,97	**225**

Spare parts	Y7 Key D Article no. 80 950 ... EUR		2A/28 Combination Key Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		2A/28 Solid carbide support R Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.										
70 708 012	7,80	**110**			2,36	**112**				
70 708 016	7,80	**110**			2,36	**112**				
70 708 020	7,80	**110**			2,36	**112**				
70 708 025	7,80	**110**			2,36	**112**				
70 708 116	7,80	**110**			2,57	**115**				
70 708 120	7,80	**110**			2,57	**115**				
70 708 125	7,80	**110**			2,57	**115**				
70 708 216			8,28	**398**	3,14	**113**	12,37	**117**	4,64	**171**
70 708 220			8,28	**398**	3,14	**113**	12,37	**117**	4,64	**171**
70 708 225			8,28	**398**	3,14	**113**	12,37	**117**	4,64	**171**

MaxiLock-N – PRDC 0° – Toolholder with lever clamping







ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 544 ... EUR	
PRDC N 2525 M12	25	25	150	24	18,5	3	RCMT 1204	87,97	**025**
PRDC N 3225 P12	32	25	170	24	18,5	3	RCMT 1204	94,37	**032**
PRDC N 3225 P16	32	25	170	28	20,5	4	RCMT 1606	94,37	**132**
PRDC N 3225 P20	32	32	170	32	26,0	5	RCMT 2006	116,50	**23200**
PRDC N 4040 S25	40	40	250	42	32,5	6	RCMT 2507	144,90	**04000**

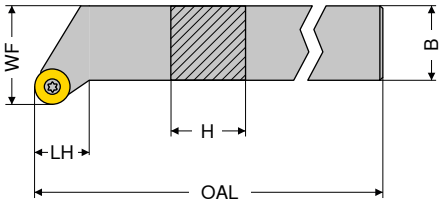
Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid carbide support R Article no. 70 950 ... EUR	
70 544 025	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	15,52	**178**	3,19	**208**	7,09	**215**
70 544 032	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	15,52	**178**	3,19	**208**	7,09	**215**
70 544 132	SW3	2,45	**176**	1,37	**196**	1,22	**192**	16,06	**387**	3,50	**390**	12,59	**384**
70 544 23200	SW2	2,45	**177**	1,12	**391**	1,22	**394**	15,23	**28100**	3,44	**28500**	17,04	**27400**
70 544 04000	SW4	2,57	**396**	1,76	**392**	1,22	**395**	18,75	**28400**	7,48	**28600**	31,95	**27500**

9

MaxiLock-S – SRGC – Toolholder with screw clamping







Illustrations show right-hand versions

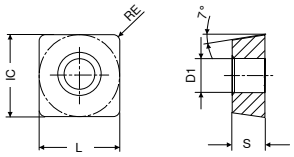
ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 713 ... EUR		Right-hand 2A/24 Article no. 70 712 ... EUR	
SRGC R/L 1212 F06	12	12	80	10,0	16	1,2	RC.. 0602 M0	73,60	**012**	73,60	**012**
SRGC R 1616 H06	16	16	100	10,0	20	1,2	RC.. 0602 M0			76,33	**016**
SRGC R/L 2020 K06	20	20	125	11,5	25	1,2	RC.. 0602 M0	85,04	**020**	85,04	**020**
SRGC R/L 2525 M06	25	25	150	15,0	32	1,2	RC.. 0602 M0	87,97	**025**	87,97	**025**
SRGC R/L 1616 H08	16	16	100	11,0	20	1,8	RC.. 0803 M0	76,33	**116**	76,33	**116**
SRGC R 2020 K08	20	20	125	13,0	25	1,8	RC.. 0803 M0			85,04	**120**
SRGC R/L 2525 M08	25	25	150	16,0	32	1,8	RC.. 0803 M0	87,97	**125**	87,97	**125**
SRGC R/L 1616 H10	16	16	100	12,0	20	3,2	RC.. 1003 M0	76,33	**216**	76,33	**216**
SRGC R/L 2020 K10	20	20	125	13,5	25	3,2	RC.. 1003 M0	85,04	**220**	85,04	**220**
SRGC R/L 2525 M10	25	25	150	17,0	32	3,2	RC.. 1003 M0	87,97	**225**	87,97	**225**

Spare parts for Article no.		2A Clamping screw Article no. 70 950 ... EUR		2A/28 Solid carbide support R Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
70 712 012 / 70 713 012	M2,5x6	2,36	**112**					
70 712 016	M2,5x6	2,36	**112**					
70 712 020 / 70 713 020	M2,5x6	2,36	**112**					
70 712 025 / 70 713 025	M2,5x6	2,36	**112**					
70 712 116 / 70 713 116	M3x7,3	2,57	**115**					
70 712 120	M3x7,3	2,57	**115**					
70 712 125 / 70 713 125	M3x7,3	2,57	**115**					
70 712 216 / 70 713 216	M3,5x11	3,14	**113**	12,37	**117**	M3,5	4,64	**171**
70 712 220 / 70 713 220	M3,5x11	3,14	**113**	12,37	**117**	M3,5	4,64	**171**
70 712 225 / 70 713 225	M3,5x11	3,14	**113**	12,37	**117**	M3,5	4,64	**171**

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR			2A/28 Combination Key Article no. 70 950 ... EUR	
70 712 012 / 70 713 012	T08	7,80	**110**			
70 712 016	T08	7,80	**110**			
70 712 020 / 70 713 020	T08	7,80	**110**			
70 712 025 / 70 713 025	T08	7,80	**110**			
70 712 116 / 70 713 116	T08	7,80	**110**			
70 712 120	T08	7,80	**110**			
70 712 125 / 70 713 125	T08	7,80	**110**			
70 712 216 / 70 713 216				T15/SW	8,28	**398**
70 712 220 / 70 713 220				T15/SW	8,28	**398**
70 712 225 / 70 713 225				T15/SW	8,28	**398**

SCGT / SCMT / SCMX

Designation	L	S	D1	IC
	mm	mm	mm	mm
SC.T 09T3..	9,52	3,97	4,4	9,52
SC.. 1204..	12,70	4,76	5,5	12,70



SCGT / SCMT

	-CF05 CTEP110	-SF TCM10	-SF TCM407	-SF CTCP125	-CF55 CTEP110	-SMF CTCP115	-SMF CTCP135
	-PF14 DCC1110	-ZF CWC10	-ZF CWC407	-ZF HCX1125	-PF15 DCC1110	-SMF HCX1115	-SMF HCR1135
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	F	F	F	F	F	F	F
	CERMET SCGT	CERMET SCGT	CERMET SCGT	SCMT	CERMET SCMT	SCMT	SCMT
	1A/78	1A/78	1A/78	1A/08	1A/78	1A/08	1A/08
ISO / RE mm	Article no. 76 261 ... EUR	Article no. 70 271 ... EUR	Article no. 70 271 ... EUR	Article no. 76 269 ... EUR	Article no. 76 260 ... EUR	Article no. 76 267 ... EUR	Article no. 76 267 ... EUR
09T304EN 0,4	15,10 004	13,86 902		9,70 504	9,68 004	9,70 304	
09T308EN 0,8	15,10 006	13,86 904	13,86 852	9,70 506	9,68 006	9,70 306	
120408EN 0,8				13,66 518			13,66 718
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○	○	○	
Non ferrous metals							
Heat resistant alloys							○

SCMT / SCMX

	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135	CTCP135	-SM CTC2135
	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135	HCR1135	-ZM CWN2135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	M	M	M	M	M	M	M
	SCMT	SCMT	SCMT	SCMT	SCMT	SCMX	SCMT
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 70 268 ... EUR	Article no. 70 268 ... EUR	Article no. 76 268 ... EUR	Article no. 76 268 ... EUR	Article no. 76 268 ... EUR	Article no. 76 182 ... EUR	Article no. 70 268 ... EUR
09T304EN 0,4	9,70 004	9,70 504	9,70 304	9,70 504	9,70 704		
09T308EN 0,8	9,70 006	9,70 506	9,70 306	9,70 506	9,70 706		9,68 442
120408EN 0,8	13,66 018	13,66 518	13,66 318	13,66 518	13,66 718	12,42 718	13,66 444
120412EN 1,2	13,66 020	13,66 520		13,66 520			
Steel	●	●	●	●	●	●	○
Stainless steel	○		○	○	○	○	●
Cast iron	●	●	○	○			
Non ferrous metals							
Heat resistant alloys					○	○	●

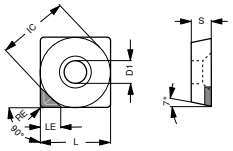
9

SCMT / SCGT

		-M55 CTPM125		-25P H210T		-25P AMZ		-27 H10T		-27 CWN15	
		-PF26 HCN2125		-25P CWK20		-25P AMZ		-AL CWK15		-AL CWN15	
		DRAGONSKIN									
											
											
		F		F		F		M		M	
		SCMT		SCGT		SCGT		SCGT		SCGT	
		1A/08		1A/90		1A/90		1A/90		1A	
ISO	RE mm	Article no. 75 216 ... EUR		Article no. 70 283 ... EUR		Article no. 70 283 ... EUR		Article no. 70 270 ... EUR		Article no. 70 270 ... EUR	
09T304FN	0,4							10,91	600	13,41	300
09T308EN	0,8	9,70	206								
09T308FN	0,8							10,91	602	13,41	302
120408EN	0,8	13,66	218								
120408FN	0,8			13,31	634	15,78	554	12,75	604	15,89	304
Steel			○				○				
Stainless steel			●				○				○
Cast iron					○		○		○		
Non ferrous metals					●		●		●		●
Heat resistant alloys					○				○		

SCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
SCGT 09T3..	9,52	3,97	4,4	9,52



SCGT-A

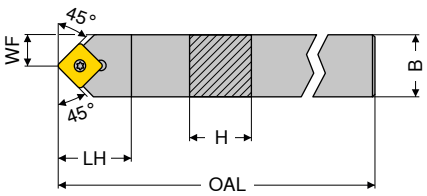
SCGT

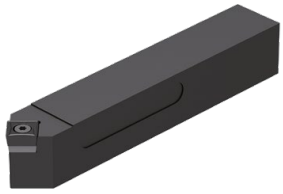
ISO	RE	LE	-A-CB1 CTDPD20		-A-CB2 CTDPS30		-A-CB3 CTDPU20	
			-CB1 PDC		-CB2 PDC-S		-CB3 PDC-S	
								
			F		M		R	
			DIAMOND SCGT Y0		NEW DIAMOND SCGT Y0		DIAMOND SCGT Y0	
	mm	mm	Article no. 71 320 ...		Article no. 71 321 ...		Article no. 71 322 ...	
			EUR		EUR		EUR	
09T304EN	0,4	4,4			66,24	214	66,24	214
09T304FN	0,4	4,4	66,24	114				
09T308EN	0,8	4,3			71,10	218	71,10	218
09T308FN	0,8	4,3	71,10	118				
Steel								
Stainless steel								
Cast iron								
Non ferrous metals				●		●		●
Heat resistant alloys						○		○

9

MaxiLock-S – SSDC 45° – Toolholder with screw clamping





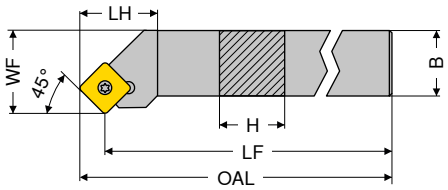


ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Neutral 2A/24 Article no. 70 656 ... EUR	
	mm	mm	mm	mm	mm	Nm			
SSDC N 1212 F09	12	12	80	16	6,0	3,2	SC.. 09T3..	64,59	**012**
SSDC N 1616 H09	16	16	100	20	8,0	3,2	SC.. 09T3..	80,00	**016**
SSDC N 2020 K09	20	20	125	20	10,0	3,2	SC.. 09T3..	85,04	**020**
SSDC N 1616 H12	16	16	100	25	8,0	5	SC.. 1204..	80,00	**116**
SSDC N 2020 K12	20	20	125	25	10,0	5	SC.. 1204..	85,04	**120**
SSDC N 2525 M12	25	25	150	25	12,5	5	SC.. 1204..	87,97	**125**

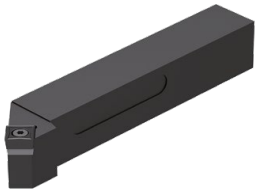
Spare parts	Y7 Key D		2A/28 Combination Key		2A/28 Clamping screw		2A/28 Solid Carbide support S		2A/28 Threaded sleeve	
	Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 656 012	9,28	**113**			3,14	**113**				
70 656 016			8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 656 020			8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 656 116			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 656 120			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 656 125			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**

MaxiLock-S – SSSC 45° – Toolholder with screw clamping





Illustrations show right-hand versions

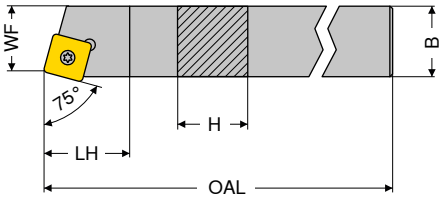


ISO designation	H	B	LF	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 661 ... EUR		Right-hand 2A/24 Article no. 70 660 ... EUR	
	mm	mm	mm	mm	mm	mm	Nm					
SSSC R/L 1212 F09	12	12	80	86,40	18	16	3,2	SC.. 09T3..	64,59	**012**	64,59	**012**
SSSC R/L 1616 H09	16	16	100	106,40	20	20	3,2	SC.. 09T3..	80,00	**016**	80,00	**016**
SSSC R/L 2020 K09	20	20	125	131,40	20	25	3,2	SC.. 09T3..	85,04	**020**	85,04	**020**
SSSC R/L 1616 H12	16	16	100	108,63	25	20	5	SC.. 1204..	80,00	**116**	80,00	**116**
SSSC R/L 2020 K12	20	20	125	133,63	25	25	5	SC.. 1204..	85,04	**120**	85,04	**120**
SSSC R/L 2525 M12	25	25	150	158,63	25	32	5	SC.. 1204..	87,97	**125**	87,97	**125**
SSSC R 3225 P12	32	25	170	178,63	25	32	5	SC.. 1204..			91,44	**132**

Spare parts	Y7 Key D		2A/28 Combination Key		2A/28 Clamping screw		2A/28 Solid Carbide support S		2A/28 Threaded sleeve	
	Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 661 012 / 70 660 012	9,28	**113**			3,14	**113**				
70 661 016 / 70 660 016			8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 661 020 / 70 660 020			8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 661 116 / 70 660 116			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 661 120 / 70 660 120			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 661 125 / 70 660 125			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 660 132			8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**

MaxiLock-S – SSBC 75° – Toolholder with screw clamping







Illustrations show right-hand versions

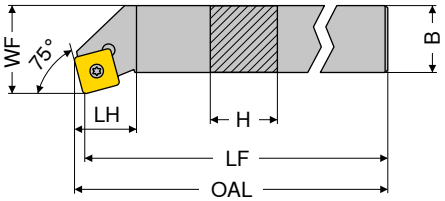
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 665 ...		Right-hand 2A/24 Article no. 70 664 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SSBC R/L 1616 H09	16	16	100	20	13	3,2	SC.. 09T3..	80,00	**016**	80,00	**016**
SSBC R 2020 K09	20	20	125	20	17	3,2	SC.. 09T3..			85,04	**020**
SSBC R/L 2020 K12	20	20	125	20	17	5	SC.. 1204..	85,04	**120**	85,04	**120**
SSBC R/L 2525 M12	25	25	150	20	22	5	SC.. 1204..	87,97	**125**	87,97	**125**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 665 016 / 70 664 016	9,28	**113**	8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 664 020	9,28	**113**	8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 665 120 / 70 664 120	9,28	**113**	8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 665 125 / 70 664 125	9,28	**113**	8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**

9

MaxiLock-S – SSKC 75° – Toolholder with screw clamping







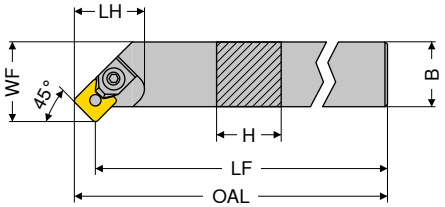
Illustrations show right-hand versions

ISO designation	H	B	LF	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 669 ...		Right-hand 2A/24 Article no. 70 668 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SSKC R/L 1616 H09	16	16	100	102,3	22	20	3,2	SC.. 09T3..	80,00	**016**	80,00	**016**
SSKC R/L 2020 K09	20	20	125	127,3	22	25	3,2	SC.. 09T3..	85,04	**020**	85,04	**020**
SSKC R 2020 K12	20	20	125	127,3	23	25	5	SC.. 1204..			85,04	**120**
SSKC R 2525 M12	25	25	150	153,3	23	32	5	SC.. 1204..			87,97	**125**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 668 016 / 70 669 016	9,28	**113**	8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 668 020 / 70 669 020	9,28	**113**	8,28	**398**	3,14	**113**	9,67	**167**	4,64	**171**
70 668 120	9,28	**113**	8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 668 125	9,28	**113**	8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**

MaxiLock-P – MSSC 45° – Toolholder with top clamping







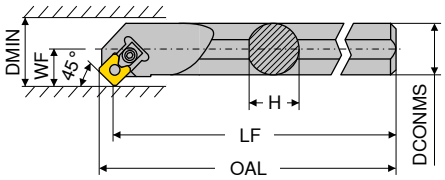
Illustrations show right-hand versions

ISO designation	H	B	LF	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 589 ... EUR		Right-hand 2A/24 Article no. 70 588 ... EUR	
	mm	mm	mm	mm	mm	mm	Nm					
MSSC R/L 2020 K12	20	20	125	133,65	32	25	5	SCMX 1204	92,37	**020**	92,37	**020**
MSSC R/L 2525 M12	25	25	150	158,65	28	32	5	SCMX 1204	95,73	**025**	95,73	**025**
MSSC R/L 3225 P12	32	25	170	178,65	28	32	5	SCMX 1204	98,67	**032**	98,67	**032**

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		2A/28 Dowel pin Article no. 70 950 ... EUR		2A/28 Clamping Element Article no. 70 950 ... EUR		2A/28 Wedge Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
70 588 020 / 70 589 020	T20	9,95	**114**	4,09	**153**	11,95	**159**	7,49	**150**	12,15	**140**
70 588 025 / 70 589 025	T20	9,95	**114**	4,09	**153**	11,95	**159**	7,49	**150**	12,15	**140**
70 588 032 / 70 589 032	T20	9,95	**114**	4,09	**153**	11,95	**159**	7,49	**150**	12,15	**140**

MaxiLock-P – MSSC 45° – Boring bar with top clamping







Illustrations show right-hand versions

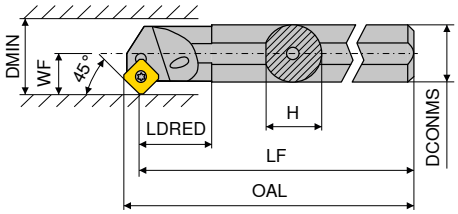
ISO designation	DCONMS	H	LF	OAL	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 625 ...		Right-hand 2A/24 Article no. 70 624 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
S32S MSSC R/L 12	32	30	250	258	22	40	5	SCMX 1204	226,00	**032**	226,00	**032**

Spare parts		Y7 Key D Article no. 80 950 ...		2A/28 Dowel pin Article no. 70 950 ...		2A/28 Clamping Element Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR	
70 625 032 / 70 624 032	T20	9,95	**114**	5,03	**155**	11,95	**163**	7,49	**150**	12,15	**147**

MaxiLock-S – SSSC 45° – Boring bar with screw clamping

- A... = with thro' coolant
- S... = without thro' coolant







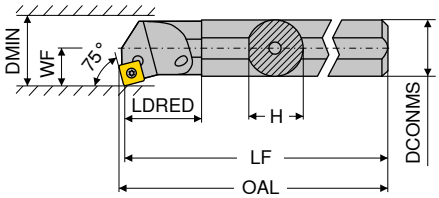
Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 721 ...		Right-hand 2A/24 Article no. 70 720 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
S16R SSSC R 09	16	15,00	200	206,0	13,97	11	20	3,2	SC.. 09T3..			98,67	**016**
A16M SSSC R/L 09	16	15,25	150	156,0	29,00	11	20	3,2	SC.. 09T3..	98,67	**216**	98,67	**216**
A20Q SSSC R/L 09	20	19,00	180	186,0	32,00	13	25	3,2	SC.. 09T3..	123,00	**220**	123,00	**220**
A25R SSSC R/L 09	25	24,50	200	206,0	36,00	17	32	3,2	SC.. 09T3..	141,40	**225**	141,40	**225**
A32S SSSC R/L 12	32	31,00	250	258,3	50,00	22	40	5	SC.. 1204..	194,40	**232**	194,40	**232**
A40T SSSC R/L 12	40	39,00	300	308,1	60,00	27	50	5	SC.. 1204..	233,40	**240**	233,40	**240**

Spare parts		Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.		EUR		EUR		EUR		EUR		EUR	
70 720 016		9,28	**113**			3,14	**110**				
70 720 216 / 70 721 216		9,28	**113**			3,14	**110**				
70 720 220 / 70 721 220		9,28	**113**			3,14	**304**				
70 720 225 / 70 721 225		9,28	**113**			3,14	**304**				
70 720 232 / 70 721 232				8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**
70 720 240 / 70 721 240				8,28	**398**	2,57	**114**	12,37	**168**	4,64	**170**

MaxiLock-S – SSKC 75° – Boring bar with screw clamping







Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 725 ...		Right-hand 2A/24 Article no. 70 724 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
A16M SSKC R/L 09	16	15,0	150	152,4	29	11	20	3,2	SC.. 09T3..	98,67	**216**	98,67	**216**
A20Q SSKC R/L 09	20	18,5	180	182,4	32	13	25	3,2	SC.. 09T3..	123,00	**220**	123,00	**220**
A25R SSKC R/L 09	25	23,0	200	202,4	36	17	32	3,2	SC.. 09T3..	141,40	**225**	141,40	**225**

Y7



Key D

2A/28

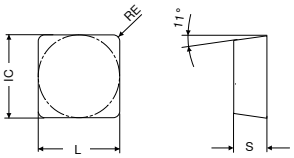


Clamping screw

Spare parts for Article no.		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
70 724 216 / 70 725 216	T15	9,28	**113**	M3,5x7,2	3,14	**110**
70 724 220 / 70 725 220	T15	9,28	**113**	M3,5x8,6	3,14	**304**
70 724 225 / 70 725 225	T15	9,28	**113**	M3,5x8,6	3,14	**304**

SPMR / SPUN

Designation	L	S	IC
	mm	mm	mm
SPUN 0903..	9,52	3,18	9,52
SP.. 1203..	12,70	3,18	12,70



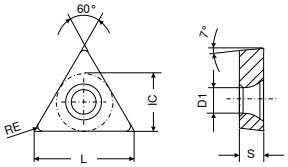
SPMR / SPUN

ISO	RE	CTCP135 HCR1135 DRAGONSKIN	CTCP135 HCR1135 DRAGONSKIN
		M	M
		SPMR	SPUN
		1A/11	1A/08
		Article no. 76 208 ...	Article no. 76 206 ...
	mm	EUR	EUR
090304EN	0,4	7,42 704	
120304EN	0,4	10,77 716	
120308EN	0,8	10,77 718	8,99 718
120308ER	0,8	11,19 720	
Steel		●	●
Stainless steel		○	○
Cast iron			
Non ferrous metals			
Heat resistant alloys		○	○

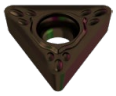
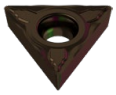
9

TCGT / TCMT

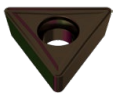
Designation	L	S	D1	IC
	mm	mm	mm	mm
TCMT 0902..	9,6	2,38	2,50	5,56
TC.T 1102..	11,0	2,38	2,80	6,35
TC.T 16T3..	16,5	3,97	4,40	9,52
TCMT 2204..	22,0	4,76	5,16	12,70



TCGT / TCMT

	-CF05 CTEP110	-SF TCM10	-SF CTCP125	-CF55 CTEP110	-SMF TCM10	-SMF CTCP115
	-PF14 DCC1110	-ZF CWC10	-ZF HCX1125	-PF15 DCC1110	-SMF CWC10	-SMF HCX1115
	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
						
	F	F	F	F	F	F
	CERMET TCGT	CERMET TCGT	TCMT	CERMET TCMT	CERMET TCMT	TCMT
	1A/78	1A/78	1A/08	1A/78	1A/78	1A/08
ISO / RE mm	Article no. 76 272 ... EUR	Article no. 70 273 ... EUR	Article no. 76 275 ... EUR	Article no. 76 266 ... EUR	Article no. 70 284 ... EUR	Article no. 76 284 ... EUR
110202EN 0,2	13,54 014	12,53 900				
110204EN 0,4	13,54 016	12,53 902	7,64 516	7,72 016	7,28 902	
110208EN 0,8	13,54 018		7,64 518			7,64 318
16T304EN 0,4	17,16 028	15,89 906	11,04 528			11,04 328
16T308EN 0,8			11,04 530	10,70 030		11,04 330
Steel	●	●	●	●	●	●
Stainless steel	○		○	○		○
Cast iron	○	○	○	○	○	○
Non ferrous metals						
Heat resistant alloys						

TCMT / TCGT

		-SMF CTCP135	-SM CTCP135	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135
		-SMF HCR1135	-ZM HCR1135	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	M	M	M	M	M	M
		TCMT	TCGT	TCMT	TCMT	TCMT	TCMT	TCMT
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE mm	Article no. 76 284 ... EUR	Article no. 76 270 ... EUR	Article no. 70 274 ... EUR	Article no. 70 274 ... EUR	Article no. 76 274 ... EUR	Article no. 76 274 ... EUR	Article no. 76 274 ... EUR
090204EN	0,4						7,64 504	7,64 704
110202EN	0,2		13,54 714					
110204EN	0,4			7,64 016	7,64 516	7,64 316	7,64 516	7,64 716
110208EN	0,8	7,64 718		7,64 018	7,64 518	7,64 318		7,64 718
16T304EN	0,4			11,04 028	11,04 528	11,04 328	11,04 528	11,04 728
16T308EN	0,8			11,04 030	11,04 530	11,04 330	11,04 530	11,04 730
16T312EN	1,2			11,04 032	11,04 532			
220408EN	0,8						15,89 542	15,89 742
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○		○	○	○
Cast iron				●	●	○	○	
Non ferrous metals								
Heat resistant alloys		○	○					○

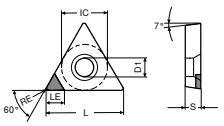
9

TCMT / TCGT

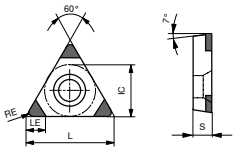
		-F43 CTC2135	-M25 CTPM125	-SM CTC2135	-M55 CTPM125	-27 H10T	-27 CWN15
		-F43 CWN2135	-PF23 HCN2125	-ZM CWN2135	-PF26 HCN2125	-AL CWK15	-AL CWN15
			DRAGONSKIN		DRAGONSKIN		
							
		F	F	M	F	M	M
		TCMT	TCMT	TCMT	TCMT	TCGT	TCGT
		1A/08	1A/08	1A/08	1A/08	1A/90	1A
ISO	RE mm	Article no. 70 187 ... EUR	Article no. 75 217 ... EUR	Article no. 70 274 ... EUR	Article no. 75 218 ... EUR	Article no. 70 276 ... EUR	Article no. 70 276 ... EUR
090204EN	0,4			7,54 398	7,64 204		
110202FN	0,2					10,91 600	13,41 300
110204EN	0,4	7,54 400	7,64 216	7,54 402	7,64 216		
110204FN	0,4					10,91 602	13,41 302
16T302FN	0,2					12,86 604	15,89 304
16T304EN	0,4	10,50 402	11,04 228				
16T304FN	0,4					12,86 606	15,89 306
16T308EN	0,8	10,50 404	11,04 230	10,50 396	11,04 230		
16T308FN	0,8					12,86 608	15,89 308
Steel		○	○	○	○		
Stainless steel		●	●	●	●		○
Cast iron						○	
Non ferrous metals						●	●
Heat resistant alloys		●		●		○	

TCGW

Designation	L	S	D1	IC
	mm	mm	mm	mm
TCGW 0902..	9,6	2,38	2,5	5,56
TCGW 1102..	11,0	2,38	2,8	6,35
TCGW 16T3..	16,5	3,97	4,4	9,52

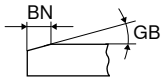


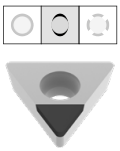
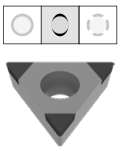
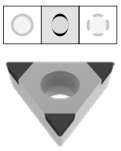
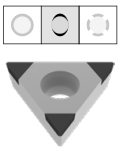
TCGW-A



TCGW-C

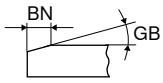
TCGW



	-A CTBS10U	-C CTBS20C	-C CTBH15U	-C CTBH15U
	PBC10	-3MC PBC15-S		
				
	F	F	F	F
	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW
	Y0	Y0	NEW Y0	NEW Y0
ISO	Article no. 71 140 ...	Article no. 71 164 ...	Article no. 71 028 ...	Article no. 71 029 ...
	EUR	EUR	EUR	EUR
090202SN		64,85 120		
090202SN		64,85 130		79,51 30214
090202TN	34,55 300			
090202TN		64,85 140		
090202SN		64,85 150		
090202EN				79,51 00200
090204SN		64,85 121		
090204SN		64,85 131	79,51 30414	
090204TN	34,55 302			
090204SN		64,85 151		
090204TN		64,85 161		
090204FN	34,55 202			
090204EN		64,85 111	79,51 00400	
090208SN		64,85 122		
090208SN		64,85 132	79,51 30614	
090208TN		64,85 142		
090208TN		64,85 162		
090208EN			79,51 00600	
110202SN		64,85 123		
110202SN		64,85 133		
110202TN	34,55 306			
110202TN		64,85 143		
110202SN		64,85 153		
110202FN	34,55 206			
110204SN		64,85 124		
110204SN		64,85 134		
110204TN	34,55 308			
110204TN		64,85 144		
110204SN		64,85 154		
110204TN		64,85 164		
110204FN	34,55 208			
110204EN		64,85 114		
110208SN		64,85 125		
110208SN		64,85 135		
110208TN	34,55 310			
110208TN		64,85 145		
110208TN		64,85 165		
110208FN	34,55 210			
16T304SN		64,85 126		
16T304SN		64,85 136		
16T308SN		64,85 127		
16T308SN		64,85 137		
16T308SN		64,85 157		
16T308TN		64,85 167		
16T308EN		64,85 117		

Cast iron	●	●		
Sintered steels	●	●		
Heat resistant alloys	●	●		
hardened < 45 HRC			●	●
hardened 46–55 HRC			●	●
hardened 56–60 HRC			●	●
hardened 61–65 HRC				

TCGW

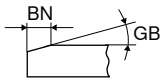


					-C CTBH15C	-C CTBH15C	-A CTBH21U	-C CTBH20C	-A CTBH40U	-C CTBH40C
							PBC25	-3MC PBC25-S	PBC40	-3MC PBC40-S
										
					F	F	F	F	F	F
					CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW
					NEW Y0	NEW Y0	Y0	Y0	Y0	Y0
ISO	RE	GB	BN	LE	Article no. 71 027 ...	Article no. 71 034 ...	Article no. 71 140 ...	Article no. 71 164 ...	Article no. 71 140 ...	Article no. 71 164 ...
	mm	°	mm	mm	EUR	EUR	EUR	EUR	EUR	EUR
090202FN	0,2			2,6				64,85 210		
090202SN	0,2	15	0,11	2,6		77,62 30214				
090202SN	0,2	20	0,09	2,6				64,85 250		64,85 330
090202TN	0,2	20	0,09	2,6						64,85 320
090202TN	0,2	20	0,14	3,8			34,55 500			
090202TN	0,2	25	0,11	2,6						64,85 340
090202TN	0,2	25	0,12	3,8					34,55 900	
090202EN	0,2			2,6		77,62 00200		64,85 220		
090202FN	0,2			3,8			34,55 400			
090204SN	0,4	15	0,11	2,2	77,62 30414			64,85 241		
090204TN	0,4	20	0,09	2,2						64,85 321
090204TN	0,4	20	0,14	3,5			34,55 502			
090204SN	0,4	25	0,09	2,2						64,85 351
090204TN	0,4	25	0,11	2,2						64,85 341
090204TN	0,4	25	0,12	3,5					34,55 902	
090204EN	0,4			2,2	77,62 00400			64,85 221		
090204FN	0,4			3,5			34,55 402		34,55 802	
090204TN	0,4	25	0,14	2,2				64,85 261		
090204SN	0,4	25	0,15	2,2				64,85 271		
090204TN	0,4	30	0,14	2,2						64,85 361
090204SN	0,4	30	0,16	2,2						64,85 371
090208SN	0,8	10	0,09	1,8				64,85 232		
090208SN	0,8	15	0,11	1,8	77,62 30614			64,85 242		
090208SN	0,8	20	0,09	1,8				64,85 252		
090208TN	0,8	20	0,14	1,8						64,85 362
090208TN	0,8	20	0,14	3,0			34,55 504			
090208SN	0,8	25	0,09	1,8						64,85 352
090208TN	0,8	25	0,11	1,8						64,85 342
090208TN	0,8	25	0,12	3,0					34,55 904	
090208EN	0,8			1,8	77,62 00600					64,85 312
110202SN	0,2	15	0,11	2,9		77,62 31414				
110202SN	0,2	20	0,09	2,9				64,85 253		64,85 333
110202TN	0,2	20	0,09	2,9						64,85 323
110202TN	0,2	20	0,14	3,8			34,55 506			
110202TN	0,2	25	0,11	2,9						64,85 343
110202TN	0,2	25	0,12	3,8					34,55 906	
110202EN	0,2			2,9				64,85 223		
110202FN	0,2			2,9				64,85 213		
110202FN	0,2			3,8			34,55 406		34,55 806	
110202SN	0,2	25	0,13	2,9		77,62 31429				
110202TN	0,2	30	0,14	2,9						64,85 363
110204FN	0,4			2,5				64,85 214		
110204SN	0,4	10	0,09	2,5				64,85 234		
110204EN	0,4			2,5				64,85 224		

Cast iron										
Sintered steels										
Heat resistant alloys										
hardened < 45 HRC					●	●				
hardened 46–55 HRC					●	●	●	●	●	●
hardened 56–60 HRC					●	●	●	●	●	●
hardened 61–65 HRC									●	●

9

TCGW

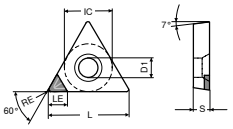


					-C CTBH15C	-C CTBH15C	-A CTBH21U	-C CTBH20C	-A CTBH40U	-C CTBH40C
							PBC25	-3MC PBC25-S	PBC40	-3MC PBC40-S
										
					F	F	F	F	F	F
					CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW
					NEW Y0	NEW Y0	Y0	Y0	Y0	Y0
ISO	RE	GB	BN	LE	Article no. 71 027 ...	Article no. 71 034 ...	Article no. 71 140 ...	Article no. 71 164 ...	Article no. 71 140 ...	Article no. 71 164 ...
	mm	°	mm	mm	EUR	EUR	EUR	EUR	EUR	EUR
110204SN	0,4	15	0,11	2,5		77,62 31614		64,85 244		
110204TN	0,4	20	0,09	2,5						64,85 324
110204TN	0,4	20	0,14	3,5			34,55 508			
110204SN	0,4	25	0,09	2,5						64,85 354
110204TN	0,4	25	0,11	2,5						64,85 344
110204TN	0,4	25	0,12	3,5					34,55 908	
110204SN	0,4	25	0,13	2,5		77,62 31629				
110204TN	0,4	25	0,14	2,5				64,85 264		
110204FN	0,4			3,5					34,55 808	
110204SN	0,4	25	0,15	2,5				64,85 274		
110204TN	0,4	30	0,14	2,5						64,85 364
110204SN	0,4	30	0,16	2,5						64,85 374
110208SN	0,8	10	0,09	2,1				64,85 235		
110208SN	0,8	15	0,11	2,1	77,62 31814			64,85 245		
110208SN	0,8	20	0,09	2,1				64,85 255		
110208TN	0,8	20	0,09	2,1						64,85 325
110208TN	0,8	20	0,14	3,0			34,55 510			
110208SN	0,8	25	0,09	2,1						64,85 355
110208TN	0,8	25	0,12	3,0					34,55 910	
110208EN	0,8			2,1						64,85 315
110208SN	0,8	25	0,13	2,1	77,62 31829					
110208TN	0,8	25	0,14	2,1				64,85 265		
110208TN	0,8	30	0,14	2,1						64,85 365
110208SN	0,8	30	0,16	2,1						64,85 375
110208FN	0,8			3,0			34,55 410			
16T304SN	0,4	20	0,09	3,2				64,85 256		64,85 336
16T304SN	0,4	25	0,09	3,2						64,85 356
16T304TN	0,4	25	0,11	3,2						64,85 346
16T304SN	0,4	25	0,15	3,2				64,85 276		
16T304TN	0,4	30	0,14	3,2						64,85 366
16T304SN	0,4	35	0,17	3,2						64,85 386
16T304FN	0,4			3,2				64,85 216		
16T304EN	0,4			3,2				64,85 226		
16T308SN	0,8	15	0,11	2,7				64,85 247		
16T308SN	0,8	20	0,09	2,7						64,85 337
16T308SN	0,8	25	0,09	2,7						64,85 357
16T308TN	0,8	25	0,11	2,7						64,85 347
16T308TN	0,8	25	0,14	2,7				64,85 267		
16T308SN	0,8	25	0,15	2,7				64,85 277		
16T308TN	0,8	30	0,14	2,7						64,85 367
16T308SN	0,8	30	0,16	2,7						64,85 377
16T308SN	0,8	30	0,18	2,7				64,85 287		
16T308EN	0,8			2,7				64,85 227		64,85 317

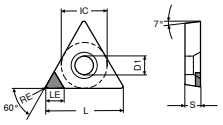
Cast iron										
Sintered steels										
Heat resistant alloys										
hardened < 45 HRC					●	●				
hardened 46–55 HRC					●	●	●	●	●	●
hardened 56–60 HRC					●	●	●	●	●	●
hardened 61–65 HRC									●	●

TCGW / TCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
TCG. 0902..	9,6	2,38	2,5	5,56
TCG. 1102..	11,0	2,38	2,8	6,35
TCG. 16T3..	16,5	3,97	4,4	9,52



TCGT-A-CB



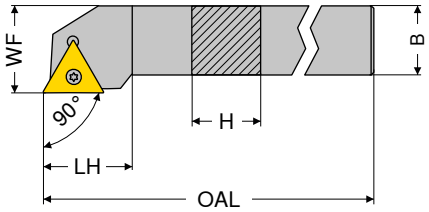
TCGW-A

TCGW / TCGT

ISO	RE	LE	-A CTDPD20		-A-CB1 CTDPD20		-A-CB2 CTDPS30		-A-CB3 CTDPU20	
			PDC		-CB1 PDC		-CB2 PDC-S		-CB3 PDC-S	
										
			F DIAMOND TCGW		F DIAMOND TCGT		M DIAMOND TCGT		R DIAMOND TCGT	
			Y0		Y0		Y0		Y0	
			Article no. 71 140 ...		Article no. 71 325 ...		Article no. 71 326 ...		Article no. 71 327 ...	
	mm	mm	EUR		EUR		EUR		EUR	
090202FN	0,2	3,7	52,14	100	57,76	112				
090202EN	0,2	3,7					57,76	212		
090204FN	0,4	3,4	52,14	102	57,76	114				
090204EN	0,4	3,4					57,76	214		
090208FN	0,8	3,0	52,14	104						
110202FN	0,2	3,7	47,58	106	60,09	122				
110202EN	0,2	3,7					60,09	222		
110204FN	0,4	3,4	47,58	108	60,09	124				
110204EN	0,4	3,4					60,09	224	60,09	224
110208FN	0,8	3,0	47,58	110						
16T304FN	0,4	4,6	52,14	112	62,63	134				
16T304EN	0,4	4,6					62,63	234		
16T308FN	0,8	4,2	52,14	114						
16T308EN	0,8	4,2							63,79	238
Steel										
Stainless steel										
Cast iron										
Non ferrous metals				●		●		●		●
Heat resistant alloys								○		○

9

MaxiLock-S – STGC 90° – Toolholder with screw clamping





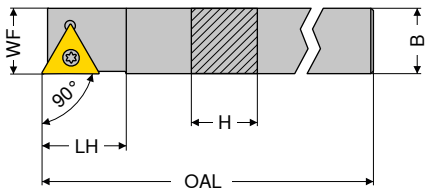
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 677 ...		Right-hand 2A/24 Article no. 70 676 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
STGC R/L 1010 E09	10	10	70	12	12	1	TC.. 0902	64,59	**010**	64,59	**010**
STGC R/L 1212 F11	12	12	80	15	16	1,2	TC.. 1102	64,59	**012**	64,59	**012**
STGC R/L 1616 H16	16	16	100	22	20	3,2	TC.. 16T3	80,00	**016**	80,00	**016**
STGC R/L 2020 K16	20	20	125	22	25	3,2	TC.. 16T3	85,04	**020**	85,04	**020**
STGC R/L 2525 M16	25	25	150	22	32	3,2	TC.. 16T3	87,97	**025**	87,97	**025**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 676 010 / 70 677 010	7,80	**109**			2,57	**111**				
70 676 012 / 70 677 012	7,80	**110**			2,36	**112**				
70 676 016 / 70 677 016			8,28	**398**	3,14	**113**	7,76	**169**	4,64	**171**
70 676 020 / 70 677 020			8,28	**398**	3,14	**113**	7,76	**169**	4,64	**171**
70 676 025 / 70 677 025			8,28	**398**	3,14	**113**	7,76	**169**	4,64	**171**

MaxiLock-S – STAC 90° – Toolholder with screw clamping

▲ for sliding head lathes





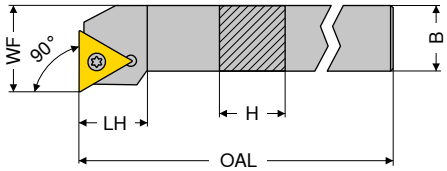
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 769 ...		Right-hand 2A/24 Article no. 70 768 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
STAC R/L 1010 K09	10	10	125	12	10	1	TC.. 0902	64,59	**010**	64,59	**010**
STAC R/L 1212 K11	12	12	125	15	12	1,2	TC.. 1102	72,25	**012**	72,25	**012**
STAC R 1414 K11	14	14	125	15	14	1,2	TC.. 1102			72,25	**014**

Spare parts		Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...	
for Article no.		EUR			EUR	
70 769 010 / 70 768 010	T07	7,80	**109**	M2,2x5	2,57	**111**
70 769 012 / 70 768 012	T08	7,80	**110**	M2,5x6	2,36	**112**
70 768 014	T08	7,80	**110**	M2,5x6	2,36	**112**

MaxiLock-S – STFC 90° – Toolholder with screw clamping







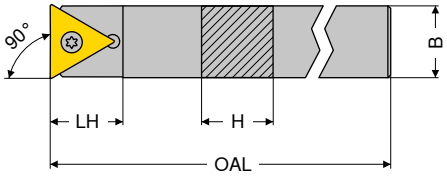
Illustrations show right-hand versions

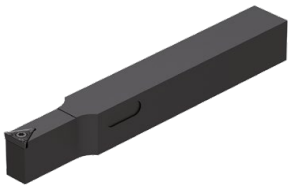
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 673 ...		Right-hand 2A/24 Article no. 70 672 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
STFC R/L 1212 F11	12	12	80	15	16	1,2	TC.. 1102	64,59	**012**	64,59	**012**
STFC R/L 1616 H16	16	16	100	20	20	3,2	TC.. 16T3	80,00	**016**	80,00	**016**
STFC R/L 2020 K16	20	20	125	20	25	3,2	TC.. 16T3	85,04	**020**	85,04	**020**
STFC R/L 2525 M16	25	25	150	20	32	3,2	TC.. 16T3	87,97	**025**	87,97	**025**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 673 012 / 70 672 012	7,80	**110**			2,36	**112**				
70 673 016 / 70 672 016			8,28	**398**	3,14	**113**	7,76	**169**	4,64	**171**
70 673 020 / 70 672 020			8,28	**398**	3,14	**113**	7,76	**169**	4,64	**171**
70 673 025 / 70 672 025			8,28	**398**	3,14	**113**	7,76	**169**	4,64	**171**

MaxiLock-S – STCC 90° – Toolholder with screw clamping







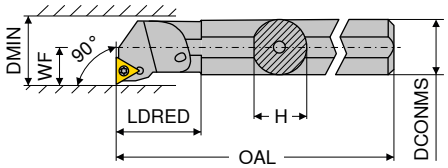
ISO designation	H	B	OAL	LH	torque moment	Insert	Neutral 2A/24 Article no. 70 782 ...	
	mm	mm	mm	mm	Nm		EUR	
STCC N 0808 K09	8	8	125	11	1	TC.. 0902	60,92	**008**
STCC N 1010 K11	10	10	125	15	1,2	TC.. 1102	64,59	**010**
STCC N 1212 K11	12	12	125	15	1,2	TC.. 1102	72,25	**012**
STCC N 1414 K11	14	14	125	21	1,2	TC.. 1102	72,25	**014**
STCC N 1616 K11	16	16	125	24	1,2	TC.. 1102	80,00	**016**

Spare parts		Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...	
for Article no.		EUR			EUR	
70 782 008	T07	7,80	**109**	M2,2x5	2,57	**111**
70 782 010	T08	7,80	**110**	M2,5x6	2,36	**112**
70 782 012	T08	7,80	**110**	M2,5x6	2,36	**112**
70 782 014	T08	7,80	**110**	M2,5x6	2,36	**112**
70 782 016	T08	7,80	**110**	M2,5x6	2,36	**112**

MaxiLock-S – STFC 90° – Boring bar with screw clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant







Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 729 ... EUR		Right-hand 2A/24 Article no. 70 728 ... EUR	
A10H STFC R/L 09	10	9,5	100	19	7	13	1	TC.. 0902	96,57	210	96,57	210
A12K STFC R/L 11	12	11,5	125	22	9	16	1,2	TC.. 1102	96,57	212	96,57	212
A16M STFC R/L 11	16	15,0	150	29	11	20	1,2	TC.. 1102	98,67	216	98,67	216
S16R STFC R 11	16	15,0	200		11	21	1,2	TC.. 1102			98,67	016
A20Q STFC R/L 11	20	18,5	180	32	13	25	1,2	TC.. 1102	123,00	220	123,00	220
S20S STFC R 11	20	18,0	250		13	25	1,2	TC.. 1102			123,00	020
A25R STFC R/L 16	25	24,0	200	36	17	32	3,2	TC.. 16T3	141,40	225	141,40	225
A32S STFC R/L 16	32	31,0	250	50	22	40	3,2	TC.. 16T3	194,40	232	194,40	232
A40T STFC R/L 16	40	39,0	300	60	27	50	3,2	TC.. 16T3	233,40	240	233,40	240



Clamping screw



Solid Carbide Seat T



Threaded sleeve

Spare parts for Article no.		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
70 729 210 / 70 728 210	M2,2x5	2,57	111					
70 729 212 / 70 728 212	M2,5x6	2,36	112					
70 729 216 / 70 728 216	M2,5x6	2,36	112					
70 728 016	M2,5x6	2,36	112					
70 729 220 / 70 728 220	M2,5x6	2,36	112					
70 728 020	M2,5x6	2,36	112					
70 729 225 / 70 728 225	M3,5x11	3,14	113	7,76	169	M3,5	4,64	171
70 729 232 / 70 728 232	M3,5x11	3,14	113	7,76	169	M3,5	4,64	171
70 729 240 / 70 728 240	M3,5x11	3,14	113	7,76	169	M3,5	4,64	171



Key D

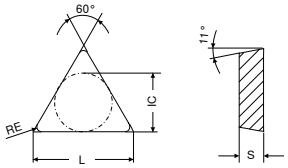


Combination Key

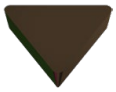
Spare parts for Article no.		Y7 Article no. 80 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
70 729 210 / 70 728 210	T07	7,80	109			
70 729 212 / 70 728 212	T08	7,80	110			
70 729 216 / 70 728 216	T08	7,80	110			
70 728 016	T08	7,80	110			
70 729 220 / 70 728 220	T08	7,80	110			
70 728 020	T08	7,80	110			
70 729 225 / 70 728 225				T15/SW	8,28	398
70 729 232 / 70 728 232				T15/SW	8,28	398
70 729 240 / 70 728 240				T15/SW	8,28	398

TPMR / TPUN

Designation	L	S	IC
	mm	mm	mm
TPMR 1103..	11,0	3,18	6,35
TPMR 1603..	16,5	3,18	9,52
TPUN 2204..	22,0	4,76	12,70



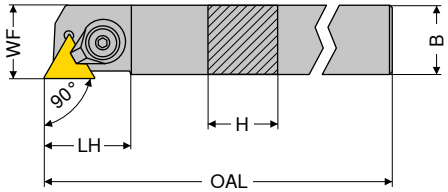
TPMR / TPUN

		CTCK110	CTCP135	CTCP135	CTCP135
		DCX3110	HCR1135	HCR1135	HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		M	M	M	M
		TPMR	TPMR	TPMR	TPUN
		1A/11	1A/11	1A/08	1A/13
ISO	RE	Article no. 70 189 ...	Article no. 76 228 ...	Article no. 76 232 ...	Article no. 76 212 ...
	mm	EUR	EUR	EUR	EUR
110304EL	0,4			10,38 706	
110304EN	0,4		7,12 702		5,67 702
110304ER	0,4			10,38 704	
110308EN	0,8		7,12 704		
160304EL	0,4			13,20 714	
160304EN	0,4		9,29 706		7,42 720
160304ER	0,4			13,20 712	
160308EL	0,8			13,20 718	
160308EN	0,8	9,29 008	9,29 708		7,42 722
160308ER	0,8			13,20 716	
160312EN	1,2				7,42 724
220408EN	0,8				13,30 742
220412EN	1,2				13,30 744
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron		●			
Non ferrous metals					
Heat resistant alloys			○	○	○

9

Simplex – CTAP 90° – Toolholder with top clamping







Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/23 Article no. 70 797 ...		Right-hand 2A/23 Article no. 70 796 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
CTAP R/L 2020 K16	20	20	125	30	20,5	10	TP.. 1603	90,28	**020**	90,28	**020**
CTAP R/L 2525 M16	25	25	150	30	20,5	10	TP.. 1603	92,80	**025**	92,80	**025**


Clamp


Key I


Clamping screw


Countersunk head grooved pin

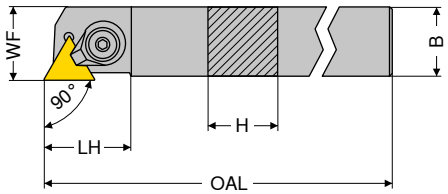

Solid Carbide Seat T


Spring washer

Spare parts for Article no.	2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
70 796 020 / 70 797 020	8,87	**601**	SW4	2,57	**396**	M8x20	5,17	**604**	1,10	**603**	9,93	**602**	1,10	**605**
70 796 025 / 70 797 025	8,87	**601**	SW4	2,57	**396**	M8x20	5,17	**604**	1,10	**603**	9,93	**602**	1,10	**605**

Simplex – CTGP 90° – Toolholder with top clamping







Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/23 Article no. 70 797 ...		Right-hand 2A/23 Article no. 70 796 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
CTGP R 1010 E11	10	10	70	16,5	12	5	TP.. 1103			79,90	**010**
CTGP R/L 1212 F11	12	12	80	16,5	12	5	TP.. 1103	79,90	**012**	79,90	**012**


Clamp

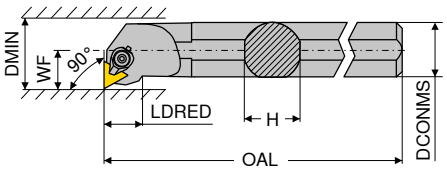

Key D


Clamping screw

Spare parts for Article no.	2A/28 Article no. 70 950 ... EUR			Y7 Article no. 80 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
70 796 010	5,17	**600**	T15	9,28	**113**	M4x10	1,89	**477**
70 797 012 / 70 796 012	5,17	**600**	T15	9,28	**113**	M4x10	1,89	**477**

Simplex – CTFP 90° – Boring bar with top clamping







Illustrations show right-hand versions

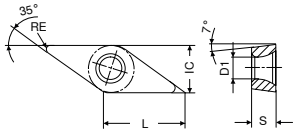
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/23 Article no. 70 795 ... EUR		Right-hand 2A/23 Article no. 70 794 ... EUR	
S12Q CTFP R/L 11	12	11,0	180	15	9	16	5	TP.. 1103	107,00	**012**	107,00	**012**
S16R CTFP R/L 11	16	14,5	200	15	11	20	5	TP.. 1103	107,00	**016**	107,00	**016**
S20S CTFP R/L 11	20	18,0	250	15	13	25	5	TP.. 1103	130,60	**020**	130,60	**020**
S25T CTFP R/L 16	25	23,0	300	20	17	32	10	TP.. 1603	154,10	**025**	154,10	**025**
S32U CTFP R/L 16	32	30,0	350	20	22	40	10	TP.. 1603	209,00	**032**	209,00	**032**

Spare parts for Article no.	2A/28 Clamp Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Countersunk head grooved pin Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat T Article no. 70 950 ... EUR	
70 794 012 / 70 795 012	5,17	**600**	T15	9,28	**113**	M4x10	1,89	**477**				
70 794 016 / 70 795 016	5,17	**600**	T15	9,28	**113**	M4x10	1,89	**477**				
70 794 020 / 70 795 020	5,17	**600**	T15	9,28	**113**	M4x10	1,89	**477**				
70 794 025 / 70 795 025	8,72	**606**	T20	9,95	**114**	M6x16,2	5,17	**596**	1,10	**603**	9,93	**602**
70 794 032 / 70 795 032	8,72	**606**	T20	9,95	**114**	M6x16,2	5,17	**596**	1,10	**603**	9,93	**602**

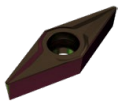
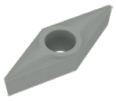
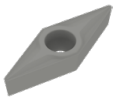
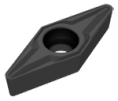
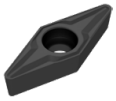
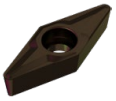
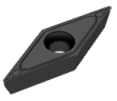
9

VCGT / VCMT / VCXT / VCET

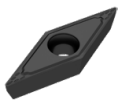
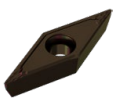
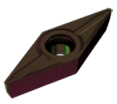
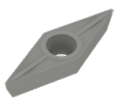
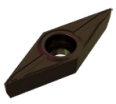
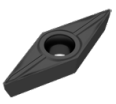
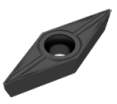
Designation	L	S	D1	IC
	mm	mm	mm	mm
VCET 1103..	11,1	3,18	2,8	6,35
VC.T 1103..	11,1	3,18	2,9	6,35
VC.T 1604..	16,6	4,76	4,4	9,52
VCGT 2205..	22,1	5,56	5,5	12,70



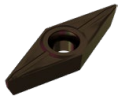
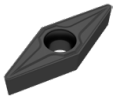
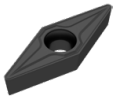
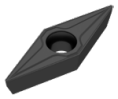
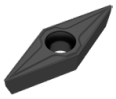
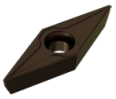
VCGT / VCMT

	-CF05 CTEP110	-SF TCM407	-SF TCM10	-SF CTCP115	-SF CTCP125	-SF CTCP135	-SF CTCP115
	-PF14 DCC1110	-ZF CWC407	-ZF CWC10	-ZF HCX1115	-ZF HCX1125	-ZF HCR1135	-ZF HCX1115
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET VCGT	CERMET VCGT	CERMET VCGT	VCGT	VCGT	VCGT	VCMT
	1A/78	1A/78	1A/78	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 276 ... EUR	Article no. 70 277 ... EUR	Article no. 70 277 ... EUR	Article no. 76 277 ... EUR	Article no. 76 277 ... EUR	Article no. 76 277 ... EUR	Article no. 76 279 ... EUR
110301EN 0,1			15,33 892				
110302EN 0,2	16,80 014	15,33 844	15,33 894	16,00 314	16,00 514	16,00 714	
110304EN 0,4	16,80 016	15,33 846	15,33 896	16,00 316	16,00 516	16,00 716	
110308EN 0,8				16,00 318	16,00 518	16,00 718	
160404EN 0,4	20,03 028	19,36 850	19,36 900				16,00 328
160408EN 0,8	20,03 030		19,36 902				16,00 330
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○	○		○
Non ferrous metals							
Heat resistant alloys						○	

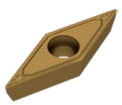
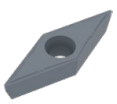
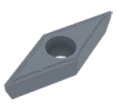
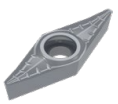
VCMT / VCGT

	-SF CTCP125	-SF CTCP135	-CF55 CTEP110	-SMF TCM10	-SMF CTCP135	-SMF CTCP115	-SMF CTCP125
	-ZF HCX1125	-ZF HCR1135	-PF15 DCC1110	-SMF CWC10	-SMF HCR1135	-SMF HCX1115	-SMF HCX1125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	VCMT	VCMT	CERMET VCMT	CERMET VCMT	VCGT	VCMT	VCMT
	1A/08	1A/08	1A/78	1A/78	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 279 ... EUR	Article no. 76 279 ... EUR	Article no. 76 292 ... EUR	Article no. 70 288 ... EUR	Article no. 76 285 ... EUR	Article no. 76 288 ... EUR	Article no. 76 288 ... EUR
110302EN 0,2					16,00 714		
110304EN 0,4			13,04 016	12,31 896		13,76 316	13,76 516
160404EN 0,4	16,00 528	16,00 728	16,00 028	15,23 900		16,00 328	16,00 528
160408EN 0,8	16,00 530		16,00 030	15,23 902		16,00 330	16,00 530
Steel	●	●	●	●	●	●	●
Stainless steel	○	○	○		○	○	○
Cast iron	○		○	○		○	○
Non ferrous metals							
Heat resistant alloys		○			○		

VCMT / VCGT

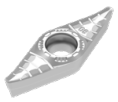
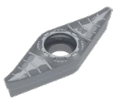
	-SMF CTCP135	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135	-SF CTC2135
	-SMF HCR1135	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135	-ZF CWN2135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
							
	F	M	M	M	M	M	F
	VCMT	VCMT	VCMT	VCMT	VCMT	VCMT	VCGT
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 288 ... EUR	Article no. 70 278 ... EUR	Article no. 70 278 ... EUR	Article no. 76 278 ... EUR	Article no. 76 278 ... EUR	Article no. 76 278 ... EUR	Article no. 70 277 ... EUR
110302EN 0,2							16,00 444
110304EN 0,4	13,76 716						16,00 446
160404EN 0,4	16,00 728	16,00 028	16,00 528	16,00 328	16,00 528	16,00 728	
160406EN 0,6				16,00 329			
160408EN 0,8	16,00 730	16,00 030	16,00 530	16,00 330	16,00 530	16,00 730	
160412EN 1,2		16,00 032	16,00 532	16,00 33200	16,00 53200	16,00 732	
Steel	●	●	●	●	●	●	○
Stainless steel	○	○		○	○	○	●
Cast iron		●	●	○	○		
Non ferrous metals							
Heat resistant alloys	○					○	●

VCMT / VCXT / VCGT

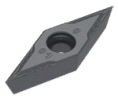
	-SF CTC2135	-M81 CWN2120	-M25 CTPM125	-SM CTC2135	-M55 CTPM125	-25P H210T	-25P AMZ
	-ZF CWN2135		-PF23 HCN2125	-ZM CWN2135	-PF26 HCN2125	-25P CWK20	-25P AMZ
			DRAGONSKIN		DRAGONSKIN		
							
	F	M	F	M	F	F	F
	VCMT	VCXT	VCMT	VCMT	VCMT	VCGT	VCGT
	1A/08	1A	1A/08	1A/08	1A/08	1A/90	1A/90
ISO / RE mm	Article no. 70 279 ... EUR	Article no. 70 280 ... EUR	Article no. 75 219 ... EUR	Article no. 70 278 ... EUR	Article no. 75 220 ... EUR	Article no. 70 282 ... EUR	Article no. 70 282 ... EUR
110302FN 0,2						15,10 638	17,34 538
110304FN 0,4						15,10 640	17,34 540
160404EN 0,4	16,00 440		16,00 228	16,00 440	16,00 228		
160404FN 0,4		15,25 112				18,46 642	21,49 562
160408EN 0,8				16,00 442	16,00 230		
160408FN 0,8		15,25 114				18,46 644	21,49 564
160412FN 1,2						18,46 646	21,49 566
220530FN 3,0						24,95 648	28,64 568
Steel	○		○	○	○		○
Stainless steel	●	●	●	●	●		○
Cast iron						○	○
Non ferrous metals		○				●	●
Heat resistant alloys	●			●		○	

9

VCGT / VCMT

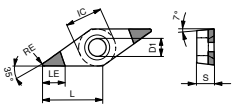
ISO	RE mm	-25Q H210T / -25Q CWK20	-25Q AMZ / -25Q AMZ	-27 H10T / -AL CWK15	-27 CWN15 / -AL CWN15	-27 AMZ / -AL AMZ	-29 H216T	-29 AMZ
								
		M	M	M	M	M	M	M
		VCGT	VCGT	VCGT	VCGT	VCGT	VCMT	VCMT
		1A/90	1A	1A/90	1A	1A/90	NEW 1A/90	NEW 1A/90
		Article no. 70 282 ...	Article no. 70 282 ...	Article no. 70 280 ...	Article no. 70 280 ...	Article no. 70 280 ...	Article no. 70 247 ...	Article no. 70 247 ...
		EUR	EUR	EUR	EUR	EUR	EUR	EUR
110302FN	0,2			14,42 606	16,97 306	16,90 456		
110304FL	0,4	16,80 670	20,44 620					
110304FN	0,4			14,42 608	16,97 308	16,90 458		
110304FR	0,4	16,80 680	20,44 630					
110308FN	0,8			14,42 610	16,97 310			
160404EN	0,4						13,54 62800	16,23 42800
160404FN	0,4			17,57 612	20,00 312	20,48 462		
160408EN	0,8						13,54 63000	16,23 43000
160408FN	0,8			17,57 614	20,00 314	20,48 464		
160412EN	1,2						13,54 63200	16,23 43200
160412FN	1,2			17,57 616	20,00 316			
220530FN	3,0			23,84 618				
Steel			○			○		○
Stainless steel			○		○	○		○
Cast iron		○	○	○		○	○	○
Non ferrous metals		●	●	●	●	●	●	●
Heat resistant alloys		○		○			○	

VCET / VCGT

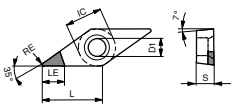
ISO	RE mm	-F05 CTPX710	-F23 CTP2120 / -F23 CCN2120
		DRAGONSKIN	
			
		F	F
		VCET	VCGT
		NEW 1H/17	1A/08
		Article no. 76 255 ...	Article no. 70 193 ...
		EUR	EUR
110300FN	0,00		16,00 600
1103015FN	0,15	23,29 11800	
110301FN	0,10	23,29 11600	16,00 602
113005FN	0,05	23,29 11400	
11302FN	0,20	23,29 12000	
11304FN	0,40	23,29 12200	
160401FN	0,10		20,48 606
Steel		●	
Stainless steel		●	●
Cast iron		○	○
Non ferrous metals		○	○
Heat resistant alloys		●	●

VCGW

Designation	L	S	D1	IC
	mm	mm	mm	mm
VCGW 1103..	11,1	3,18	2,9	6,35
VCGW 1604..	16,6	4,76	4,4	9,52

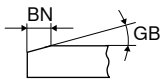


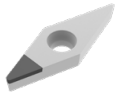
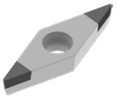
-B (-2MC)



-A

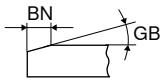
VCGW

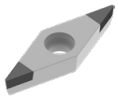


	-A CTBS10U	-B CTBS20C	-B CTBH15U	-B CTBH15C
	PBC10	-2MC PBC15-S		
				
	F	F	F	F
	CBN VCGW	CBN VCGW	CBN VCGW	CBN VCGW
	Y0	Y0	NEW Y0	NEW Y0
ISO	Article no. 71 160 ...	Article no. 71 165 ...	Article no. 71 036 ...	Article no. 71 035 ...
RE mm / GB ° / BN mm / LE mm	EUR	EUR	EUR	EUR
110302SN 0,2 15 0,11 3,4			69,18 32014	66,91 32014
110302TN 0,2 20 0,14 4,7	40,80 300			
110302SN 0,2 25 0,13 3,4			69,18 32029	66,91 32029
110302FN 0,2 4,7	40,80 200			
110302EN 0,2 3,4			69,18 02000	66,91 02000
110304SN 0,4 10 0,09 3,1		55,21 121		
110304SN 0,4 15 0,11 3,1		55,21 131	69,18 32214	66,91 32214
110304TN 0,4 20 0,14 4,5	40,80 302			
110304TN 0,4 20 0,15 3,1		55,21 141		
110304SN 0,4 20 0,16 3,1		55,21 151		
110304SN 0,4 25 0,13 3,1				66,91 32229
110304SN 0,4 25 0,18 3,1		55,21 171		
110304FN 0,4 4,5	40,80 202			
110304EN 0,4 3,1			69,18 02200	66,91 02200
110308SN 0,8 10 0,09 2,5		55,21 122		
110308SN 0,8 15 0,11 2,5		55,21 132	69,18 32414	66,91 32414
110308TN 0,8 20 0,14 4,2	40,80 304			
110308SN 0,8 20 0,16 2,5		55,21 152		
110308SN 0,8 25 0,13 3,1			69,18 32229	
110308SN 0,8 25 0,13 2,5			69,18 32429	66,91 32429
110308TN 0,8 25 0,17 2,5		55,21 162		
110308SN 0,8 25 0,18 2,5		55,21 172		
110308FN 0,8 4,2	40,80 204			
110308EN 0,8 2,5		55,21 112	69,18 02400	66,91 02400
160402SN 0,2 15 0,11 3,4			69,18 33614	66,91 33614
160402TN 0,2 20 0,14 5,3	45,78 305			
160404SN 0,2 25 0,13 3,4			69,18 33629	
160402RN 0,2 3,4				66,91 23600
160402FN 0,2 5,3	45,78 205			
160402SN 0,2 25 0,13 3,4				66,91 33629
160404SN 0,4 10 0,09 3,1		55,21 125		
160404SN 0,4 15 0,11 3,1		55,21 135	69,18 33814	66,91 33814
160404TN 0,4 20 0,14 5,0	45,78 306			
160404TN 0,4 20 0,15 3,1		55,21 145		
160404SN 0,4 20 0,16 3,1		55,21 155		
160404RN 0,4 3,4			69,18 23600	
160404SN 0,4 25 0,13 3,1			69,18 33829	66,91 33829
160404SN 0,4 25 0,18 3,1		55,21 175		
160404FN 0,4 5,0	45,78 206			
160404RN 0,4 3,1			69,18 23800	66,91 23800
Cast iron	●	●		
Sintered steels	●	●		
Heat resistant alloys	●	●		
hardened < 45 HRC			●	●
hardened 46–55 HRC			●	●
hardened 56–60 HRC			●	●
hardened 61–65 HRC				

9

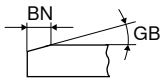
VCGW



	-A CTBS10U	-B CTBS20C	-B CTBH15U	-B CTBH15C
	PBC10	-2MC PBC15-S		
				
	F	F	F	F
	CBN VCGW	CBN VCGW	CBN VCGW	CBN VCGW
	Y0	Y0	NEW Y0	NEW Y0

ISO	RE mm	GB °	BN mm	LE mm	Article no. 71 160 ... EUR		Article no. 71 165 ... EUR		Article no. 71 036 ... EUR		Article no. 71 035 ... EUR	
160408SN	0,8	10	0,09	2,5			55,21	**126**				
160408SN	0,8	15	0,11	2,5			55,21	**136**	69,18	**34014**	66,91	**34014**
160408TN	0,8	20	0,14	4,4	45,78	**308**						
160408SN	0,8	20	0,16	2,5			55,21	**156**				
160408SN	0,8	25	0,13	2,5					69,18	**34029**	66,91	**34029**
160408TN	0,8	25	0,17	2,5			55,21	**166**				
160408SN	0,8	25	0,18	2,5			55,21	**176**				
160408EN	0,8			2,5			55,21	**116**				
160408FN	0,8			4,4	45,78	**208**						
160408RN	0,8			2,5					69,18	**24000**	66,91	**24000**
Cast iron					●		●					
Sintered steels					●		●					
Heat resistant alloys					●		●					
hardened < 45 HRC									●		●	
hardened 46–55 HRC									●		●	
hardened 56–60 HRC									●		●	
hardened 61–65 HRC												

VCGW



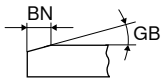
	-A CTBH21U	-B CTBH20C	-A CTBH40U	-B CTBH40C
	PBC25	-2MC PBC25-S	PBC40	-2MC PBC40-S
				
	F	F	F	F
	CBN VCGW	CBN VCGW	CBN VCGW	CBN VCGW
	Y0	Y0	Y0	Y0

ISO	RE mm	GB °	BN mm	LE mm	Article no. 71 160 ... EUR		Article no. 71 165 ... EUR		Article no. 71 160 ... EUR		Article no. 71 165 ... EUR	
110302TN	0,2	20	0,14	4,7	40,80	**500**						
110302TN	0,2	25	0,12	4,7					40,80	**900**		
110302FN	0,2			4,7	40,80	**400** [1]			40,80	**800**		
110304FN	0,4			4,5	40,80	**402** [1]			40,80	**802**		
110304SN	0,4	20	0,09	3,1			55,21	**251**			55,21	**331**
110304TN	0,4	20	0,14	4,5	40,80	**502**						
110304SN	0,4	25	0,09	3,1							55,21	**351**
110304TN	0,4	25	0,11	3,1							55,21	**341**
110304TN	0,4	25	0,12	4,5					40,80	**902**		
Cast iron												
Sintered steels												
Heat resistant alloys												
hardened < 45 HRC												
hardened 46–55 HRC					●		●		●		●	
hardened 56–60 HRC					●		●		●		●	
hardened 61–65 HRC									●		●	

1) Machining to 60 HRC

→ v_c Page 160–167
Continued on next page

VCGW



ISO	RE	GB	BN	LE	-A CTBH21U PBC25 F CBN VCGW Y0 Article no. 71 160 ... EUR		-B CTBH20C -2MC PBC25-S F CBN VCGW Y0 Article no. 71 165 ... EUR		-A CTBH40U PBC40 F CBN VCGW Y0 Article no. 71 160 ... EUR		-B CTBH40C -2MC PBC40-S F CBN VCGW Y0 Article no. 71 165 ... EUR	
	mm	°	mm	mm								
110304EN	0,4			3,1			55,21	221				
110304FN	0,4			3,1			55,21	211				
110304TN	0,4	25	0,14	3,1			55,21	261				
110304SN	0,4	25	0,15	3,1			55,21	271				
110304TN	0,4	30	0,14	3,1							55,21	361
110304SN	0,4	35	0,17	3,1							55,21	381
110308FN	0,8			4,2	40,80	404 [1]			40,80	804		
110308SN	0,8	15	0,11	2,5			55,21	242				
110308SN	0,8	20	0,09	2,5			55,21	252			55,21	332
110308TN	0,8	20	0,14	4,2	40,80	504						
110308SN	0,8	25	0,09	2,5							55,21	352
110308TN	0,8	25	0,11	2,5							55,21	342
110308TN	0,8	25	0,14	2,5			55,21	262				
110308SN	0,8	25	0,15	2,5			55,21	272				
110308TN	0,8	30	0,14	2,5							55,21	362
110308SN	0,8	30	0,16	2,5							55,21	372
110308SN	0,8	30	0,18	2,5			55,21	282				
110308SN	0,8	35	0,17	2,5							55,21	382
110308EN	0,8			2,5			55,21	222			55,21	312
160402FN	0,2			5,3	45,78	405 [1]			45,78	805		
160402TN	0,2	20	0,14	5,3	45,78	505						
160402TN	0,2	25	0,12	5,3					45,78	905		
160404FN	0,4			5,0	45,78	406 [1]			45,78	806		
160404SN	0,4	20	0,09	3,1			55,21	255			55,21	335
160404TN	0,4	20	0,14	5,0	45,78	506						
160404SN	0,4	25	0,09	3,1							55,21	355
160404TN	0,4	25	0,11	3,1							55,21	345
160404TN	0,4	25	0,12	5,0					45,78	906		
160404FN	0,4			3,1			55,21	215				
160404EN	0,4			3,1			55,21	225				
160404TN	0,4	25	0,14	3,1			55,21	265				
160404TN	0,4	30	0,14	3,1							55,21	365
160404SN	0,4	35	0,17	3,1							55,21	385
160408FN	0,8			4,4	45,78	408 [1]			45,78	808		
160408SN	0,8	15	0,11	2,5			55,21	246				
160408SN	0,8	20	0,09	2,5			55,21	256			55,21	336
160408TN	0,8	20	0,14	4,4	45,78	508						
160408SN	0,8	25	0,09	2,5							55,21	356
160408TN	0,8	25	0,11	2,5							55,21	346
160408TN	0,8	25	0,12	4,4					45,78	908		
160408TN	0,8	25	0,14	2,5			55,21	266				
160408SN	0,8	25	0,15	2,5			55,21	276				
160408TN	0,8	30	0,14	2,5							55,21	366
160408SN	0,8	30	0,16	2,5							55,21	376
160408SN	0,8	30	0,18	2,5			55,21	286				
160408SN	0,8	35	0,17	2,5							55,21	386
160408EN	0,8			2,5			55,21	226			55,21	316
160412TN	1,2	20	0,14	3,9	45,78	510						

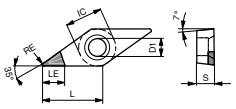
Cast iron				
Sintered steels				
Heat resistant alloys				
hardened < 45 HRC				
hardened 46–55 HRC	●	●	●	●
hardened 56–60 HRC	●	●	●	●
hardened 61–65 HRC			●	●

1) Machining to 60 HRC

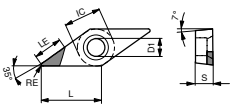
9

VCGW / VCGT

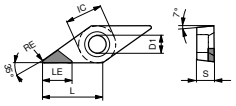
Designation	L	S	D1	IC
	mm	mm	mm	mm
VCG. 1103..	11,1	3,18	2,9	6,35
VCG. 1604..	16,6	4,76	4,4	9,52



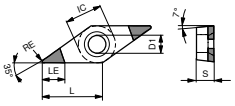
VCGT -A



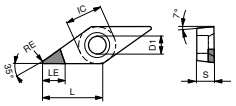
VCGT-L



VCGT-R

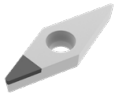
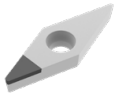
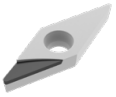
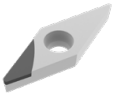


-B (-2MC)

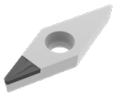
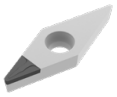
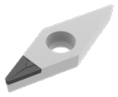
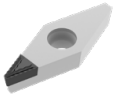
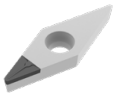


VCGW -A

VCGW / VCGT

	-A CTDMD05	-A CTDPD20	-A CTDPD20	-A CTDPD20	-A CTDPD20
	MDC	PDC	PDC	PDC	PDC
					
	F	F	F	F	F
	DIAMOND VCGW	DIAMOND VCGW	DIAMOND VCGT	DIAMOND VCGT	DIAMOND VCGT
	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 160 ...	Article no. 71 160 ...	Article no. 71 062 ...	Article no. 71 063 ...	Article no. 71 064 ...
RE / LE	EUR	EUR	EUR	EUR	EUR
mm / mm					
110302FN 0,2 3,0	329,60 050				
110302FN 0,2 4,6		55,01 100	57,01 100		
110304FN 0,4 3,0	329,60 052				
110304FN 0,4 3,9		55,01 102	57,01 102		
110304FRR 0,4 6,5				73,02 102	
110304FLL 0,4 6,5					73,02 102
110308FN 0,8 3,3		57,01 104	57,01 104		
110308FRR 0,8 6,0				73,02 104	
110308FLL 0,8 6,0					73,02 104
160402FN 0,2 5,9		59,24 105	62,42 105		
160404FN 0,4 5,5		60,30 106	62,42 106		
160404FRR 0,4 7,5				78,31 106	
160404FLL 0,4 7,5					78,31 106
160408FN 0,8 5,0		62,42 108	62,42 108		
160408FRR 0,8 7,0				78,31 108	
160408FLL 0,8 7,0					78,31 108
160412FN 1,2 4,5		67,61 110	71,75 110		
160412FRR 1,2 7,0				83,41 110	
160412FLL 1,2 7,0					83,41 110
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys	○				

VCGT

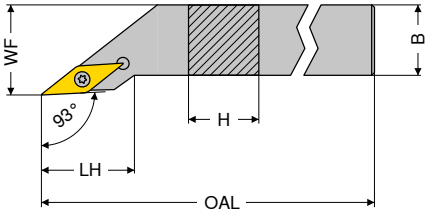
			-A-CB1 CTDPD20		-A-CB1 CTDPS30		-A-CB2 CTDPS30		-A-CB3 CTDPU20		-A-CB1 CTDCD10		-A-CB2 CTDCD10	
			-CB1 PDC		-CB1 PDC-S		-CB2 PDC-S		-CB3 PDC-S		-CB1 CVD		-CB2 CVD	
														
			F		F		M		R		F		M	
			DIAMOND VCGT		DIAMOND VCGT		DIAMOND VCGT		DIAMOND VCGT		DIAMOND VCGT		DIAMOND VCGT	
			Y0		Y0		Y0		Y0		Y0		Y0	
ISO	RE	LE	Article no. 71 330 ...		Article no. 71 330 ...		Article no. 71 331 ...		Article no. 71 332 ...		Article no. 71 330 ...		Article no. 71 331 ...	
	mm	mm	EUR		EUR		EUR		EUR		EUR		EUR	
110302FN	0,2	3,0									93,26	312		
110302EN	0,2	3,0											93,26	312
110302EN	0,2	4,6					78,63	212						
110302FN	0,2	4,6	81,07	112										
110304FN	0,4	3,0									93,26	314		
110304EN	0,4	3,0											93,26	314
110304EN	0,4	3,9					81,07	214	81,07	214				
110304FN	0,4	3,9	81,07	114	81,07	214								
160404EN	0,4	3,0											96,97	334
160404EN	0,4	5,5					84,78	234	84,78	234				
160404FN	0,4	5,5	84,78	134	84,78	234								
160408EN	0,8	3,0											108,10	338
160408EN	0,8	5,0					93,26	238						
160408FN	0,8	5,0	93,26	138	93,26	238								
160412EN	1,2	4,5					103,10	242						

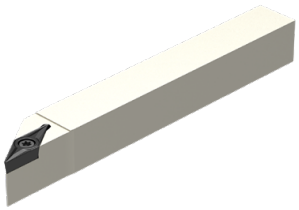
Steel								
Stainless steel								
Cast iron								
Non ferrous metals	●		●		●		●	
Heat resistant alloys			○		○		○	

9

MaxiLock-S – SVJC 93° – Toolholder with screw clamping







Illustrations show right-hand versions

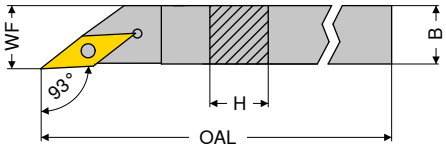
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 697 ...		Right-hand 2A/24 Article no. 70 696 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SVJC R/L 1212 F11	12	12	80	21,5	16	1,2	VC.. 1103	79,27	**012**	79,27	**012**
SVJC R/L 1616 H11	16	16	100	21,5	20	1,2	VC.. 1103	87,97	**016**	87,97	**016**
SVJC R/L 2020 K11	20	20	125	23,0	25	1,2	VC.. 1103	100,90	**020**	100,90	**020**
SVJC R/L 2525 M11	25	25	150	25,5	32	1,2	VC.. 1103	108,20	**025**	108,20	**025**
SVJC R/L 2020 K16	20	20	125	29,5	25	3,2	VC.. 1604	100,90	**120**	100,90	**120**
SVJC R/L 2525 M16	25	25	150	32,5	32	3,2	VC.. 1604	108,20	**125**	108,20	**125**
SVJC R/L 3225 P16	32	25	170	32,5	32	3,2	VC.. 1604	116,70	**132**	116,70	**132**

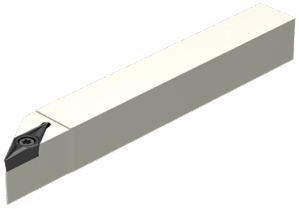
Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
Insert	EUR		EUR		EUR		EUR		EUR	
VC.. 1103	7,80	**110**			2,36	**112**				
VC.. 1604			8,28	**398**	3,14	**113**	10,06	**107**	4,64	**171**

MaxiLock-S – SVJC 93° – Toolholder with screw clamping





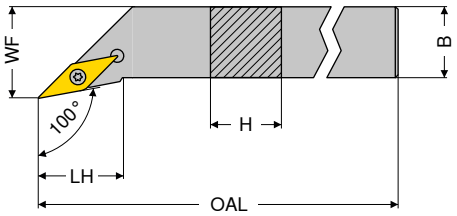


Illustrations show right-hand versions

ISO designation	H	B	OAL	WF	torque moment	Insert	Left-hand X0 Article no. 70 697 ...		Right-hand X0 Article no. 70 696 ...	
	mm	mm	mm	mm	Nm		EUR		EUR	
SVJC R/L 0808 H11	8	8	100	8	1,2	VC.. 1103	84,51	**008**	84,51	**008**
SVJC R/L 1010 H11	10	10	100	10	1,2	VC.. 1103	84,51	**010**	84,51	**010**
SVJC R/L 1212 H11	12	12	100	12	1,2	VC.. 1103	97,30	**112**	97,30	**112**
SVJC R/L 1616 K11	16	16	125	16	1,2	VC.. 1103	105,90	**116**	105,90	**116**

Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
Insert	EUR		EUR	
VC.. 1103	7,80	**110**	2,36	**112**

MaxiLock-S – SVZC 100° – Toolholder with screw clamping





Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 701 ...		Right-hand 2A/24 Article no. 70 700 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SVZC R/L 2525 M16	25	25	150	28,5	32	3,2	VC.. 1604	108,20	025	108,20	025


Combination Key (2A/28)

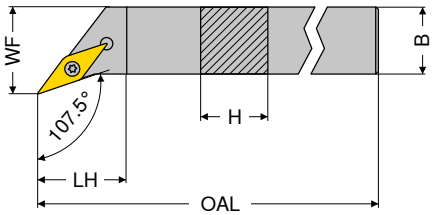

Clamping screw (2A/28)


Solid Carbide Seat V (2A/28)


Threaded sleeve (2A/28)

Spare parts for Article no.		Combination Key 2A/28 Article no. 70 950 ...		Clamping screw 2A/28 Article no. 70 950 ...		Solid Carbide Seat V 2A/28 Article no. 70 950 ...		Threaded sleeve 2A/28 Article no. 70 950 ...	
		EUR		EUR		EUR		EUR	
70 701 025 / 70 700 025	T15/SW	8,28	398	M3,5x11	3,14	113	10,06	107	M3,5	4,64	171

MaxiLock-S – SVHC 107.5° – Toolholder with screw clamping





Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 705 ...		Right-hand 2A/24 Article no. 70 704 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SVHC R/L 1212 F11	12	12	80	11,4	16	1,2	VC.. 1103	79,27	012	79,27	012
SVHC R/L 1616 H11	16	16	100	11,4	20	1,2	VC.. 1103	87,97	016	87,97	016
SVHC R/L 2020 K11	20	20	125	14,6	25	1,2	VC.. 1103	100,90	020	100,90	020
SVHC R/L 2525 M11	25	25	150	20,9	32	1,2	VC.. 1103	108,20	025	108,20	025
SVHC R/L 2020 K16	20	20	125	13,2	25	3,2	VC.. 1604	100,90	120	100,90	120
SVHC R/L 2525 M16	25	25	150	19,6	32	3,2	VC.. 1604	108,20	125	108,20	125
SVHC R/L 3225 P16	32	25	170	19,6	32	3,2	VC.. 1604	116,70	132	116,70	132
SVHC R/L 2525 M22	25	25	150	19,6	32	5	VC.. 2205	108,20	225	108,20	225
SVHC R/L 3225 P22	32	25	170	19,6	32	5	VC.. 2205	116,70	232	116,70	232

Tool holders with HSK-T interface can be found in → **Chapter 16.**


Key D (Y7)


Combination Key (2A/28)


Clamping screw (2A)

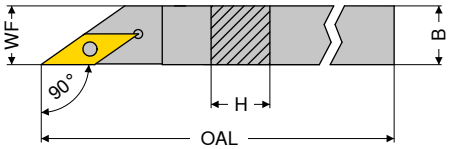

Solid Carbide Seat V (2A/28)

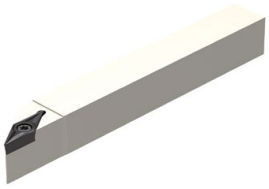

Threaded sleeve (2A/28)

Spare parts for Article no.	Key D Y7 Article no. 80 950 ...		Combination Key 2A/28 Article no. 70 950 ...		Clamping screw 2A Article no. 70 950 ...		Solid Carbide Seat V 2A/28 Article no. 70 950 ...		Threaded sleeve 2A/28 Article no. 70 950 ...	
	EUR		EUR		EUR		EUR		EUR	
70 704 012 / 70 705 012	7,80	110			2,36	112				
70 704 016 / 70 705 016	7,80	110			2,36	112				
70 704 020 / 70 705 020	7,80	110			2,36	112				
70 704 025 / 70 705 025	7,80	110			2,36	112				
70 704 120 / 70 705 120			8,28	398	3,14	113	10,06	107	4,64	171
70 704 125 / 70 705 125			8,28	398	3,14	113	10,06	107	4,64	171
70 704 132 / 70 705 132			8,28	398	3,14	113	10,06	107	4,64	171
70 704 225 / 70 705 225			8,28	398	2,57	114	13,35	109	4,64	170
70 704 232 / 70 705 232			8,28	398	2,57	114	13,35	109	4,64	170

MaxiLock-S – SVAC 90° – Toolholder with screw clamping

▲ for sliding head lathes





Illustrations show right-hand versions

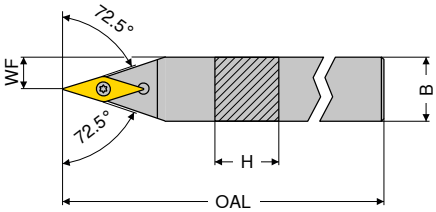
ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Left-hand X0 Article no. 70 695 ...	EUR		Right-hand X0 Article no. 70 694 ...	EUR	
SVAC R/L 0808 H11	8	8	100	8	1,2	VC.. 1103		84,51	008		84,51	008
SVAC R/L 1010 H11	10	10	100	10	1,2	VC.. 1103		84,51	010		84,51	010
SVAC R/L 1212 H11	12	12	100	12	1,2	VC.. 1103		97,30	012		97,30	012

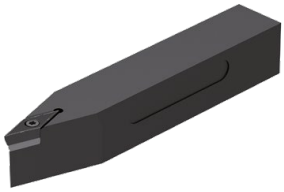
Key D


Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ...	EUR		2A Article no. 70 950 ...	EUR	
70 694 008 / 70 695 008	T08		7,80	110	M2,5x6	2,36	112
70 694 010 / 70 695 010	T08		7,80	110	M2,5x6	2,36	112
70 694 012 / 70 695 012	T08		7,80	110	M2,5x6	2,36	112

MaxiLock-S – SVVC 72.5° – Toolholder with screw clamping





ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 692 ...	EUR	
SVVC N 1212 F11	12	12	80	6,0	1,2	VC.. 1103		79,27	012
SVVC N 1616 H11	16	16	100	8,0	1,2	VC.. 1103		87,97	016
SVVC N 2020 K11	20	20	125	10,0	1,2	VC.. 1103		100,90	020
SVVC N 2525 M11	25	25	150	12,5	1,2	VC.. 1103		108,20	025
SVVC N 2020 K16	20	20	125	10,0	3,2	VC.. 1604		100,90	120
SVVC N 2525 M16	25	25	150	12,5	3,2	VC.. 1604		108,20	125
SVVC N 3225 P16	32	25	170	12,5	3,2	VC.. 1604		116,70	132


Key D


Combination Key


Clamping screw


Solid Carbide Seat V

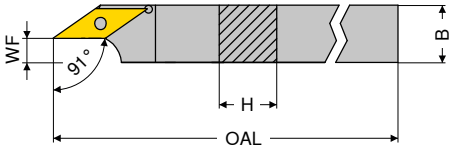

Threaded sleeve

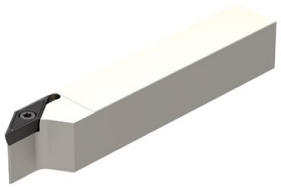
Spare parts for Article no.	Y7 Article no. 80 950 ...	EUR		2A/28 Article no. 70 950 ...	EUR		2A Article no. 70 950 ...	EUR		2A/28 Article no. 70 950 ...	EUR		2A/28 Article no. 70 950 ...	EUR	
70 692 012		7,80	110				2,36	112						
70 692 016		7,80	110				2,36	112						
70 692 020		7,80	110				2,36	112						
70 692 025		7,80	110				2,36	112						
70 692 120				8,28	398		3,14	113		10,06	107		4,64	171
70 692 125				8,28	398		3,14	113		10,06	107		4,64	171
70 692 132				8,28	398		3,14	113		10,06	107		4,64	171

MaxiLock-S – SVXC 91° – Toolholder with screw clamping

▲ for sliding head lathes







Illustrations show right-hand versions

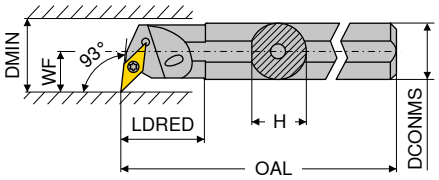
ISO designation	H	B	OAL	WF	torque moment	Insert	Left-hand X0 Article no. 70 691 ...		Right-hand X0 Article no. 70 690 ...	
	mm	mm	mm	mm	Nm		EUR		EUR	
SVXC R/L 1010 H11	10	10	100	3,4	1,2	VC.. 1103	84,51	**010**	84,51	**010**
SVXC R/L 1212 H11	12	12	100	5,4	1,2	VC.. 1103	97,30	**012**	97,30	**012**
SVXC R/L 1616 K11	16	16	125	8,9	1,2	VC.. 1103	105,90	**016**	105,90	**016**
SVXC R/L 2020 K16	20	20	125	10,4	3,2	VC.. 1604	121,60	**020**	121,60	**020**

Spare parts		Y7 Key D Article no. 80 950 ...			2A Clamping screw Article no. 70 950 ...	
for Article no.		EUR			EUR	
70 691 010 / 70 690 010	T08	7,80	**110**	M2,5x6	2,36	**112**
70 691 012 / 70 690 012	T08	7,80	**110**	M2,5x6	2,36	**112**
70 691 016 / 70 690 016	T08	7,80	**110**	M2,5x6	2,36	**112**
70 691 020 / 70 690 020	T15	9,28	**113**	M3,5x11	3,14	**113**

9

MaxiLock-S – SVUC 93° – Boring bar with screw clamping







Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 745 ...		Right-hand 2A/24 Article no. 70 744 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
A16M SVUC R/L 11	16	15,0	150	29	11	20	1,2	VC.. 1103	125,90	**216**	125,90	**216**
A20Q SVUC R/L 11	20	18,5	180	32	13	25	1,2	VC.. 1103	145,10	**220**	145,10	**220**
A25R SVUC R/L 11	25	23,0	200	36	17	32	1,2	VC.. 1103	177,80	**225**	177,80	**225**
A32S SVUC R/L 16	32	30,0	250	50	22	40	3,2	VC.. 1604	213,30	**232**	213,30	**232**
A40T SVUC R/L 16	40	38,0	300	60	27	50	3,2	VC.. 1604	247,50	**240**	247,50	**240**

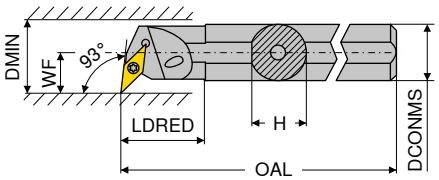
Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR		EUR	
70 744 216 / 70 745 216	7,80	**110**			2,36	**112**				
70 744 220 / 70 745 220	7,80	**110**			2,36	**112**				
70 744 225 / 70 745 225	7,80	**110**			2,36	**112**				
70 744 232 / 70 745 232			8,28	**398**	3,14	**113**	10,06	**107**	4,64	**171**
70 744 240 / 70 745 240			8,28	**398**	3,14	**113**	10,06	**107**	4,64	**171**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

▲ with carbide core







Illustrations show right-hand versions

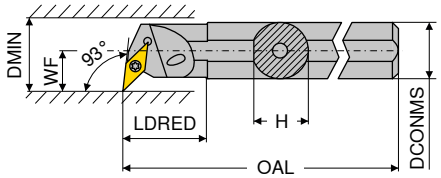
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 747 ...		Right-hand 2A Article no. 70 746 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A16M SVUC R/L 11	16	15	150	16,5	11	21	1,2	VC.. 1103	326,10	**216**	326,10	**216**
E-A20Q SVUC R/L 11	20	18	180	20,5	13	25	1,2	VC.. 1103	464,50	**220**	464,50	**220**
E-A25R SVUC R/L 11	25	23	200	25,5	17	31	1,2	VC.. 1103	788,50	**225**	788,50	**225**
E-A25R SVUC R/L 16	25	23	200	25,5	17	31	3,2	VC.. 1604	788,50	**325**	788,50	**325**
E-A32S SVUC R/L 16	32	30	250	32,5	22	39	3,2	VC.. 1604	850,40	**232**	850,40	**232**

Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
for Article no.	EUR		EUR	
70 746 216 / 70 747 216	7,80	**110**	2,36	**112**
70 746 220 / 70 747 220	7,80	**110**	2,36	**112**
70 746 225 / 70 747 225	7,80	**110**	2,36	**112**
70 746 325 / 70 747 325	9,28	**113**	3,14	**449**
70 746 232 / 70 747 232	9,28	**113**	3,14	**449**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

▲ Type: Solid carbide







Illustrations show right-hand versions

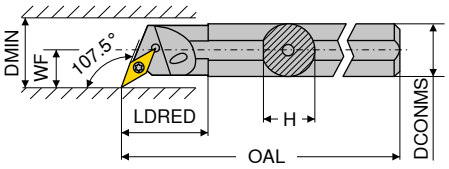
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 747 ...	EUR		Right-hand 2A/24 Article no. 70 746 ...	EUR	
E16R SVUC R/L 11	16	15,0	200	34	11	20	1,2	VC.. 1103		482,10	016		482,10	016
E20S SVUC R/L 11	20	18,5	250	38	13	25	1,2	VC.. 1103		571,80	020		571,80	020
E25T SVUC R/L 11	25	23,0	300	43	17	32	1,2	VC.. 1103		1.001,00	025		1.001,00	025

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR	
70 746 016 / 70 747 016	T08	7,80	110	M2,5x6	2,36	112
70 746 020 / 70 747 020	T08	7,80	110	M2,5x6	2,36	112
70 746 025 / 70 747 025	T08	7,80	110	M2,5x6	2,36	112

MaxiLock-S – SVQC 107.5° – Boring bar with screw clamping

9







Illustrations show right-hand versions

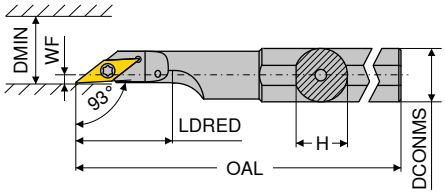
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 749 ...	EUR		Right-hand 2A/24 Article no. 70 748 ...	EUR	
A16M SVQC R/L 11	16	15,0	150	29	11	20	1,2	VC.. 1103		125,90	216		125,90	216
A20Q SVQC R/L 11	20	18,5	180	32	13	25	1,2	VC.. 1103		145,10	220		145,10	220
A25R SVQC R/L 11	25	23,0	200	36	17	32	1,2	VC.. 1103		177,80	225		177,80	225
A32S SVQC R/L 16	32	30,0	250	50	22	40	3,2	VC.. 1604		213,30	232		213,30	232
A40T SVQC R/L 16	40	38,0	300	60	27	50	3,2	VC.. 1604		247,50	240		247,50	240

Tool holders with HSK-T or PSC interface can be found in→ **Chapter 16.**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Combination Key Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat V Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
70 748 216 / 70 749 216	7,80	110			2,36	112				
70 748 220 / 70 749 220	7,80	110			2,36	112				
70 748 225 / 70 749 225	7,80	110			2,36	112				
70 748 232 / 70 749 232			8,28	398	3,14	113	10,06	107	4,64	171
70 748 240 / 70 749 240			8,28	398	3,14	113	10,06	107	4,64	171

MaxiLock-S – SVJC 93° – Boring bar with screw clamping







Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 727 ... EUR		Right-hand 2A Article no. 70 726 ... EUR	
A16M SVJC R/L 11	16	15	150	30	2	22	1,2	VC.. 1103	114,30	**216**	114,30	**216**
A20M SVJC R/L 11	20	19	150	38	2	25	1,2	VC.. 1103	114,30	**220**	114,30	**220**
A25M SVJC R/L 16	25	24	150	44	2	28	3,2	VC.. 1604	114,30	**225**	114,30	**225**



Key D

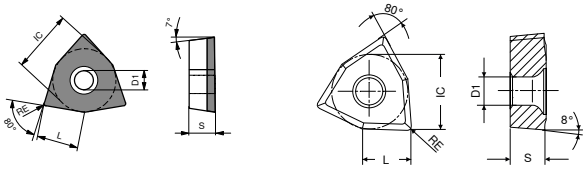


Clamping screw

Spare parts for Article no.	Y7 Article no. 80 950 ... EUR		2A Article no. 70 950 ... EUR	
70 727 216 / 70 726 216	7,80	**110**	2,36	**112**
70 727 220 / 70 726 220	7,80	**110**	2,36	**112**
70 727 225 / 70 726 225	9,28	**113**	3,40	**174**

WCGT / WCGW

Designation	L	S	D1	IC
	mm	mm	mm	mm
WCGW 0201..	2,70	1,58	2,3	3,97
WCGT 0201..	2,71	1,59	2,1	3,97



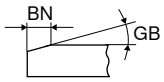
WCGW

WCGT

ISO	RE	-SF TCM10 -ZF CWC10	-SF CTPP430 -ZF HCN2430	-SF H216T -ZF CWK26
	mm	F	F	F
		CERMET WCGT 1A/78	WCGT 1A/08	WCGT 1A/08
		Article no. 70 287 ...	Article no. 70 287 ...	Article no. 70 287 ...
		EUR	EUR	EUR
020102EN	0,2	16,23 900	17,47 450	13,34 600
020104EN	0,4	16,23 902	17,47 452	13,34 602
Steel		●	●	
Stainless steel			●	
Cast iron		○	○	○
Non ferrous metals			○	●
Heat resistant alloys			●	○

9

WCGW



ISO	RE	GB	BN	LE	-F CTBS10U PBC10 F CBN WCGW Y0 Article no. 71 154 ... EUR		-F CTBH15U F CBN WCGW NEW Y0 Article no. 71 037 ... EUR		-F CTBH21U PBC25 F CBN WCGW Y0 Article no. 71 154 ... EUR		-F CTBH40U PBC40 F CBN WCGW Y0 Article no. 71 154 ... EUR	
	mm	°	mm	mm								
020102EN	0,2			2,7			134,00	**00200**				
020102SN	0,2	15	0,11	2,7			134,00	**30214**				
020102TN	0,2	20	0,14	2,7					127,20	**500**		
020102TN	0,2	25	0,12	2,7							127,20	**900**
020102FN	0,2			2,7	127,20	**200**			127,20	**400** [1]	127,20	**800**
020104SN	0,4	15	0,11	2,7			134,00	**30414**				
020104TN	0,4	20	0,14	2,7					127,20	**502**		
020104FN	0,4			2,7					127,20	**402** [1]		
020104EN	0,4			2,7			134,00	**00400**				
020104TN	0,4	25	0,12	2,7							127,20	**902**
Cast iron					●							
Sintered steels					●							
Heat resistant alloys					●							
hardened < 45 HRC							●					
hardened 46–55 HRC							●		●		●	
hardened 56–60 HRC							●		●		●	
hardened 61–65 HRC											●	

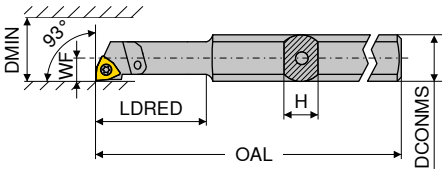
1) Machining to 60 HRC

WCGW

ISO	RE	LE	-F CTDPD20 PDC F DIAMOND WCGW Y0 Article no. 71 154 ... EUR	
	mm	mm		
020102FN	0,2	2,7	126,20	**100**
020104FN	0,4	2,7	126,20	**102**
Steel				
Stainless steel				
Cast iron				
Non ferrous metals				●
Heat resistant alloys				

MaxiLock-S – SWUC 93° – Boring bar with screw clamping





Illustrations show right-hand versions



ISO designation	H	OAL	LDRED	WF	DCONMS	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 731 ...		Right-hand 2A Article no. 70 730 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
A0508H SWUC R/L 02	7	100	24	2,9	8	5,8	0,4	WC.. 0201..	138,40	**005**	138,40	**005**
A0608H SWUC R/L 02	7	100	24	3,9	8	7,8	0,4	WC.. 0201..	138,40	**006**	138,40	**006**
SET							0,4	WC.. 0201..	250,60	**999**	250,60	**999**

Set includes boring bars 70 731 005 and 70 731 006 or 70 730 005 and 70 730 006



Key D



Clamping screw

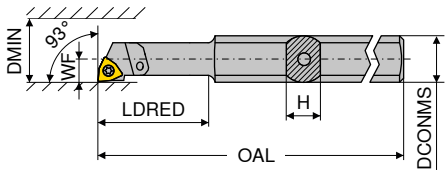
Spare parts for Article no.		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
70 731 005 / 70 730 005	T06	8,44	**108**	M1,8x3,4	3,68	**334**
70 731 006 / 70 730 006	T06	8,44	**108**	M1,8x3,4	3,68	**334**

9

MaxiLock-S – SWUC 93° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions



ISO designation	H	OAL	LDRED	WF	DCONMS	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 743 ...		Right-hand 2A Article no. 70 742 ...	
	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
E-A0508H SWUC R/L 02	7	100	24	2,9	8	5,8	0,4	WC.. 0201..	154,10	**005**	154,10	**005**
E-A0608H SWUC R/L 02	7	100	24	3,9	8	7,8	0,4	WC.. 0201..	154,10	**006**	154,10	**006**
SET							0,4	WC.. 0201..	306,20	**999**	306,20	**999**

Set includes boring bars 70 743 005 and 70 743 006 or 70 742 005 and 70 742 006



Key D



Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
70 743 005 / 70 742 005	T06	8,44	**108**	M1,8x3,4	3,68	**334**
70 743 006 / 70 742 006	T06	8,44	**108**	M1,8x3,4	3,68	**334**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data values for fine machining (F)

Chip breaker:	-CF	-F32	-CF20	-F30	-F40	//	-F23	-M25	-F43	-SF	-SMF	-CF05	-CF55
Chip breaker:	(-CF)	(-F32)	(-NF12)	(-NF23)	(-F40)	//	(-F23)	(-PF23)	(-F43)	(-ZF)	(-SMF)	(-PF14)	(-PF15)

	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN			
	CTEP110 (DCC1110)	TCM407 (CWC407)	TCM10 (CWC10)	CTCK110 (DCX3110)	CTCK120 (HCF3120)	CTCP115 (HCX1115)	CTCP125 (HCX1125)	CTCP135 (HCR1135)	CTPM125 (HCN2125)	CTPX710 (CTPX710)	CTP2120 (CCN2120)	CTC2135 (CWN2135)
Index	v_c in m/min											
1.1	**300–370**	**290–340**	**230–270**	**270–340**	**230 –280**	**260–350**	**200–270**	**180–220**	120–260	**120–170**		170–220
1.2	**400–520**	**340–430**	**280–350**	**270–350**	**230 –310**	**280–360**	**230–280**	**190–240**	130–220	**140–200**		190–230
1.3	**350–400**	**300–370**	**280–350**	**250–340**	**210–280**	**220–350**	**240–290**	**170–210**	130–250	**110–160**		160–200
1.4	**300–370**	**240–310**	**170–330**	**250–330**	**210–270**	**240–320**	**200–270**	**180–220**	130–220	**90–150**		170–230
1.5	**400–440**	**230–280**	**180–340**	**240–320**	**200–260**	**230–300**	**220–260**	**160–210**	100–180	**90–150**		150–200
1.6	**350–410**	**230–270**	**170–320**	**230–310**	**190–270**	**210–270**	**210–250**	**170–230**	100–180	**100–130**		160–220
1.7	**250–300**	**250–310**	**180–280**	**200–280**	**160–230**	**240–320**	**210–280**	**170–210**	60–180	**80–140**		150–200
1.8	**300–360**	**230–290**	**160–250**	**210–270**	**170–220**	**200–280**	**190–240**	**150–190**	60–180	**80–130**		140–180
1.9	**200–320**			**230–310**	**190–260**	**200–300**	**170–240**	**170–200**	80–180	**80–120**		170–200
1.10	**250–320**	**250–310**	**180–270**	**230–290**	**190 –240**	**220–280**	**180–240**	**150–200**	100–180	**80–120**		140–170
1.11	**240–310**	**230–290**	**170–250**	**220–290**	**180–240**	**200–270**	**170–240**	**140–180**	100–180	**80–140**		140–180
1.12	**240–310**	**270–320**	**190–270**	**250–310**	**210–260**	**210–300**	**200–270**	**160–200**	80–180	**130–220**		160–200
1.13				**210–270**	**170–220**	**180–270**	**170–240**	**140–190**	60–180	**80–120**		130–180
1.14				**220–280**	**180–230**	**180–250**	**180–230**	**130–180**	80–180	**70–130**		130–180
1.15	**260–310**	**210–250**	**170–250**	**200–290**	**170–240**	**160–250**	**150–230**	**120–160**	80–150	**70–130**		120–160
1.16	**260–310**	**210–250**	**170–250**	**200–280**	**170–230**	**150–240**	**140–220**	**120–170**	80–150	**70–100**		110–160
2.1	250–320			190–310		200–280	200–280	160–210	**200–280**	**90–260**	**190–260**	**160–240**
2.2	250–320			190–320		200–280	200–280	160–210	**200–280**	**80–240**	**200–250**	**180–250**
2.3	300–350			180–300		190–260	190–260	130–200	**190–260**	**70–240**	**190–240**	**150–240**
2.4	210–250			200–300		190 -240	190–240	120–200	**190–240**	**40–220**	**140–210**	**160–230**
2.5								100–150	**100–220**	**60–230**	**110–190**	**150–230**
2.6	210–250							60–80	**100–220**	**40–170**	**80–160**	**120–170**
2.7	210–250							60–80	**40–100**	**40–160**	**80–140**	**120–160**
3.1	340–480			**260–310**	**220–260**	220–280	200–260			140–240	140–180	
3.2	260–360			**260–330**	**230–280**	200–270	190–250			100–190	110–170	
3.3	360–520	280–430	220–300	**330–450**	**320–410**	180–250	170–240			130–260	130–180	
3.4	300–400	250–380	180–250	**350–460**	**340–420**	180–260	140–190			100–250	160–240	
3.5	330–500	250–400	250–350	**380–460**	**360– 420**	260–320	240–290			160–240	160–230	
3.6	180–320	180–320	160–250	**270–370**	**250–330**	200– 320	170–290			130–200	130–190	
3.7	330–500	250–400	250–350	**350–430**	**320– 390**	240–320	240–290			150–240	150–220	
3.8	180–320	180–320	160–250	**260–350**	**240–310**	210–320	170–290			140–210	140–180	
4.1										300–3200	100–600	
4.2										200–2800	100–600	
4.3										400–2000	100–400	
4.4										40–2000	100–400	
4.5										200–1200	100–400	
4.6										250–1000	100–400	
4.7										200–1000	100–400	
4.8										200–1000	100–400	
4.9										200–1000	100–400	
4.10										200–1000	100–400	
4.11										150–800		
4.12										150–500		
4.13										100–250		
4.14										80–200		
4.15										80–220		
4.16												
4.17												
4.18										80–120		
4.19										100–140		
5.1								20–40		**30–140**	**15–30**	**20–40**
5.2								20–40		**30–110**	**15–40**	**20–40**
5.3								8–25		**30–110**	**20–35**	**15–35**
5.4								8–25		**30–110**	**13–30**	**15–35**
5.5								4–15		**30–110**	**15–35**	**8–25**
5.6								4–15		**30–110**	**15–35**	**4–15**
5.7								4–15		**30–110**	**60–100**	**4–15**
5.8								4–12		**30–110**	**20–40**	**4–15**
5.9								80–130		**30–140**	**80–140**	**80–130**
5.10								15–35		30–140	**25–45**	**15–35**
5.11								15–35		30–120	**25–45**	**15–35**
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

9

Cutting data values for medium machining (M)

Chip breaker:	-M30	-M36	-M50	-M60	-M34	-M40	-42	-M42	-M52	-M70 // -M55	-SM	-SMQ	-M81
Chip breaker:	(-NM23)	(-XU)	(-NM15)	(-NM26)	(-M34)	(-M40)	(-42)	(-M42)	(-M52)	(-NM19) // (-PF26)	(-ZM)	(-SMQ)	(-M81)
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN					DRAGONSKIN	DRAGONSKIN	
	CTCK110 (DCX3110)	CTCK120 (HCF3120)	CTCP115 (HCX1115)	CTCP125 (HCX1125)	CTCP135 (HCR1135)	CTPM125 (HCN2125)	CTP2120 (CCN2120)	CTC2135 (CWN2135)	CWN2120 (CWN2120)		CTP5110 (HCN5110)	CTP5115 (HCN5115)	
Index	v_c in m/min												
1.1	**260–330**	**220–270**	**250–340**	**200–260**	**170–210**	120-250		170-210					
1.2	**260–340**	**220–300**	**270–350**	**230–280**	**180–230**	120-220		180-230					
1.3	**230–320**	**190–260**	**220–350**	**240–290**	**160–200**	120-250		150-220					
1.4	**240–310**	**200–250**	**240–310**	**200–250**	**170–210**	130-200		170-210					
1.5	**230–310**	**190–250**	**230–300**	**210–250**	**150–200**	100-170		150-200					
1.6	**220–300**	**180–260**	**210–270**	**190–240**	**160–220**	100-170		150-210					
1.7	**190–270**	**150–210**	**240–300**	**200–270**	**160–200**	50- 160		150-200					
1.8	**190–250**	**150–200**	**190–270**	**180–230**	**140–180**	50- 160		130-170					
1.9	**210–290**	**170–240**	**190–280**	**160–220**	**160–190**	60- 160		160-190					
1.10	**210–270**	**170–220**	**200–260**	**180–230**	**140–190**	100-180		130-170					
1.11	**210–280**	**170–230**	**180–260**	**170–240**	**130–170**	80-180		130-170					
1.12	**230–290**	**190–240**	**200–280**	**190–260**	**150–200**	70-170		150-190					
1.13	**190–260**	**150–210**	**180–250**	**170–230**	**130–180**	60-170		120-180					
1.14	**210–270**	**170–220**	**170–230**	**170–210**	**120–160**	70-160		120-170					
1.15	**180–270**	**150–220**	**150–240**	**130–220**	**110–150**	60-120		100-150					
1.16	**180–260**	**150–210**	**130–220**	**130–220**	**110–150**	60-120		100-150					
2.1	150-270		200-280	200-280	150-210	**120–280**	**180–240**	**150–230**	**130–200**		180-260	180-260	
2.2	150-260		200-280	200-280	150-200	**120–280**	**180–230**	**170–250**	**120–220**		170-240	170-240	
2.3	140-250		190-260	190-260	120-200	**120–260**	**170–220**	**140–220**	**100–160**		170-220	170-220	
2.4	160-260		190 -240	190-240	110-190	**120–240**	**130–210**	**140–210**	**80–180**		130-220	130-220	
2.5					90-150	**100–220**	**100–180**	**120–210**	**90–140**		100-170	100-170	
2.6					60-80	**100–220**	**70–140**	**100–140**	**80–150**		80-150	80-150	
2.7					60-80	**40–100**	**70–110**	**100–140**	**80–120**		80-150	80-150	
3.1	**220–280**	**170–240**	140-240	120-210			120-170						
3.2	**210–270**	**170–230**	160-250	160-200			100-150						
3.3	**300–350**	**260–310**	150-220	150-200			120-170						
3.4	**270–330**	**230–320**	140-200	130-190			150-240						
3.5	**290–370**	**250–330**	200-260	160-230			150-220						
3.6	**250–310**	**210–270**	180-240	150-210			110-170						
3.7	**290–370**	**250–330**	180-280	160-230			140-220						
3.8	**250–370**	**210–330**	160-260	150-210			120-170						
4.1							100-600		400-2000				
4.2							100-600		400-2000				
4.3							100-400		400-2000				
4.4							100-400		200-1200				
4.5							100-400		200-1000				
4.6							100-400		250-1000				
4.7							100-400		250-1000				
4.8							100-400		250-1000				
4.9							100-400		250-1000				
4.10							100-400		250-1000				
4.11									150-800				
4.12									150-800				
4.13													
4.14													
4.15													
4.16													
4.17													
4.18													
4.19													
5.1					20-40		**15–30**	**20–40**			**30–120**		
5.2					20-40		**15–40**	**20–40**				**30–90**	
5.3					8-25		**20–35**	**15–35**				**30–90**	
5.4					8-25		**13–30**	**15–35**				**30–90**	
5.5					4-15		**15–35**	**8–25**				**30–90**	
5.6					4-15		**15–35**	**4–15**				**30–90**	
5.7					4-15		**60–100**	**4–15**				**30–90**	
5.8					4-12		**20–40**	**4–15**			**30–120**		
5.9					80-130	80-130	**80–140**	**80–130**			**30–120**		
5.10					15-35	25-45	**25–45**	**15–35**			**30–120**		
5.11					15-35		**25–45**	**15–35**			**30–120**		
6.1													
6.2													
6.3													
6.4													
6.5													

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for rough machining (R)

Chip breaker: .NMA -R28 -R58 -R88
Chip breaker: (.NMA) (-NR14) (-NR17) (-NR19)

	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	CTCK110 (DCX3110)	CTCK120 (HCF3120)	CTCP115 (HCX1115)	CTCP125 (HCX1125)	CTCP135 (HCR1135)
Index	v_c in m/min				
1.1			**220–320**	**180–240**	**160–200**
1.2			**270–350**	**230–280**	**170–220**
1.3			**220–350**	**240–290**	**150–190**
1.4			**240–310**	**180–250**	**160–200**
1.5			**230–300**	**200–240**	**140–190**
1.6			**210–270**	**190–240**	**150–210**
1.7			**240–300**	**180–260**	**150–190**
1.8			**190–270**	**150–210**	**130–170**
1.9			**190–280**	**140–200**	**150–180**
1.10			**200–260**	**170–220**	**130–180**
1.11			**180–260**	**160–220**	**120–160**
1.12			**200–280**	**170–240**	**140–190**
1.13			**180–250**	**160–230**	**120–170**
1.14			**170–230**	**150–190**	**110–150**
1.15			**150–240**	**150–210**	**100–140**
1.16			**130–220**	**150–190**	**100–140**
2.1			200–280	200–280	140–200
2.2			200–280	200–280	140–190
2.3			190–260	190–260	110–190
2.4			190 –240	190–240	100–180
2.5					80–150
2.6					55–75
2.7					55–75
3.1	**220–280**	**170–240**	140–220	130–180	
3.2	**210–270**	**170–230**	160–230	120–170	
3.3	**300–350**	**260–310**	150–200	130–180	
3.4	**270–330**	**230–320**	140–180	100–160	
3.5	**290–370**	**250–330**	200–240	150–200	
3.6	**250–310**	**210–270**	180–220	130–180	
3.7	**290–370**	**250–330**	180–260	150–200	
3.8	**250–370**	**210–330**	160–240	130–180	
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
4.10					
4.11					
4.12					
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					20–40
5.2					20–40
5.3					8–25
5.4					8–25
5.5					4–15
5.6					4–15
5.7					4–15
5.8					4–12
5.9					80–130
5.10					15–35
5.11					15–35
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for aluminum-chip breakers

Chip breaker:	-23P	-25P	-25Q	-27	-29
Chip breaker:	(-23P)	(-25P)	(-25Q)	(-AL)	(-29)

	H10T (CWK15)	H210T (CWK20)	H216T (CWK26)	AMZ (AMZ)	CWN15 (CWN15)
Index	v_c in m/min				
1.1				90–140	
1.2				110–160	
1.3				90–130	
1.4				80–120	
1.5				80–120	
1.6				90–110	
1.7				90–110	
1.8				70–90	
1.9				90–110	
1.10				70–90	
1.11				70–90	
1.12				70–110	
1.13				150–200	
1.14					
1.15				70–110	
1.16				70–110	
2.1				100–150	80–140
2.2					80–140
2.3					70–120
2.4					40–60
2.5					60–100
2.6				90–140	40–60
2.7					40–60
3.1	120–160	140–200	120–160	180–220	
3.2	90–140	100–160	90–140	140–180	
3.3	130–170	160–200	130–170	160–220	
3.4	90–130	110–150	90–130	120–180	
3.5	140–200	160–220	140–200	180–240	
3.6	120–160	140–180	120–160	160–200	
3.7	140–200	160–220	140–200	180–240	
3.8	120–160	140–180	120–160	160–200	
4.1	**300–2500**	**300–3200**	**300–2500**	**300–3200**	**300–3200**
4.2	**200–2500**	**400–1500**	**200–2000**	**200–2800**	**200–2800**
4.3	**400–2000**	**300–1000**	**400–1500**	**400–2000**	**400–2000**
4.4	**400–1800**	**200–500**	**400–1500**	**40–2000**	**40–2000**
4.5	**200–1000**	**200–500**	**200–800**	**200–1200**	**200–1200**
4.6	**150–300**	**150–400**	**150–300**	**250–1000**	**250–1000**
4.7	**250–600**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.8	**150–400**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.9	**150–400**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.10	**150–400**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.11	**150–300**	**200–800**	**200–600**	**150–800**	**150–800**
4.12	**130–350**	**150–400**	**150–400**	**150–500**	**150–500**
4.13	**100–200**	**80–320**	**100–200**	**100–250**	**100–250**
4.14	**80–180**	**80–320**	**80–180**	**80–200**	**80–200**
4.15	**60–150**	**80–200**	**60–150**	**80–220**	**80–220**
4.16					
4.17					
4.18	**60–140**				
4.19		**100–140**	**100–140**		
5.1		25–40	30–45		
5.2		25–40	20–35		
5.3		25–40	20–35		
5.4		20–30	15–25		
5.5		25–40	15–25		
5.6		20–30	15–25		
5.7		20–30	15–25		
5.8		15–25	15–25		
5.9	60–120	80–140	60–120		
5.10	30–80	40–100	30–80		
5.11	30–80	40–100	30–80		
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for machining non ferrous metals with carbide inserts

	Material group	Material examples			Machinability of aluminium alloys *	Comments	Cutting speed v_c in m/min
N	Pure aluminium	non hardenable	Al 99,5	W7	5	▲ Snarl chips ▲ Possibly bad surface ▲ Excessive built-up edge ▲ Long tool life ▲ Use coolant emulsion	300–3200
			Al 99,5	F13	4		
			Al 99	W8	5		
			Al 99	F14	4		
	Aluminium wrought alloys	non hardenable	Al Mn	W10	5	▲ Snarl, continuous or fragmented chip ▲ Large feed rates necessary for good swarf control ▲ Built-up edge ▲ Long tool life ▲ Emulsion coolant is advantageous	300–2500
			Al Mn	F16	4		
			Al Mg 1	W10	5		
			Al Mg 1	F19	4		
			Al Mg 3	W18	4		
			Al Mg 3	F25	3		
			Al Mg 5	W25	4		
			AL Mg 5	F28	2		
			Al Mg 4,5 Mn	W27	4		
			Al Mg 4,5 Mn	G35	3		
		hardenable	Al Mg Si 0,5	W	4	▲ Good swarf control with higher feed rates	200–2000
			Al Mg Si 0,5	F13-25	3		
			Al Mg Si 1	W	4		
			Al Mg Si 1	F21-30	3		
			Al Mg Si Pb	F20-28	2	▲ Very good swarf control ▲ No built up edge ▲ Very good surface quality	
			Al Cu Si Pb	F28-37	1		
			Al Cu Mg Pb	F34-37	1		
			Al Cu Mg 1	W	3	▲ Good swarf control ▲ Good surface quality ▲ Little built-up edge	
			Al Cu Mg 1	F33-40	2		
			Al Cu Mg 2	W	3		
			Al Cu Mg 2	F40-47	2		
			Al Cu Si Mn	W	3		
			Al Cu Si Mn	F43-46	2		
			Al Zn Mg Cu 1,5	F50-52	2		
			Al Sn 6 Cu		1		
	Cast Aluminium Alloys	non hardenable	G-Al Si 12		3	▲ Good swarf control ▲ Built-up edge ▲ Higher Si content results in lower tool life	Si content < 12 % 400–1500
			G-Al Si 10 Mg		3		
			G-Al Si 5 Mg		2		Si content ~ 12.5 % 300–1000
			G-Al Si 7 Mg (9 Mg)		2		
			G-Al Si Cu 3		2	▲ High wear of the carbide	Si content > 13 % 200–500
			G-Al Si 6 Cu 4		2		
			G-Al Mg 3 (Mg 5)		2	▲ Good swarf control ▲ Good surface quality ▲ Long tool life	200–1500
			G-Al Mg 9		2		
			G-Al Mg 10		2		
			G-Al Mg 3 Si (5 Si)		2		
			G-Al Cu 4 Ti (Mg)		2		
			G-Al Si 12 Cu Mg Ni		2		
	Copper wrought alloys		Cu Ag				300–1200
			Cu As				
			Cu Cd				
			Cu Cd Sn				
			Cu Mg				
			Cu Mn				
		brass	Cu Zn Al				300–1000
		bronze	Cu Sn				300–800
			Cu Sn Zn				
			Cu Ni				
			Cu Ni Fe				
			Cu Al				
	Non metal materials	Duroplastics					80–320
		Fibre-reinforced plastics					
		hard rubber					

* 1 = good machinability, 5 = bad machinability

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

9

Cutting data standard values for negative inserts

	Designation	-NF12 (Cermet)						-F50 (-NF15)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CN.. 090304							0,06	**0,15**	0,25	0,2	**0,5**	1,5
	CN.. 090308							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	CN.. 120404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	CN.. 120408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	CN.. 120412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	CN.. 120416												
	CN.. 160608												
	CN.. 160612												
	CN.. 160616												
	CN.. 160624												
	CN.. 190608												
	CN.. 190612												
	CN.. 190616												
	CN.. 190624												
	CN.. 250924												
	DN.. 110402							0,04	**0,10**	0,20	0,1	**0,4**	2,3
	DN.. 110404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	DN.. 110408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	DN.. 110412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	DN.. 150404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	DN.. 150408							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	DN.. 150412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	DN.. 150416												
	DN.. 150604	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	DN.. 150608	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	DN.. 150612	0,10	**0,20**	0,30	0,5	**0,7**	1,5	0,14	**0,25**	0,35	0,6	**1,4**	2,6
	DN.. 150616												
	SN.. 090308							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	SN.. 120404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	SN.. 120408							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	SN.. 120412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	SN.. 120416												
	SN.. 150608												
	SN.. 150612												
	SN.. 150616												
	SN.. 190612												
	SN.. 190616												
	SN.. 190624												
	SN.. 250724												
	SN.. 250924												
	TN.. 110304							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	TN.. 110308							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	TN.. 160404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	TN.. 160408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	TN.. 160412	0,10	**0,20**	0,30	0,5	**0,7**	1,5	0,14	**0,25**	0,35	0,6	**1,4**	2,6
	TN.. 220404												
	TN.. 220408												
	TN.. 220412												
	TN.. 220416												
	VN.. 160404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	VN.. 160408							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	VN.. 160412												
	WN.. 060404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	WN.. 060408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	WN.. 060412												
	WN.. 080404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	WN.. 080408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	WN.. 080412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	WN.. 080416												

sharp ◄——————————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-TFQ (-TFQ)						-XU (-XU)						-M50 (-NM15)					
	f			a_p			f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm			mm/rev.			mm		
CN.. 090304																		
CN.. 090308																		
CN.. 120404	0,10	**0,15**	0,35	0,4	**1,0**	3,0	0,08	**0,15**	0,25	0,3	**1,5**	2,5	0,10	**0,20**	0,30	0,4	**2,0**	5,0
CN.. 120408	0,10	**0,25**	0,50	0,5	**1,5**	4,0	0,13	**0,25**	0,35	0,6	**2,0**	3,0	0,15	**0,25**	0,40	0,6	**2,0**	5,0
CN.. 120412	0,15	**0,30**	0,70	0,8	**2,0**	5,0	0,15	**0,30**	0,45	0,9	**2,0**	3,5	0,20	**0,30**	0,50	1,0	**2,0**	5,0
CN.. 120416													0,25	**0,40**	0,60	1,4	**2,0**	5,0
CN.. 160608													0,15	**0,25**	0,40	0,6	**3,0**	8,0
CN.. 160612													0,20	**0,30**	0,50	1,0	**3,0**	8,0
CN.. 160616													0,25	**0,40**	0,60	1,4	**3,0**	8,0
CN.. 160624																		
CN.. 190608																		
CN.. 190612																		
CN.. 190616																		
CN.. 190624																		
CN.. 250924																		
DN.. 110402																		
DN.. 110404													0,10	**0,20**	0,30	0,4	**1,5**	4,0
DN.. 110408													0,15	**0,25**	0,40	0,6	**1,5**	4,0
DN.. 110412													0,20	**0,30**	0,50	1,0	**1,5**	4,0
DN.. 150404													0,10	**0,20**	0,30	0,4	**2,0**	5,0
DN.. 150408													0,15	**0,25**	0,40	0,6	**2,0**	5,0
DN.. 150412													0,20	**0,30**	0,50	1,0	**2,0**	5,0
DN.. 150416													0,25	**0,40**	0,60	1,4	**2,0**	5,0
DN.. 150604	0,10	**0,15**	0,30	0,4	**1,0**	3,0	0,08	**0,15**	0,25	0,3	**1,5**	2,5	0,10	**0,20**	0,30	0,4	**2,0**	5,0
DN.. 150608	0,10	**0,25**	0,40	0,5	**1,5**	4,0	0,13	**0,25**	0,35	0,6	**2,0**	3,0	0,15	**0,25**	0,40	0,6	**2,0**	5,0
DN.. 150612							0,15	**0,25**	0,40	0,9	**2,0**	3,5	0,20	**0,30**	0,50	1,0	**2,0**	5,0
DN.. 150616													0,25	**0,40**	0,60	1,4	**2,0**	5,0
SN.. 090308																		
SN.. 120404																		
SN.. 120408													0,15	**0,25**	0,40	0,6	**2,0**	5,0
SN.. 120412													0,20	**0,30**	0,50	1,0	**2,0**	5,0
SN.. 120416													0,25	**0,40**	0,60	1,4	**2,0**	5,0
SN.. 150608													0,15	**0,25**	0,40	0,6	**3,0**	8,0
SN.. 150612													0,20	**0,30**	0,50	1,0	**3,0**	8,0
SN.. 150616													0,25	**0,40**	0,60	1,4	**3,0**	8,0
SN.. 190612																		
SN.. 190616																		
SN.. 190624																		
SN.. 250724																		
SN.. 250924																		
TN.. 110304																		
TN.. 110308																		
TN.. 160404													0,10	**0,20**	0,30	0,4	**2,0**	5,0
TN.. 160408													0,15	**0,25**	0,40	0,6	**2,0**	5,0
TN.. 160412													0,20	**0,30**	0,50	1,0	**2,0**	5,0
TN.. 220404																		
TN.. 220408													0,15	**0,25**	0,40	0,6	**3,0**	8,0
TN.. 220412													0,20	**0,30**	0,50	1,0	**3,0**	8,0
TN.. 220416																		
VN.. 160404							0,08	**0,15**	0,20	0,3	**1,0**	1,8	0,10	**0,20**	0,30	0,4	**1,0**	4,0
VN.. 160408							0,13	**0,20**	0,30	0,6	**1,5**	2,5	0,15	**0,25**	0,40	0,6	**1,0**	4,0
VN.. 160412													0,20	**0,30**	0,50	1,0	**1,0**	4,0
WN.. 060404	0,10	**0,18**	0,35	0,4	**0,8**	3,0							0,10	**0,20**	0,30	0,4	**1,0**	3,0
WN.. 060408	0,10	**0,20**	0,50	0,5	**1,5**	3,0							0,15	**0,25**	0,40	0,6	**1,0**	3,0
WN.. 060412													0,20	**0,30**	0,50	1,0	**1,0**	3,0
WN.. 080404							0,08	**0,15**	0,25	0,3	**1,5**	2,5	0,10	**0,20**	0,30	0,4	**1,5**	4,0
WN.. 080408	0,10	**0,25**	0,50	0,5	**1,5**	4,0	0,13	**0,22**	0,35	0,6	**2,0**	3,0	0,15	**0,25**	0,40	0,6	**1,5**	4,0
WN.. 080412	0,15	**0,30**	0,70	0,8	**2,0**	5,0	0,15	**0,25**	0,45	0,9	**2,0**	3,5	0,20	**0,30**	0,50	1,0	**1,5**	4,0
WN.. 080416													0,25	**0,40**	0,60	1,4	**1,5**	4,0

sharp ◄——————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

9

Cutting data standard values for negative inserts

	Designation	-TMQ (-TMQ)						-M70 (-NM19)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CN.. 090304												
	CN.. 090308												
	CN.. 120404												
	CN.. 120408	0,20	**0,40**	0,65	0,8	**3,0**	5,0	0,20	**0,30**	0,45	0,8	**3,0**	6,0
	CN.. 120412	0,25	**0,50**	0,85	1,0	**3,0**	6,0	0,25	**0,40**	0,60	1,2	**3,0**	6,0
	CN.. 120416							0,30	**0,45**	0,70	1,6	**3,0**	6,0
	CN.. 160608							0,20	**0,30**	0,45	0,8	**4,0**	8,0
	CN.. 160612							0,25	**0,40**	0,60	1,2	**4,0**	8,0
	CN.. 160616							0,30	**0,45**	0,70	1,6	**4,0**	8,0
	CN.. 160624							0,40	**0,70**	1,20	2,4	**4,0**	8,0
	CN.. 190608							0,20	**0,30**	0,45	0,8	**4,5**	9,0
	CN.. 190612							0,25	**0,40**	0,60	1,2	**4,5**	9,0
	CN.. 190616							0,30	**0,45**	0,70	1,6	**4,5**	9,0
	CN.. 190624							0,40	**0,70**	1,20	2,4	**4,5**	9,0
	CN.. 250924							0,40	**0,70**	1,20	2,4	**6,0**	13,0
	DN.. 110402												
	DN.. 110404												
	DN.. 110408							0,20	**0,25**	0,45	0,8	**2,0**	5,0
	DN.. 110412							0,25	**0,35**	0,60	1,2	**2,0**	5,0
	DN.. 150404												
	DN.. 150408							0,20	**0,25**	0,45	0,8	**2,5**	6,0
	DN.. 150412							0,25	**0,35**	0,60	1,2	**2,5**	6,0
	DN.. 150416							0,30	**0,40**	0,70	1,6	**2,5**	6,0
	DN.. 150604												
	DN.. 150608	0,15	**0,30**	0,50	0,8	**2,5**	5,0	0,20	**0,25**	0,45	0,8	**2,5**	6,0
	DN.. 150612	0,20	**0,40**	0,60	1,0	**3,0**	5,0	0,25	**0,35**	0,60	1,2	**2,5**	6,0
	DN.. 150616							0,30	**0,40**	0,70	1,6	**2,5**	6,0
	SN.. 090308												
	SN.. 120404												
	SN.. 120408							0,20	**0,30**	0,50	0,8	**3,0**	6,0
	SN.. 120412							0,25	**0,40**	0,65	1,2	**3,0**	6,0
	SN.. 120416							0,30	**0,45**	0,70	1,6	**3,0**	6,0
	SN.. 150608												
	SN.. 150612							0,25	**0,40**	0,65	1,2	**4,0**	8,0
	SN.. 150616							0,30	**0,45**	0,75	1,6	**4,0**	8,0
	SN.. 190612							0,25	**0,40**	0,65	1,2	**4,5**	9,0
	SN.. 190616							0,30	**0,45**	0,75	1,6	**4,5**	9,0
	SN.. 190624							0,40	**0,70**	1,20	2,4	**4,5**	9,0
	SN.. 250724												
	SN.. 250924							0,40	**0,70**	1,20	2,4	**6,0**	13,0
	TN.. 110304												
	TN.. 110308												
	TN.. 160404												
	TN.. 160408							0,20	**0,25**	0,45	0,8	**2,5**	6,0
	TN.. 160412							0,25	**0,35**	0,60	1,2	**2,5**	6,0
	TN.. 220404							0,15	**0,20**	0,30	0,4	**3,0**	7,0
	TN.. 220408							0,20	**0,25**	0,45	0,8	**3,0**	7,0
	TN.. 220412							0,25	**0,35**	0,60	1,2	**3,0**	7,0
	TN.. 220416							0,30	**0,40**	0,70	1,6	**3,0**	7,0
	VN.. 160404												
	VN.. 160408												
	VN.. 160412												
	WN.. 060404												
	WN.. 060408							0,20	**0,30**	0,45	0,8	**2,0**	4,0
	WN.. 060412							0,25	**0,40**	0,60	1,2	**2,0**	4,0
	WN.. 080404												
	WN.. 080408	0,20	**0,30**	0,65	0,8	**3,0**	5,0	0,20	**0,30**	0,45	0,8	**2,5**	5,0
	WN.. 080412	0,25	**0,40**	0,85	1,0	**3,0**	6,0	0,25	**0,40**	0,60	1,2	**2,5**	5,0
	WN.. 080416							0,30	**0,45**	0,70	1,6	**2,5**	5,0

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-R28 (-NR14)						-R58 (-NR17)						-R88 (-NR19)					
	f			a_p			f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm			mm/rev.			mm		
CN.. 090304																		
CN.. 090308																		
CN.. 120404																		
CN.. 120408	0,25	**0,35**	0,55	0,8	**3,0**	7,0	0,25	**0,45**	0,70	1,0	**3,0**	7,0						
CN.. 120412	0,30	**0,45**	0,70	1,0	**3,0**	7,0	0,30	**0,55**	0,85	1,5	**3,0**	7,0						
CN.. 120416	0,30	**0,60**	0,90	1,5	**3,0**	7,0	0,35	**0,65**	1,00	2,0	**3,0**	7,0						
CN.. 160608																		
CN.. 160612	0,30	**0,45**	0,70	1,0	**4,0**	9,0	0,30	**0,55**	0,85	1,5	**4,0**	9,0						
CN.. 160616	0,35	**0,60**	0,90	1,5	**4,0**	9,0	0,35	**0,65**	1,00	2,0	**4,0**	9,0						
CN.. 160624							0,40	**0,75**	1,20	2,5	**4,0**	9,0	0,40	**0,70**	1,20	2,0	**5,0**	9,0
CN.. 190608																		
CN.. 190612	0,30	**0,45**	0,70	1,0	**5,5**	12,0	0,35	**0,55**	0,85	1,5	**5,5**	12,0						
CN.. 190616	0,35	**0,60**	0,90	1,5	**5,5**	12,0	0,40	**0,65**	1,00	2,0	**5,5**	12,0	0,40	**0,70**	1,00	2,0	**5,0**	12,0
CN.. 190624	0,35	**0,65**	1,00	2,0	**5,5**	12,0	0,40	**0,75**	1,20	2,5	**5,5**	12,0	0,40	**0,70**	1,20	2,0	**5,0**	12,0
CN.. 250924							0,45	**0,80**	1,30	2,5	**8,0**	16,0	0,60	**1,00**	1,50	3,5	**10,0**	18,0
DN.. 110402																		
DN.. 110404																		
DN.. 110408																		
DN.. 110412																		
DN.. 150404																		
DN.. 150408																		
DN.. 150412																		
DN.. 150416																		
DN.. 150604																		
DN.. 150608																		
DN.. 150612	0,25	**0,45**	0,70	1,0	**2,5**	6,0	0,30	**0,50**	0,80	1,5	**2,5**	6,0						
DN.. 150616	0,30	**0,60**	0,85	1,5	**2,5**	6,0	0,35	**0,60**	0,90	2,0	**2,5**	6,0						
SN.. 090308																		
SN.. 120404																		
SN.. 120408							0,25	**0,45**	0,70	1,0	**3,0**	7,0						
SN.. 120412							0,30	**0,55**	0,85	1,5	**3,0**	7,0						
SN.. 120416																		
SN.. 150608																		
SN.. 150612	0,30	**0,35**	0,70	1,0	**4,0**	9,0	0,30	**0,55**	0,85	1,5	**4,0**	9,0						
SN.. 150616	0,35	**0,60**	0,90	1,5	**4,0**	9,0	0,35	**0,65**	1,00	2,0	**4,0**	9,0						
SN.. 190612							0,35	**0,55**	0,85	1,5	**5,5**	12,0						
SN.. 190616	0,35	**0,60**	0,90	1,5	**5,5**	12,0	0,40	**0,65**	1,00	2,0	**5,5**	12,0	0,40	**0,70**	1,00	2,0	**5,0**	12,0
SN.. 190624							0,40	**0,75**	1,20	2,0	**5,5**	12,0	0,40	**0,70**	1,20	2,0	**5,0**	12,0
SN.. 250724	0,35	**0,65**	1,00	2,0	**7,0**	16,0	0,45	**0,80**	1,30	2,5	**8,0**	16,0	0,60	**1,00**	1,50	3,5	**10,0**	18,0
SN.. 250924	0,35	**0,65**	1,00	2,0	**7,0**	16,0	0,45	**0,80**	1,30	2,5	**8,0**	16,0	0,60	**1,00**	1,50	3,5	**10,0**	18,0
TN.. 110304																		
TN.. 110308																		
TN.. 160404																		
TN.. 160408																		
TN.. 160412																		
TN.. 220404																		
TN.. 220408																		
TN.. 220412							0,30	**0,50**	0,80	1,5	**3,0**	7,0						
TN.. 220416	0,30	**0,55**	0,85	1,5	**3,0**	7,0												
VN.. 160404																		
VN.. 160408																		
VN.. 160412																		
WN.. 060404																		
WN.. 060408																		
WN.. 060412																		
WN.. 080404																		
WN.. 080408																		
WN.. 080412																		
WN.. 080416																		

sharp ◄——————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

Cutting data standard values for negative inserts

	Designation	-F30 (-NF23)						-M30 (-NM23)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CN.. 090304												
	CN.. 090308												
	CN.. 120404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	CN.. 120408	0,10	**0,22**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	CN.. 120412							0,20	**0,30**	0,50	1,2	**2,5**	5,0
	CN.. 120416							0,25	**0,35**	0,55	1,6	**2,5**	5,0
	CN.. 160608												
	CN.. 160612												
	CN.. 160616												
	CN.. 160624												
	CN.. 190608												
	CN.. 190612												
	CN.. 190616												
	CN.. 190624												
	CN.. 250924												
	DN.. 110402												
	DN.. 110404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	DN.. 110408	0,10	**0,20**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	DN.. 110412							0,20	**0,30**	0,50	1,2	**2,0**	4,5
	DN.. 150404												
	DN.. 150408												
	DN.. 150412												
	DN.. 150416												
	DN.. 150604	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	DN.. 150608	0,10	**0,20**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	5,5
	DN.. 150612							0,20	**0,30**	0,50	1,2	**2,0**	5,5
	DN.. 150616												
	SN.. 090308												
	SN.. 120404	0,10	**0,15**	0,30	0,4	**1,0**	2,0						
	SN.. 120408	0,15	**0,20**	0,40	0,8	**1,5**	2,5	0,20	**0,25**	0,45	1,0	**2,0**	4,5
	SN.. 120412	0,15	**0,20**	0,40	1,2	**1,8**	2,5	0,25	**0,30**	0,50	1,2	**2,0**	5,0
	SN.. 120416												
	SN.. 150608												
	SN.. 150612												
	SN.. 150616												
	SN.. 190612												
	SN.. 190616												
	SN.. 190624												
	SN.. 250724												
	SN.. 250924												
	TN.. 110304												
	TN.. 110308												
	TN.. 160404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	TN.. 160408	0,10	**0,15**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	TN.. 160412							0,20	**0,30**	0,50	1,2	**2,0**	4,5
	TN.. 220404												
	TN.. 220408												
	TN.. 220412												
	TN.. 220416												
	VN.. 160404	0,08	**0,10**	0,20	0,4	**1,0**	2,0						
	VN.. 160408	0,10	**0,15**	0,30	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**1,5**	4,0
	VN.. 160412												
	WN.. 060404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	WN.. 060408	0,10	**0,20**	0,30	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**1,5**	3,5
	WN.. 060412							0,20	**0,30**	0,45	1,2	**1,5**	4,0
	WN.. 080404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	WN.. 080408	0,10	**0,20**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	WN.. 080412							0,20	**0,30**	0,50	1,2	**2,0**	5,0
	WN.. 080416												

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-M60 (-NM26)						-M34 (-M34)					
	f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm		
CN.. 090304												
CN.. 090308												
CN.. 120404							0,08	**0,12**	0,18	1,0	**1,5**	3,0
CN.. 120408	0,25	**0,30**	0,50	1,5	**2,5**	6,0	0,10	**0,15**	0,35	1,0	**1,8**	3,5
CN.. 120412	0,30	**0,35**	0,55	2,0	**3,0**	6,0	0,13	**0,20**	0,40	1,5	**2,0**	4,0
CN.. 120416	0,30	**0,40**	0,60	2,0	**3,0**	6,0	0,15	**0,25**	0,45	2,0	**3,0**	4,5
CN.. 160608												
CN.. 160612	0,30	**0,35**	0,55	2,0	**3,0**	8,0						
CN.. 160616												
CN.. 160624												
CN.. 190608												
CN.. 190612												
CN.. 190616												
CN.. 190624												
CN.. 250924												
DN.. 110402												
DN.. 110404												
DN.. 110408												
DN.. 110412												
DN.. 150404							0,08	**0,12**	0,18	0,8	**1,2**	2,5
DN.. 150408							0,10	**0,15**	0,30	1,0	**1,8**	3,5
DN.. 150412							0,13	**0,20**	0,38	1,5	**2,0**	4,0
DN.. 150416												
DN.. 150604												
DN.. 150608	0,25	**0,30**	0,45	1,5	**2,5**	6,0	0,10	**0,15**	0,30	1,0	**1,8**	3,5
DN.. 150612	0,30	**0,40**	0,55	1,5	**2,5**	6,0	0,13	**0,20**	0,38	1,5	**2,0**	4,0
DN.. 150616												
SN.. 090308												
SN.. 120404												
SN.. 120408	0,30	**0,35**	0,50	1,5	**2,0**	6,0	0,15	**0,25**	0,40	1,0	**2,0**	4,0
SN.. 120412	0,30	**0,40**	0,55	2,0	**2,5**	6,0	0,15	**0,25**	0,45	1,5	**2,5**	4,5
SN.. 120416	0,30	**0,40**	0,60	2,0	**2,5**	6,0						
SN.. 150608												
SN.. 150612												
SN.. 150616												
SN.. 190612												
SN.. 190616												
SN.. 190624												
SN.. 250724												
SN.. 250924												
TN.. 110304												
TN.. 110308												
TN.. 160404												
TN.. 160408	0,25	**0,25**	0,45	1,5	**2,5**	5,0	0,10	**0,15**	0,35	1,0	**2,0**	4,0
TN.. 160412	0,30	**0,30**	0,55	2,0	**2,5**	5,5						
TN.. 220404							0,10	**0,15**	0,35	1,0	**2,0**	4,0
TN.. 220408							0,13	**0,20**	0,40	1,5	**2,5**	4,0
TN.. 220412												
TN.. 220416							0,15	**0,25**	0,45	2,0	**2,5**	4,5
VN.. 160404							0,07	**0,10**	0,18	0,8	**1,2**	2,0
VN.. 160408							0,10	**0,15**	0,20	1,0	**1,5**	2,5
VN.. 160412							0,13	**0,18**	0,25	1,5	**1,8**	3,0
WN.. 060404												
WN.. 060408	0,25	**0,30**	0,45	1,5	**2,0**	4,0						
WN.. 060412	0,30	**0,35**	0,50	2,0	**2,5**	4,5						
WN.. 080404												
WN.. 080408	0,25	**0,30**	0,50	1,5	**2,0**	5,0	0,10	**0,15**	0,35	1,0	**2,0**	4,0
WN.. 080412	0,30	**0,35**	0,55	2,0	**2,5**	5,5	0,13	**0,20**	0,40	1,5	**2,0**	4,0
WN.. 080416												

sharp ◄——————————————————————► stable

9

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

Cutting data values for positive inserts

	Designation	-CF05 (-PF14)						-SF (-ZF)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CC.. 060200							0,02	**0,035**	0,05	0,1	**0,4**	1,5
	CC.. 060201							0,02	**0,035**	0,05	0,2	**0,4**	1,5
	CC.. 060202	0,03	**0,08**	0,12	0,1	**0,3**	1,3	0,03	**0,1**	0,15	0,2	**0,4**	1,5
	CC.. 060204	0,05	**0,10**	0,12	0,1	**0,3**	1,3	0,05	**0,1**	0,2	0,2	**0,6**	1,5
	CC.. 060208							0,05	**0,125**	0,2	0,2	**1**	1,5
	CC.. 09T300							0,02	**0,035**	0,05	0,2	**0,75**	2
	CC.. 09T301							0,02	**0,035**	0,05	0,2	**0,75**	2
	CC.. 09T302	0,03	**0,08**	0,12	0,1	**0,3**	1,3	0,05	**0,075**	0,1	0,2	**0,75**	2
	CC.. 09T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,75**	2
	CC.. 09T308	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,05	**0,125**	0,25	0,4	**1**	2
	CC.. 09T312												
	CC.. 120402							0,05	**0,075**	0,1	0,2	**0,8**	2,5
	CC.. 120404							0,05	**0,12**	0,2	0,2	**1**	2,5
	CC.. 120408							0,08	**0,15**	0,25	0,4	**1**	2,5
	CC.. 120412							0,08	**0,15**	0,25	0,4	**1,5**	2,5
	DC.. 0702005												
	DC.. 070201												
	DC.. 0702015												
	DC.. 070202	0,03	**0,08**	0,12	0,1	**0,3**	1,3	0,03	**0,1**	0,15	0,1	**0,4**	1,5
	DC.. 070204	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,6**	1,5
	DC.. 070208												
	DC.. 11T3005												
	DC.. 11T301												
	DC.. 11T3015												
	DC.. 11T302	0,03	**0,08**	0,12	0,1	**0,3**	1,3						
	DC.. 11T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,7**	2
	DC.. 11T308	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,08	**0,15**	0,25	0,4	**1**	2
	DC.. 11T312												
	RC.. 0602M0												
	RC.. 0803M0												
	RC.. 1003M0												
	RC.. 1204M0												
	RC.. 1606M0												
	RC.. 2006M0												
	RC.. 2507M0												
	SC.. 09T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,7**	2
	SC.. 09T308	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,08	**0,15**	0,25	0,4	**1**	2
	SC.. 120408							0,08	**0,15**	0,25	0,4	**1**	2,5
	SC.. 120412												
	TC.. 090204												
	TC.. 110202	0,03	**0,08**	0,12	0,1	**0,3**	1,3						
	TC.. 110204	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,7**	2
	TC.. 110208	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,08	**0,15**	0,25	0,4	**1**	2
	TC.. 16T302												
	TC.. 16T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,8**	2,5
	TC.. 16T308							0,08	**0,15**	0,25	0,4	**1**	2,5
	TC.. 16T312												
	TC.. 220408												
	VC.. 1103005												
	VC.. 110301												
	VC.. 1103015												
	VC.. 110302	0,03	**0,06**	0,12	0,1	**0,3**	1,3	0,02	**0,08**	0,15	0,1	**0,4**	1,5
	VC.. 110304	0,05	**0,08**	0,22	0,2	**0,4**	1,3	0,05	**0,1**	0,2	0,2	**0,6**	1,5
	VC.. 110308							0,08	**0,12**	0,22	0,4	**1**	1,5
	VC.. 160402												
	VC.. 160404	0,05	**0,08**	0,22	0,2	**0,4**	1,3	0,05	**0,1**	0,2	0,2	**0,7**	2
	VC.. 160408	0,06	**0,10**	0,22	0,2	**0,4**	1,3	0,08	**0,12**	0,22	0,4	**1**	2
	VC.. 160412												
	VC.. 220530												
	WC.. 020102							0,02	**0,075**	0,1	0,1	**0,4**	1
	WC.. 020104							0,02	**0,1**	0,2	0,1	**0,6**	1,5

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-CF55 (-PF15)						-SMF (-SMF)						-SM (-ZM)					
	f			a_p			f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm			mm/rev.			mm		
CC.. 060200																		
CC.. 060201																		
CC.. 060202													0,04	**0,12**	0,2	0,2	**0,6**	2,5
CC.. 060204	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,7**	2	0,08	**0,17**	0,3	0,4	**0,8**	2,5
CC.. 060208							0,1	**0,17**	0,27	0,6	**1**	2	0,12	**0,2**	0,35	0,8	**1**	2,5
CC.. 09T300																		
CC.. 09T301																		
CC.. 09T302																		
CC.. 09T304	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,8**	2,5	0,08	**0,17**	0,3	0,4	**1**	3
CC.. 09T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
CC.. 09T312													0,15	**0,22**	0,4	1,2	**1,5**	3
CC.. 120402																		
CC.. 120404	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**1**	3	0,08	**0,17**	0,3	0,4	**1,2**	3,5
CC.. 120408							0,1	**0,17**	0,27	0,6	**1,2**	3	0,12	**0,2**	0,35	0,8	**1,5**	3,5
CC.. 120412													0,15	**0,22**	0,4	1,2	**2**	3,5
DC.. 0702005																		
DC.. 070201																		
DC.. 0702015																		
DC.. 070202	0,03	**0,10**	0,12	0,1	**0,4**	1,3							0,04	**0,12**	0,2	0,2	**0,6**	2,5
DC.. 070204	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,7**	2	0,08	**0,17**	0,3	0,4	**0,8**	2,5
DC.. 070208							0,1	**0,17**	0,27	0,6	**1**	2	0,12	**0,2**	0,3	0,8	**1**	2,5
DC.. 11T3005																		
DC.. 11T301																		
DC.. 11T3015																		
DC.. 11T302																		
DC.. 11T304	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,8**	2,5	0,8	**0,17**	0,3	0,4	**1**	3
DC.. 11T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1,2**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
DC.. 11T312													0,15	**0,22**	0,4	1,2	**1,7**	3
RC.. 0602M0													0,2	**0,3**	0,5	0,2	**0,5**	1,5
RC.. 0803M0													0,2	**0,3**	0,6	0,2	**0,6**	2
RC.. 1003M0													0,25	**0,4**	0,7	0,2	**0,7**	2,5
RC.. 1204M0													0,3	**0,5**	0,8	0,2	**0,8**	3
RC.. 1606M0							0,15	**0,3**	0,6	0,25	**2**	3,5	0,4	**0,6**	1	0,3	**1**	3,5
RC.. 2006M0													0,5	**0,8**	1,2	0,4	**1,2**	4
RC.. 2507M0													0,6	**0,9**	1,4	0,6	**2**	5
SC.. 09T304	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,8**	2,5	0,08	**0,17**	0,3	0,4	**1**	3
SC.. 09T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
SC.. 120408							0,1	**0,17**	0,27	0,6	**1,2**	3	0,12	**0,2**	0,35	0,8	**1,5**	3,5
SC.. 120412													0,15	**0,22**	0,4	1,2	**2**	3,5
TC.. 090204													0,08	**0,12**	0,2	0,4	**0,8**	2
TC.. 110202													0,08	**0,1**	0,2	0,4	**0,6**	3
TC.. 110204	0,05	**0,12**	0,22	0,2	**0,5**	1,3							0,12	**0,2**	0,35	0,8	**1,2**	3
TC.. 110208							0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
TC.. 16T302																		
TC.. 16T304							0,07	**0,15**	0,25	0,3	**1**	3	0,08	**0,17**	0,3	0,4	**1,2**	3,5
TC.. 16T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1,2**	3	0,12	**0,2**	0,35	0,8	**1,5**	3,5
TC.. 16T312													0,15	**0,22**	0,4	1,2	**1,7**	3,5
TC.. 220408													0,12	**0,2**	0,35	0,8	**2,5**	6
VC.. 1103005																		
VC.. 110301																		
VC.. 1103015																		
VC.. 110302							0,05	**0,1**	0,18	0,2	**0,5**	2						
VC.. 110304	0,05	**0,10**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,23	0,3	**0,7**	2						
VC.. 110308																		
VC.. 160402																		
VC.. 160404	0,05	**0,10**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,23	0,3	**0,8**	2,5	0,08	**0,17**	0,25	0,4	**1**	3
VC.. 160408	0,06	**0,12**	0,22	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,3	0,8	**1,2**	3
VC.. 160412													0,15	**0,22**	0,32	1,2	**1,5**	3
VC.. 220530																		
WC.. 020102																		
WC.. 020104																		

sharp ◄——————————————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

9

Cutting data values for positive inserts

	Designation	-SMQ (-SMQ)						-M25 (-PF23)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CC.. 060200												
	CC.. 060201												
	CC.. 060202												
	CC.. 060204							0,06	**0,13**	0,20	0,2	**1,1**	2,0
	CC.. 060208												
	CC.. 09T300												
	CC.. 09T301												
	CC.. 09T302												
	CC.. 09T304	0,10	**0,25**	0,4	0,4	**2**	4	0,06	**0,14**	0,22	0,2	**1,2**	2,2
	CC.. 09T308	0,15	**0,30**	0,5	0,8	**2**	4	0,10	**0,20**	0,30	0,4	**1,8**	3,2
	CC.. 09T312												
	CC.. 120402												
	CC.. 120404	0,10	**0,25**	0,4	0,4	**2**	4						
	CC.. 120408	0,15	**0,30**	0,5	0,8	**2**	4						
	CC.. 120412												
	DC.. 0702005												
	DC.. 070201												
	DC.. 0702015												
	DC.. 070202							0,04	**0,09**	0,13	0,1	**0,9**	1,6
	DC.. 070204	0,10	**0,18**	0,25	0,4	**1,5**	3	0,06	**0,12**	0,18	0,2	**1,1**	2,0
	DC.. 070208												
	DC.. 11T3005												
	DC.. 11T301												
	DC.. 11T3015												
	DC.. 11T302							0,04	**0,10**	0,16	0,1	**1,1**	2,0
	DC.. 11T304	0,10	**0,25**	0,4	0,4	**2**	4	0,06	**0,14**	0,22	0,2	**1,2**	2,2
	DC.. 11T308	0,15	**0,30**	0,5	0,8	**2**	4	0,10	**0,20**	0,30	0,4	**1,8**	3,2
	DC.. 11T312												
	RC.. 0602M0												
	RC.. 0803M0												
	RC.. 1003M0												
	RC.. 1204M0												
	RC.. 1606M0												
	RC.. 2006M0												
	RC.. 2507M0												
	SC.. 09T304												
	SC.. 09T308												
	SC.. 120408												
	SC.. 120412												
	TC.. 090204												
	TC.. 110202												
	TC.. 110204							0,06	**0,13**	0,20	0,2	**1,2**	2,2
	TC.. 110208												
	TC.. 16T302												
	TC.. 16T304							0,06	**0,14**	0,22	0,2	**1,6**	3,0
	TC.. 16T308							0,10	**0,20**	0,30	0,4	**1,9**	3,4
	TC.. 16T312												
	TC.. 220408												
	VC.. 1103005												
	VC.. 110301												
	VC.. 1103015												
	VC.. 110302												
	VC.. 110304												
	VC.. 110308												
	VC.. 160402												
	VC.. 160404							0,06	**0,13**	0,20	0,2	**1,2**	2,2
	VC.. 160408							0,10	**0,15**	0,25	0,4	**1,4**	3,0
	VC.. 160412												
	VC.. 220530												
	WC.. 020102												
	WC.. 020104												

sharp ◄——————————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-M55 (-PF26)						-F05					
	f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm		
CC.. 060200												
CC.. 060201												
CC.. 060202												
CC.. 060204	0,06	**0,13**	0,20	0,4	**1,5**	2,6						
CC.. 060208												
CC.. 09T300												
CC.. 09T301												
CC.. 09T302												
CC.. 09T304	0,08	**0,16**	0,24	0,4	**1,7**	3,0						
CC.. 09T308	0,12	**0,24**	0,35	0,8	**2,4**	4,0						
CC.. 09T312												
CC.. 120402												
CC.. 120404	0,08	**0,18**	0,28	0,4	**2,2**	4,0						
CC.. 120408	0,12	**0,26**	0,40	0,8	**2,8**	4,8						
CC.. 120412												
DC.. 0702005							0,02	**0,025**	0,04	0,1	**1**	2
DC.. 070201							0,02	**0,03**	0,05	0,1	**1**	2
DC.. 0702015							0,02	**0,04**	0,075	0,1	**1**	2
DC.. 070202							0,02	**0,05**	0,1	0,1	**1**	2
DC.. 070204	0,06	**0,14**	0,22	0,4	**1,3**	2,2						
DC.. 070208	0,08	**0,16**	0,24	0,8	**1,6**	2,4						
DC.. 11T3005							0,02	**0,025**	0,04	0,1	**1,25**	2,5
DC.. 11T301							0,02	**0,03**	0,05	0,1	**1,25**	2,5
DC.. 11T3015							0,02	**0,04**	0,075	0,1	**1,25**	2,5
DC.. 11T302							0,02	**0,075**	0,1	0,1	**1,25**	2,5
DC.. 11T304	0,08	**0,16**	0,24	0,4	**1,7**	3,0	0,02	**0,1**	0,25	0,1	**1,25**	2,5
DC.. 11T308	0,12	**0,24**	0,35	0,8	**2,4**	4,0						
DC.. 11T312												
RC.. 0602M0												
RC.. 0803M0												
RC.. 1003M0												
RC.. 1204M0												
RC.. 1606M0												
RC.. 2006M0												
RC.. 2507M0												
SC.. 09T304	0,12	**0,24**	0,35	0,8	**2,4**	4,0						
SC.. 09T308	0,12	**0,26**	0,40	0,8	**2,8**	4,8						
SC.. 120408												
SC.. 120412												
TC.. 090204	0,06	**0,12**	0,18	0,4	**1,3**	2,2						
TC.. 110202												
TC.. 110204	0,06	**0,14**	0,22	0,4	**1,4**	2,4						
TC.. 110208												
TC.. 16T302												
TC.. 16T304												
TC.. 16T308	0,12	**0,24**	0,35	0,8	**2,6**	4,4						
TC.. 16T312												
TC.. 220408												
VC.. 1103005							0,02	**0,025**	0,04	0,1	**1,25**	2,5
VC.. 110301							0,02	**0,03**	0,05	0,1	**1,25**	2,5
VC.. 1103015							0,02	**0,04**	0,075	0,1	**1,25**	2,5
VC.. 110302							0,02	**0,075**	0,1	0,1	**1,25**	2,5
VC.. 110304							0,02	**0,15**	0,25	0,1	**1,25**	2,5
VC.. 110308												
VC.. 160402												
VC.. 160404	0,08	**0,14**	0,20	0,4	**1,7**	3,0						
VC.. 160408	0,12	**0,21**	0,30	0,8	**2,1**	3,4						
VC.. 160412												
VC.. 220530												
WC.. 020102												
WC.. 020104												

sharp ◄——————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

9

Cutting data standard values for diamond cutting materials CTD PD20 / PS30 / PU20 / CD10

Material group			a_p = 0,04–0,4 mm Surface roughness R_z in µm 2,5–5,0	a_p = 0,04–0,4 mm Surface roughness R_z in µm 5,0–10	a_p = 0,4–1,0 mm Surface roughness R_z in µm 2,5–5,0	a_p = 0,4–1,0 mm Surface roughness R_z in µm 5,0–10	a_p = 0,4–2,5 mm Surface roughness R_z in µm 2,5–5,0	a_p = 0,4–2,5 mm Surface roughness R_z in µm 5,0–10
			CTD ...	CTD ...	CTD ...	CTD ...	CTD ...	CTD ...
Aluminium wrought alloys without Si f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PD20 / PU20 / CD10 **400–2500**	PD20 / PU20 / CD10 **400–2500**	PD20 / PU20 / CD10 **400–2000**	PD20 / PU20 / CD10 **400–2000**	PD20 / PU20 / CD10 **400–1600**	PD20 / PU20 / CD10 **400–1600**
	◔	Grade v_c in m/min		PD20 / CD10 **400–2500**		PD20 / CD10 **400–2000**		PD20 / CD10 **400–1600**
	◌	Grade v_c in m/min	PD20 / PU20 **400–2500**	PD20 / PU20 **400–2500**	PD20 / PU20 **400–2000**	PD20 / PU20 **400–2000**	PD20 / PU20 **400–1600**	PD20 / PU20 **400–1600**
Aluminium cast alloys Si=2–12 % f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PS30 / PU20 / CD10 **600–2000**	PS30 / PU20 / CD10 **600–2200**	PS30 / PU20 / CD10 **600–1800**	PS30 / PU20 / CD10 **600–2000**	PS30 / PU20 / CD10 **600–1500**	PS30 / PU20 / CD10 **600–1800**
	◔	Grade v_c in m/min	PD20 / PU20 / CD10 **400–2000**	PD20 / PU20 / CD10 **400–2200**	PD20 / PU20 / CD10 **400–1800**	PS30 / PU20 / CD10 **600–2000**	PS30 / PU20 / CD10 **400–1500**	PS30 / PU20 / CD10 **400–1800**
	◌	Grade v_c in m/min	PS30 **600–2000**	PS30 **600–2200**	PS30 **600–1800**	PS30 **600–2000**	PS30 **600–1500**	
Aluminium cast alloys Si=12–20 % f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PU20 / CD10 **800-1200**	PU20 / CD10 **400–1800**	PU20 / CD10 **700–1000**	PU20 / CD10 **400–1500**	PU20 / CD10 **600–900**	PU20 / CD10 **400–1200**
	◔	Grade v_c in m/min		PU20 / CD10 **600–1800**		PU20 / CD10 **600–1500**		PU20 / CD10 **600–1200**
	◌	Grade v_c in m/min		PU20 **600–1800**		PU20 **600–1500**		
Copper and copper wrought alloys f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PD20 / PU20 / CD10 **400–1800**	PD20 / PU20 / CD10 **300–1600**	PD20 / PU20 / CD10 **400–1600**	PS30 / PU20 / CD10 **300–1600**	PD20 / PU20 / CD10 **400–1400**	PD20 / PU20 / CD10 **400–1500**
	◔	Grade v_c in m/min	PU20 / CD10 **300–1500**	PD20 / PU20 / CD10 **300–1500**	PD20 / PU20 / CD10 **400–1600**	PS30 / PU20 / CD10 **300–1500**	PD20 / PU20 / CD10 **400–1500**	PD20 / PU20 / CD10 **300–1400**
	◌	Grade v_c in m/min		PD20 / PU20 **300–1800**		PS30 / PU20 **300–1700**	PD20 / PU20 **300–1600**	PS30 / PU20 **200–1300**
Plastic materials without reinforcement (acrylic glass) f=0.05–0.7 mm/rev.	○	Grade v_c in m/min		PD20 / CD10 **400–1200**		PD20 / CD10 **300–1000**		PD20 / CD10 **200–1000**
	◔	Grade v_c in m/min		PD20 / CD10 **300–1200**		PD20 / CD10 **200–1000**		PS30 / CD10 **200–900**
	◌	Grade v_c in m/min		PD20 / CD10 **400–1200**		PD20 / CD10 **300–1000**		PD20 / CD10 **200–1000**
Plastic materials with reinforcement (glass-fibre, carbon-fibre reinforced) f=0.05–0.7 mm/rev.	○	Grade v_c in m/min	PS30 / PU20 / CD10 **500–1000**		PS30 / PU20 / CD10 **400–900**	PS30 / PU20 / CD10 **300–900**	PS30 / PU20 / CD10 **300–800**	PS30 / PU20 / CD10 **200–1200**
	◔	Grade v_c in m/min	PS30 / PU20 / CD10 **400–900**		PS30 / PU20 / CD10 **300–800**	PS30 / PU20 / CD10 **200–900**	PS30 / PU20 / CD10 **200–800**	PS30 / PU20 / CD10 **200–1400**
	◌	Grade v_c in m/min	PU20 **500–1000**		PU20 **400–800**	PU20 **300–1000**	PU20 **300–800**	

○ **Smooth cut**	◔ **Irregular cutting depth**	◌ **Interrupted cut**

Application range of CBN grades

Cutting material grade	Cutting material designation		Properties		Application range	Interrupted cut	Material suitability/ ISO hardness			
	New	Old	PcBN content	Main binder			K	S	H	Sintered steels
High PcBN content	**CTB S10U**	PBC 10	95 %		Grey cast iron, sintered steels, super alloys	Smooth to medium interrupted cut	10	10		10
	CTB S20C	PBC 15-S	90 %		Spheroidal graphite cast iron, sintered steels, super alloys		20	20		20
Low PcBN content	**CTB H15C**	–	40 %	TiN	32 HRC and above	Smooth cut			15	
	CTB H15U	–	40 %	TiN		Smooth to slightly interrupted cut			15	
	CTB H20C	PBC 25-S	65 %	TiCN	48–62 HRC				20	
	CTB H21U	PBC 25	65 %	TiCN	52–65 HRC				20	
	CTB H40C	PBC 40-S	55 %	TiN	48–65 HRC	Interrupted cut			40	
	CTB H40U	PBC 40	65 %	TiN	54–65 HRC				40	

9

CBN – The Next Generation

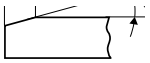
The ‚Sandwich' Technology

The singular system (patent), to apply CBN segments on a tungsten carbide base in a single process reduces the edge price significantly and opens up the possibility for the development of different CBN grades.

Specialized edge preperations! To achieve the highest efficiency for each application, the new CBN sandwich inserts are available with up to 8 edge preperations.

CBN Test Insert

The type CNGA test insert was specifically used, in order to identify the **quickest and most effective** type.
The insert is manufactured with four edge preperations for trial. The cutting edge with highest performance gives the correct chamfer style.



Article No.	Designation	Chamfers (BN x GB)				Price / €
71 499 ...						
290	CNGA 120408-X-**CTB S20C**	**A** F (sharp)	**B** 009B (0,09mm x 10°)	**C** 009C (0,09mm x 15°)	**E** 009D (0,09mm x 20°)	29,36
292	CNGA 120408-X-**CTB H20C**	**B** 009C (0,09mm x 15°)	**C** 009D (0,09mm x 20°)	**E** 011E (0,11mm x 25°)	**G** 014F (0,14mm x 30°)	29,36
294	CNGA 120408-X-**CTB H40C**	**C** 009D (0,09mm x 20°)	**E** 011E (0,11mm x 25°)	**G** 014F (0,14mm x 30°)	**H** 014G (0,14mm x 35°)	29,36

Cutting data values for CBN inserts

			CTB S10U (PBC 10)					
	Cutting edges code negative insert*		**EN** (A)			**F**		
	Cutting edges code positive insert*		**EN** (A)			**TN–D** (F)		
Index	**Material**	**Strength**	v_c	f	a_p	v_c	f	a_p
	Sintered steels (< HV300)		150–350	0,02–0,25	0,02–0,4	100–220	0,08–0,35	0,1–0,4
	General sintered steel (> HV300)		250–750	0,02–0,25	0,02–0,4	210–550	0,08–0,35	0,1–0,4
	High density sintered steel (> HV600)		200–700	0,02–0,25	0,02–0,4	150–400	0,08–0,35	0,1–0,4
3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	900–1600	0,02–0,25	0,05–0,25	700–1200	0,08–0,35	0,08–0,4
3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	900–1600	0,02–0,25	0,05–0,25	700–1200	0,08–0,35	0,08–0,4
3.3	Cast iron with spheroidal graphite	300–500 N/mm²	1000–1750	0,02–0,25	0,02–0,25	800–1250	0,08–0,35	0,08–0,4
3.4	Cast iron with spheroidal graphite	500–900 N/mm²	1000–1750	0,02–0,25	0,02–0,25	800–1250	0,08–0,35	0,08–0,4
3.5	White malleable cast iron	270–450 N/mm²						
3.6	White malleable cast iron	500–650 N/mm²						
3.7	Black malleable cast iron	300–450 N/mm²						
3.8	Black malleable cast iron	500–800 N/mm²						
5.1	Pure nickel							
5.2	Nickel alloys							
5.3	Nickel alloys	< 850 N/mm²						
5.4	Nickel molybdenum alloys		300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.5	Nickel-chromium alloys	< 1300 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.6	Cobalt Chrome Alloys	< 1300 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.7	Heat resistant alloys	< 1300 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.9	Pure titanium	< 900 N/mm²						
5.10	Titanium alloys	< 700 N/mm²						
5.11	Titanium alloys	< 1200 N/mm²						

			CTB S20C (PBC 15S)					
	Cutting edges code negative insert*		**SN–C** (D)			**SN–D** (E)		
	Cutting edges code positive insert*		**TN–D**			**SN–D**		
Index	**Material**	**Strength**	v_c	f	a_p	v_c	f	a_p
	Sintered steels (< HV300)		130–300	0,05–0,35	0,06–0,4	120–250	0,06–0,35	0,08–0,4
	General sintered steel (> HV300)		250–600	0,05–0,35	0,06–0,4	220–580	0,06–0,35	0,08–0,4
	High density sintered steel (> HV600)		180–550	0,05–0,35	0,06–0,4	170–510	0,06–0,35	0,08–0,4
3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	650–1100	0,05–0,35	0,06–0,4	600–1000	0,06–0,35	0,08–0,5
3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	650–1100	0,05–0,35	0,06–0,4	600–1000	0,06–0,35	0,08–0,5
3.3	Cast iron with spheroidal graphite	300–500 N/mm²	750–1300	0,05–0,35	0,06–0,4	700–1250	0,06–0,35	0,08–0,5
3.4	Cast iron with spheroidal graphite	500–900 N/mm²	750–1300	0,05–0,35	0,06–0,4	700–1250	0,06–0,35	0,08–0,5
3.5	White malleable cast iron	270–450 N/mm²						
3.6	White malleable cast iron	500–650 N/mm²						
3.7	Black malleable cast iron	300–450 N/mm²						
3.8	Black malleable cast iron	500–800 N/mm²						
5.1	Pure nickel							
5.2	Nickel alloys							
5.3	Nickel alloys	< 850 N/mm²						
5.4	Nickel molybdenum alloys		180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.5	Nickel-chromium alloys	< 1300 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.6	Cobalt Chrome Alloys	< 1300 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.7	Heat resistant alloys	< 1300 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.9	Pure titanium	< 900 N/mm²						
5.10	Titanium alloys	< 700 N/mm²						
5.11	Titanium alloys	< 1200 N/mm²						

* Note chamfer width: The wider the chamfer, the more stable the cutting edge.

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for CBN inserts

CTB S20C (PBC 15S)								
EN (A)			**SN–B** (B)			**SN–C** (C)		
EN (A)			**SN–B** (B)			**SN–C** (C)		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
150–350	0,02–0,25	0,02–0,4	150–350	0,04–0,25	0,03–0,4	150–350	0,05–0,25	0,06–0,4
250–750	0,02–0,25	0,02–0,4	250–700	0,04–0,25	0,03–0,4	250–650	0,05–0,25	0,06–0,4
200–700	0,02–0,25	0,02–0,4	200–700	0,04–0,25	0,03–0,4	200–600	0,05–0,25	0,06–0,4
800–1450	0,02–0,25	0,05–0,25	700–1400	0,04–0,25	0,05–0,25	650–1300	0,05–0,25	0,06–0,4
800–1450	0,02–0,25	0,05–0,25	700–1400	0,04–0,25	0,05–0,25	650–1300	0,05–0,25	0,06–0,4
900–1600	0,02–0,25	0,05–0,25	800–1600	0,04–0,25	0,05–0,25	780–1400	0,05–0,25	0,06–0,4
900–1600	0,02–0,25	0,05–0,25	800–1600	0,04–0,25	0,05–0,25	780–1400	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4

CTB S20C (PBC 15S)								
SN–D (F)			**SN–E** (G)			**SN–F** (H)		
TN–E			**SN–E**			**SN–F**		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
100–220	0,08–0,35	0,1–0,4	100–200	0,1–0,35	0,1–0,4	80–150	0,12–0,35	0,12–0,4
210–550	0,08–0,35	0,1–0,4	200–520	0,1–0,35	0,1–0,4	180–480	0,12–0,35	0,12–0,4
150–400	0,08–0,35	0,1–0,4	130–350	0,1–0,35	0,1–0,4	80–250	0,12–0,35	0,12–0,4
550–1000	0,08–0,35	0,08–0,4	550–950	0,1–0,35	0,1–0,4	500–850	0,12–0,35	0,12–0,4
550–1000	0,08–0,35	0,08–0,4	550–950	0,1–0,35	0,1–0,4	500–850	0,12–0,35	0,12–0,4
700–1200	0,08–0,35	0,08–0,4	700–1100	0,1–0,35	0,1–0,4	650–1000	0,12–0,35	0,12–0,4
700–1200	0,08–0,35	0,08–0,4	700–1100	0,1–0,35	0,1–0,4	650–1000	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4

CCGW 120404 FN-...

CTB H15U / CT		
FN (A) / **FN** (A)		
FN (A) / **FN** (A)		
1,6 - 6,4		
v_c	f	a_p
0-240	0,03-0,15	0,06
240	0,03-0,15	0,0
	0,03-0,15	

9

Cutting data values for CBN inserts

					CTB H15U / CTB H15C (BHT02RU / BHT02R)					
		Cutting edge code negative insert*			FN (A) / FN (A)			EN (B) / EN (B)		
		Cutting edges code positive insert*			FN (A) / FN (A)			EN (B) / EN (B)		
			Ra (theo.)		1,6 – 6,4			1,0 – 3,2		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		160–240	0,03–0,15	0,06–0,3	160–240	0,03–0,15	0,06–0,3
6.3	Tempered steel	56–60 HRC	x		160–240	0,03–0,15	0,06–0,3	160–240	0,03–0,15	0,06–0,3
6.4		61–65 HRC								
6.5		65–70 HRC								

					CTB H21U / CTB H20C (PBC 25 / PBC 25S)					
		Cutting edge code negative insert*			FN (A) / FN (A)			TN-C (B)		
		Cutting edges code positive insert*			EN (A) / FN (A)			EN (B)		
			Ra (theo.)		1,6 – 6,4			1,0 – 4,5		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		300–380	0,04–0,25	0,05–0,5	280–350	0,04–0,15	0,05–0,5
6.3	Tempered steel	56–60 HRC	x		300–380	0,04–0,25	0,05–0,5	280–350	0,04–0,15	0,05–0,5
6.4		61–65 HRC								
6.5		65–70 HRC								

					CTB H21U / CTB H20C (PBC 25 / PBC 25S)					
		Cutting edge code negative insert*			TN-E (F)/ SN-E (F)			SN-F (G)		
		Cutting edges code positive insert*			TN-E (F)			SN-E (G)		
			Ra (theo.)		0,35 – 1,6			0,2 – 0,8		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		210–260	0,05–0,15	0,1–0,5	180–230	0,06–0,20	0,1–0,5
6.3	Tempered steel	56–60 HRC	x		210–260	0,05–0,15	0,1–0,5	180–230	0,06–0,20	0,1–0,5
6.4		61–65 HRC								
6.5		65–70 HRC								

					CTB H40U / CTB H40C (PBC 40 / PBC 40S)					
		Cutting edge code negative insert*			FN (A) / EN (A)			SN-C (B)		
		Cutting edges code positive insert*			FN (A) / EN (A)			TN-D (B)		
			Ra (theo.)		1,0 – 3,2			0,8 – 3,0		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		190–250	0,03–0,15	0,03–0,5	180–240	0,04–0,15	0,03–0,5
6.3	Tempered steel	56–60 HRC	x		190–250	0,03–0,15	0,03–0,5	180–240	0,04–0,15	0,03–0,5
6.4		61–65 HRC	x		190–250	0,03–0,15	0,03–0,5	180–240	0,04–0,15	0,03–0,5
6.5		65–70 HRC								

					CTB H40U / CTB H40C (PBC 40 / PBC 40S)					
		Cutting edge code negative insert*			SN-E (F)			SN-F (G)		
		Cutting edges code positive insert*			TN-F (F)			SN-F (G)		
			Ra (theo.)		0,4 – 1,0			0,2 – 0,8		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		180–230	0,05–0,25	0,1–0,5	130–200	0,04–0,15	0,1–0,5
6.3	Tempered steel	56–60 HRC	x		180–230	0,05–0,25	0,1–0,5	130–200	0,04–0,15	0,1–0,5
6.4		61–65 HRC	x		180–230	0,05–0,25	0,1–0,5	130–200	0,04–0,15	0,1–0,5
6.5		65–70 HRC								

* Note chamfer width: The wider the chamfer, the more stable the cutting edge.

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for CBN inserts

CTB H15U / CTB H15C (BHT02RU / BHT02R)								
SN-C (D) / **SN-C** (D)			**SN-E** (F) / **SN-E** (F)			**RN / RN** (Rounded chamfer)		
SN-C (D) / **SN-C** (D)			**SN-E** (F) / **SN-E** (F)			**RN / RN** (Rounded chamfer)		
0,5 – 1,6			0,1 – 0,8			0,1 – 0,8		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
140–200	0,06–0,2	0,08–0,3	120–180	0,06–0,25	0,1–0,4	130–210	0,06–0,2	0,08–0,3
140–200	0,06–0,2	0,08–0,3	120–180	0,06–0,25	0,1–0,4	130–210	0,06–0,2	0,08–0,3
140–200	0,06–0,2	0,08–0,3	120–180	0,06–0,25	0,1–0,4	130–210	0,06–0,2	0,08–0,3

CTB H21U / CTB H20C (PBC 25 / PBC 25S)								
TN-D (C)			**TN-D** (D) / **SN-D** (D)			**TN-E** (E)		
SN-B (C)			**TN-D** (D) / **SN-C** (D)			**SN-D** (E)		
0,8 – 3,0			0,5 – 2,0			0,35 – 2,5		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
270–330	0,06–0,25	0,05–0,5	250–320	0,06–0,25	0,08–1,0	220–290	0,05–0,15	0,08–0,5
270–330	0,06–0,25	0,05–0,5	250–320	0,06–0,25	0,08–1,0	220–290	0,05–0,15	0,08–0,5

CTB H21U / CTB H20C (PBC 25 / PBC 25S)		
SN-G (H)		
SN-F (H)		
0,1 – 0,5		
v_c	f	a_p
160–200	0,05–0,12	0,1–0,5
160–200	0,05–0,12	0,1–0,5

CTB H40U / CTB H40C (PBC 40 / PBC 40S)								
SN-D (C)			**SN-D** (D)			**EN-T** (E)/ **SN-E** (E)		
SN-D (C)			**TN-D** (D)			**EN-T** (E)/ **SN-E** (E)		
0,8 – 2,0			0,5 – 1,6			0,5 – 1,6		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
160–220	0,04–0,15	0,03–0,5	150–210	0,04–0,25	0,08–0,5	140–200	0,05–0,15	0,08–0,5
160–220	0,04–0,15	0,03–0,5	150–210	0,04–0,25	0,08–0,5	140–200	0,05–0,15	0,08–0,5
160–220	0,04–0,15	0,03–0,5	150–210	0,04–0,25	0,08–0,5	140–200	0,05–0,15	0,08–0,5

CTB H40U / CTB H40C (PBC 40 / PBC 40S)		
SN-G (H)		
SN-G (H)		
0,1 – 0,5		
v_c	f	a_p
120–190	0,04–0,12	0,1–0,5
120–190	0,04–0,12	0,1–0,5
120–190	0,04–0,12	0,1–0,5

CCGW 120404 FN –...

CTB H15U / CT		
FN (A) / **FN** (A)		
FN (A) / **FN** (A)		
1,6 – 6,4		
v_c	f	a_p
0–240	0,03–0,15	0,06
240	0,03–0,15	0,0
	0,03–0,15	

9

Diamond as a cutting material



Ensures

- optimal surface quality
- burr-free workpieces
- high service lives
- lowest cutting forces
- high Process Security

Complete programme of roughing, finishing and wiper inserts for machining aluminium, non ferrous metals, plastics, ...

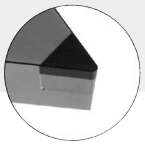
The cutting materials

	CTD CD10 (CVD)	CTD PD20 (PKD)	CTD PU20 (PKD)	CTD CD10 (CVD)
	Fine grain Size (N10)	Fine grain grade (N20)	Coarse grain grade (N20)	Coarse grain Size (N30)
Properties	▲ perfect sharp edges ▲ no cutting pressure ▲ very close tolerances ▲ highest abrasion resistance with highest toughness ▲ very high heat conductivity	▲ high sharpness ▲ lower cutting pressure than PDC-S ▲ close tolerance ▲ lower abrasion resistance with increased toughness	▲ very sharp cutting edge ▲ reduced cutting pressure ▲ tight tolerances ▲ very high level of wear resistance and toughness	▲ high sharpness ▲ lower cutting pressure ▲ close tolerance ▲ lower abrasion resistance than with the PDC, with increased toughness
Material	suitable for superfinishing and semi-finishing of all non ferrous metals and NE-composite materials with small to high levels of abrasiveness	suitable for fine machining of all NE materials with low abrasiveness	suitable for finishing to roughing non-ferrous metals and non-ferrous materials with highly abrasive alloying element. High chip removal on fibre-reinforced plastics such as CFRP and GFRP.	suitable for fine machining of all NE-materials and non-ferrous metals with low to very high levels of abrasiveness

Cutting Geometries

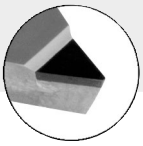
Neutral rake angle:

- higher cuting force
- higher temperature
- improved surface quality
- for stable workpieces



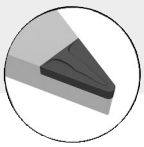
Positive rake angle:

- lower cutting force
- lower temperature
- reduction in surface quality
- for unstable workpieces
- improved accuracy



CB chip breaker geometries:

- reliable chip control
- ideal for low-alloy aluminium
- for F | M | R applications

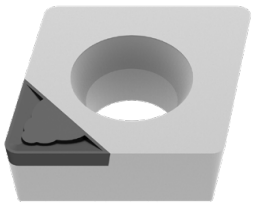


Notes on diamond usage

- coolant is not generally needed, however it facilitates chip removal
- note the chemical reaction to carbide-forming elements (PCD)
- note the thermal interaction and critical temperature:
  PCD: 600 °C, CVD: 700 °C
  Depending on the material, use cooling.

Cutting data standard values for the CB chip breaker geometries

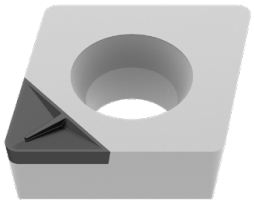
-CB1



3D-Chip Breaker -CB1				
Corner Radius	a_p in mm		f_z in mm/rev.	
	min.	max.	min.	max.
0,1 mm	0,05	0,30	0,02	0,05
0,2 mm	0,06	0,40	0,03	0,08
0,4 mm	0,10	0,80	0,04	0,15
0,8 mm	0,15	1,00	0,08	0,20
1,2 mm	0,30	1,50	0,12	0,25

- Finish and Superfinish
- Extremely sharp cutting edge geometry
- Depth of Cut a_p: 0,05–1,5 mm
- Smallest cutting pressure for highest accuracies
- For machining of thin-walled and unstable workpieces

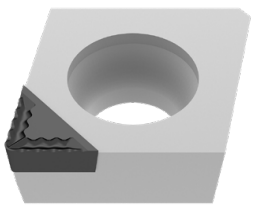
-CB2



3D-Chip Breaker -CB2				
Corner Radius	a_p in mm		f_z in mm/rev.	
	min.	max.	min.	max.
0,2 mm	0,50	0,80	0,08	0,12
0,4 mm	0,60	1,50	0,08	0,20
0,8 mm	0,70	1,50	0,15	0,30
1,2 mm	0,80	2,00	0,20	0,40

- Semi-finish and Finish machining
- Negative edge preperation
- Cutting Depth a_p: 0,5–2,0 mm
- High surface quality and tight tolerances
- Machining of solid workpieces under stable conditions

-CB3



3D-Chip Breaker -CB3				
Corner Radius	a_p in mm		f_z in mm/rev.	
	min.	max.	min.	max.
0,4 mm	1,00	3,00	0,10	0,20
0,8 mm	1,00	3,00	0,15	0,35

- Medium and rough machining
- Highly aggressive chip breaker
- Cutting depth a_p: 1,0–3,0 mm
- Stable component conditions necessary
- Cooling must be ensured

Standard chip breakers / application notes

Negative

Main application steel and cast iron, secondary application stainless steels

Model	Smooth cut ○	Irregular cutting depth ◌	Interrupted cut ◌	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-CF / -CF20 (-CF / -NF12) ▲ Fine finishing ▲ Sharp cutting edge for low cutting forces ▲ Good chip control even at small depths of cut	**CTEP110 / TCM10 (DCC1110 / CWC10)** CTEP110 / TCM10 (DCC1110 / CWC10) CTEP110 / TCM10 (DCC1110 / CWC10)			0,30–1,50	0,07–0,25	CN.. DN.. TN.. WN..
F						
-F40 (-F40) ▲ Fine turning chip breaker for machining steels ▲ Good chip control ▲ Ideal for copy turning work	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)		0,50–2,00	0,10–0,30	VN..
F						
-F50 (-NF15) ▲ Fine turning chip breaker for fine machining ▲ Steel and stainless steels ▲ Excellent chip control ▲ High surface quality	**CTCP125 (HCX1125)** CTCP115 / CTCP125 (HCX115 / HCX1125)	**CTCP115 / CTCP125 / CTCP135 (HCX1115 / HCX1125 / HCX1135)** CTCP125 / CTCP135 (HCX1125 / HCX1135)	**CTCP135 (HCX1135)** CTCP135 (HCX1135)	0,10–2,60	0,06–0,35	CN.. DN.. SN.. TN.. VN.. WN..
F						
-TFQ (-TFQ) ▲ Wiper geometry ▲ Finishing to medium machining ▲ Very high feedrate ▲ High surface quality	**CTEP110 / CTCP115 (DCC1110 / HCX1115)** CTEP110 / CTCP115 (DCC1110 / HCX 1115) CTEP110 / CTCP115 (DCC1110 / HCX 1115)	**CTCP115 / CTCP125 (HCX1115 / HCX1125)** CTCP115 / CTCP125 (HCX1115 / HCX1125) CTCP115 / CTCP125 (HCX1115 / HCX1125)		0,50–5,00	0,10–0,60	CN.. DN.. WN..
F						
-42 (-42) ▲ Extremely soft-cutting chip breaker ▲ For small and medium widths of cut ▲ Suitable for thin-walled parts	**CTC2135 (CWN2135)** CTC2135 (CWN2135)	**CTC2135 (CWN2135)** CTC2135 (CWN2135)		0,50–4,50	0,05–0,35	CN..
F **M**	**CTC2135 (CWN2135)**	**CTC2135 (CWN2135)**				
-XU (-XU) ▲ Finishing to light roughing ▲ Universal chip breaker ▲ Copy turning ▲ Excellent chip formation ▲ Low cutting forces	**CTCP115 / CTCP125 (HCX1115 / HCX1125)** CTCP125 (HCX1125) CTCP115 (HCX1115)	CTCP115 / **CTCP125 (HCX1115 / HCX1125)** CTCP125 (HCX1125) CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP125 (HCX1125)	0,40–4,50	0,12–0,40	CN.. DN.. VN.. WN..
M						

Standard chip breakers / application notes

Negative

Main application steel and cast iron, secondary application stainless steels

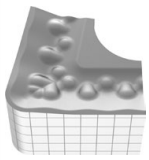
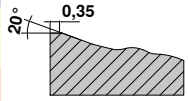
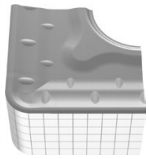
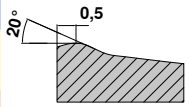
Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-M40 (-M40) ▲ Stable geometry ▲ Medium feed rates ▲ Can be used for any application ▲ Good chip control	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)		0,50–3,00	0,10–0,35	VN..
-M50 (-NM15) ▲ Medium machining ▲ First choice for steel machining ▲ Universal application ▲ Wide range of applications	**CTCP115 / CTCP125 / CTCK110 / CTCK120 (HCX1115 / HCX1125 / DCX3110 / HCF3120)** CTCP125 (HCX1125) **CTCP115 / CTCP125 / CTCK110 / CTCK120 (HCX1115 / HCX1125 / DCX3110 / HCF3120)**	CTCP115 / **CTCP125 (HCX1115 / HCX1125)** CTCP115 / **CTCP125 / CTCK110 / CTCK120** (HCX1115 / **HCX1125 / DCX3110 / HCF3120)**	**CTCP125 (HCX1125)** **CTCP125 / CTCK120 (HCX1125 / HCF3120)**	0,50–5,00	0,12–0,40	CN.. DN.. SN.. TN.. VN.. WN..
-TMQ (-TMQ) ▲ Wiper geometry ▲ Light to medium rough machining ▲ Very high feedrate ▲ High surface quality	**CTCP115 (HCX1115)** CTCP125 (HCX1125) CTCP125 (HCX1125)	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)		0,80–6,00	0,20–0,85	CN.. DN.. WN..
-M70 (-NM19) ▲ Light to medium rough machining ▲ Cast crust and forging skin ▲ Stable cutting edge ▲ Interrupted cut ▲ Raw materials and forgings	**CTCK110 / CTCK120 / CTCP115 (DCX3110 / HCF3120 / HCX1115)** **CTCP125 / CTC2135 (HCX1125 / CWN2135)** **CTCK110 / CTCK120 / CTCP115** / CTCP125 **(DCX3110 / HCF3120 / HCX1115 /** HCX1125) CTC2135 / CTCP125 (CWN2135 / HCX1125)	CTCP115 / **CTCP125** (HCX1115 / **HXC1125)** **CTC2135 /** CTCP135 **CWN2135 /** HCR1135 **CTCK120 /** CTCP125 **(HCF3120 /** HCX1125) CTC2135 / CTCP125 (CWN2135 / HCX1125)	**CTCP125 / CTCP135 (HCX1125 / HCR1135)** CTCP135 / **CTC2135** HCR1135 / **CWN2135** **CTCP125 /** CTCK120 **(HCX1125 /** HCF3120)	1,50–4,50	0,20–0,80	CN.. DN.. SN.. TN.. WN..
.NMA ▲ Rough machining ▲ Stable cutting edge ▲ For short-chipping materials ▲ First choice for grey cast iron	**CTCK110 (DCX3110)**	**CTCK110 / CTCK120 (DCX3110 / HFC3120)**	**CTCK120 HFC3120**	1,50–4,50	0,20–0,80	CN.. DN.. SN.. TN.. WN..
-R28 (-NR14) ▲ Single sided roughing geometry ▲ Longitudinal, face and copy turning ▲ Varying depths of cut ▲ Steels with low tensile strength (800 N/mm²) ▲ Good chip control	**CTCP115** / CTCP125 **(HCX1115** / HCX1125) **CTCP115 / CTCP125 (HCX1115 / HCX1125)** CTCP115 (HCX1115) CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP115 / CTCP135 / CTCP125 (HCX1115 / HCR1135 / HCX1125) **CTCP125 / CTCP135 (HCX1125 / HCR1135)** CTCP115 / CTCP125 (HCX1115 / HCX1125) CTCP135 (HCR1135)	**CTCP135 (HCR1135)** **CTCP135 (HCR1135)** CTCP125 (HCX1125) CTCP135 (HCR1135)	1,00–12,00	0,25–0,80	CN.. DN.. SN..

9

Standard chip breakers / application notes

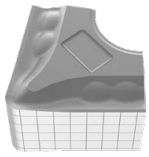
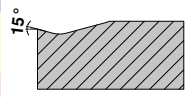
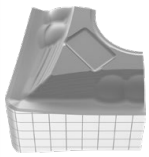
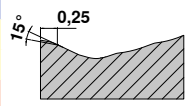
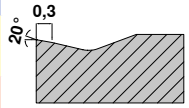
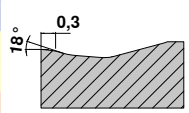
Negative

Main application steel and cast iron, secondary application stainless steels

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-R58 (-NR17) ▲ Single sided roughing geometry ▲ Longitudinal and face turning ▲ Light interrupted cut ▲ Low cutting forces ▲ Unstable machines						
 **R**	**CTCP115** / CTCP125 **(HCX1115** / HCX1125)	**CTCP115 / CTCP135 / CTCP125** **(HCX1115 / HCR1135 / HCX1125)**	**CTCP135** **(HCR1135)**			CN.. DN.. SN.. TN..
	CTCP115 / CTCP125 **(HCX1115 / HCX1125)**	**CTCP125 / CTCP135** **(HCX1125 / HCR1135)**	**CTCP135** **(HCR1135)**			
	CTCP115 (HCX1115)	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP125 (HCX1125)			
				1,50–12,00	0,30–1,20	
	CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP135 (HCR1135)	CTCP135 (HCR1135)			
-R88 (-NR19) ▲ Single sided roughing geometry ▲ Longitudinal and face turning ▲ High feedrate ▲ Large depths of cut ▲ Heavily interrupted cut						
 **R**	**CTCP115** / CTCP125 **(HCX1115** / HCX1125)	CTCP115 / CTCP125 / CTCP135 (HCX1115 / HCX1125 / HCR1135)	**CTCP135** **(HCR1135)**			SN..
	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP135 (HCR1135)			
	CTCP115 **HCX1115**	**CTCP115** / CTCP125 **(HCX1115** / HCX1125)	**CTCP125** **(HCX1125)**			
				3,50–16,00	0,50–1,50	
	CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP135 (HCR1135)	CTCP135 (HCR1135)			

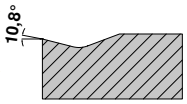
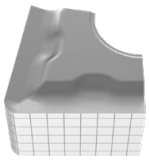
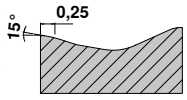
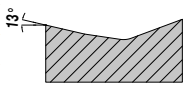
Negative

Main application stainless steels, secondary application steel and super alloys

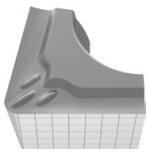
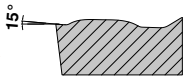
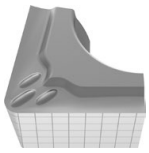
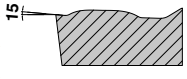
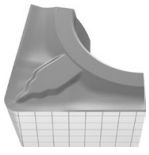
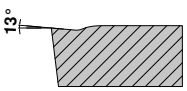
Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-F30 (-NF23) ▲ Finishing of stainless steels ▲ Continous cut ▲ High surface quality ▲ Good swarf control						
 **F**	CTPM125 (HCN2125)	CTPM125 (HCN2125)				CN.. DN.. SN.. TN.. VN.. WN..
	CTPM125 **(HCN2125)**	**CTPM125** **(HCN2125)**				
				0,08–2,5	0,10–0,35	
-M30 (-NM23) ▲ Option for stainless steel machining ▲ Good swarf control ▲ Little edg build up ▲ Low cutting forces ▲ Little built-up edge ▲ Applicable on unstable machines						
 **F** **M**	CTPM125 (HCN2125)	CTPM125 (HCN2125)	CTPM125 (HCN2125)			CN.. DN.. SN.. TN.. VN.. WN..
	CTPM125 **(HCN2125)**	**CTPM125** **(HCN2125)**	**CTPM125** **(HCN2125)**			
				1,00-4,50	0,15-0,40	
	CTPM125 (HCN2125)	CTPM125 (HCN2125)				
-M42 (-M42) ▲ For medium machining of stainless steels ▲ Also by application on general steels and superalloys						
 **M**	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**	**CTC2135** **(CWN2135)**			CN.. DN.. SN.. TN.. WN..
	CTP2120 / CTC2135 **(CCN2120 / CWN2135)**	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**				
				1,00–4,00	0,20–0,40	
-M60 (-NM26) ▲ Light to medium roughing ▲ Stable cutting edge ▲ Interrupted cut ▲ Forged skin and cast crust						
 **M** **R**	CTPM125 (HCN2125)	CTPM125 (HCN2125)	CTPM125 (HCN2125)			CN.. DN.. SN.. TN.. WN..
	CTPM125 **(HCN2125)**	**CTPM125** **(HCN2125)**	**CTPM125** **(HCN2125)**			
				1,50–6,00	0,25–0,50	
		CTPM125 (HCN2125)	CTPM125 (HCN2125)			

Standard chip breakers / application notes

Negative

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application super alloys, secondary application stainless steels						
-F32 (-F32) ▲ Streamlined geometry for finishing superalloys ▲ For finishing stainless steels						
F	**CTP2120 (CCN2120)**	**CTP2120 (CCN2120)**				CN.. DN.. VN..
	CTP2120 (CCN2120)	CTP2120 (CCN2120)		0,05–4,0	0,05–0,25	
	CTP2120 (CCN2120)					
-M34 (-M34) ▲ First choice for superalloys ▲ Light cutting geometry ▲ Little built-up edge ▲ Low cutting forces						
M	**CTP5110 / CTP5115 (HCN5110 / HCN5115)**	**CTP5110 / CTP5115 (HCN5110 / HCN5115)**				CN.. DN.. SN.. VN.. WN..
	CTP5110 / CTP5115 (HCN5110 / HCN5115)	**CTP5110 / CTP5115 (HCN5110 / HCN5115)**		0,80–3,0	0,10–0,30	
-M52 (-M52) ▲ Universal geometry for machining superalloys and stainless steels						
M	**CTP2120 (CCN2120)**	**CTP2120 (CCN2120)**				CN.. DN.. SN.. TN.. WN..
	CTP2120 (CCN2120)	CTP2120 (CCN2120)		1,50–4,00	0,20–0,38	

Positive

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application steel and cast iron, secondary application stainless steels and super alloys						
-CF05 (-PF14) ▲ Fine finishing ▲ For all common steel materials, stainless steels and GGG ▲ Good swarf control ▲ High surface quality						
F	**CTEP110 / TCM407 (DCC1110 / CWC407)**	TCM10 / TCM407 (CWC10 / CWC407)				CC.. DC.. SC.. TC.. VC..
	CTEP110 (DCC1110)					
	CTEP110 (DCC1110)	TCM10 / TCM407 (CWC10 / CWC407)		0,20–1,30	0,06–0,25	
-SF (-ZF) ▲ Finishing / contour turning ▲ Good swarf control ▲ High surface quality ▲ Low cutting forces						
F	CTC2135 / **CTCP115** (CWN2135 / **HCX1115**)	**CTCP125 (HCX1125)**	**CTCP125 / CTCP135 (HCX1125 / HCR1135)**			CC.. DC.. SC.. TC.. VC.. WC..
	CTC2135 / **CTCP125** (CWN2135 / **HCX1125**)	CTCP125 / **CTC2135** (HCX1125 / **CWN2135**)	**CTC2135 (CWN2135)**			
		CTCP125 (HCX1125)	**CTCP125 (HCX1125)**			
	CTC2135 / CTCP125 (CWN2135 / HCX1125)	CTC2135 (CWN2135)		0,05–2,50	0,05–0,25	
-CF55 (-PF15) ▲ Finishing to medium machining ▲ Suitable for general and stainless steels ▲ Low cutting forces ▲ Good swarf control ▲ High surface quality						
F M	**CTEP110 (DCC1110)**	**TCM10** / CTEP110 **(CWC10** / DCC1110)				CC.. DC.. SC.. TC.. VC..
	CTEP110 (DCC1110)	CTEP110 (DCC1110)				
	CTEP110 (DCC1110)	CTEP110 (DCC1110)		0,20–1,30	0,06–0,25	

9

Standard chip breakers / application notes

Positive

Main application steel and cast iron, secondary application stainless steels and super alloys

Model	Smooth cut	Irregular cutting depth	Interrupted cut	sectional illustration a_p mm	sectional illustration f mm	Geometry
-SMF (-SMF) ▲ Finishing to medium machining ▲ Low cutting forces ▲ Good swarf control ▲ High surface quality	**CTEP110 /** CTCP115 **(DCC1110 /** HCX1115) CTCP115 / CTCP125 / CTEP110 (HCX1115 / HCX1125 / DCC1110) CTEP110 (DCC1110)	**TCM10 /** CTCP125 / CTCP115 **(CWC10 /** HCX1125 / HCX1115) CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP135 HCR1135 CTCP135 HCR1135	0,20–1,30	0,06–0,25	CC.. DC.. SC.. TC.. VC..
F **M**	CTCP115 / CTCP135 (HCX1115 / HCR1135)	CTCP135 HCR1135				
-SM (-ZM) ▲ Medium machining ▲ Universal application ▲ Stable cutting edge ▲ Varying depths of cut ▲ Wide range of applications	**CTCP115 / CTCP125** **(HCX1115 / HCX1125)** **CTCP125** **(HCX1125)** **CTCP115 /** CTCK110 / CTCK120 **(HCX1115 /** DCX3110 / HCF3120)	**CTCP125 / CTCP135 /** CTCP115 **(HCX1125 / HCR1135 /** HCX1115) **CTCP125 / CTCP135** **(HCX1125 / HCR1135)** **CTCP125 /** CTCK110 / CTCK120 **(HCX1125 /** DCX3110 / HCF3120)	**CTCP125 / CTCP135** **(HCX1125 / HCR1135)** **CTCP135** **(HCR1135)** CTCK120 / CTCP125 HCF3120 / HCX1125	0,05–5,00	0,15–0,45	CC.. DC.. RC.. SC.. TC.. VC..
M	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP135 HCR1135				
-SMQ (-SMQ) ▲ Positive wiper geometry ▲ Finishing to medium machining ▲ Very high feedrate ▲ High surface quality	**CTCP115** **(HCX1115)** **CTCP115** **(HCX1115)** CTCP125 / CTCP115 (HCX1125 / HCX1115)	CTCP125 (HCX1125) CTCP125 (HCX1125) CTCP125 (HCX1125)	CTCP125 (HCX1125) CTCP125 (HCX1125)	1,00–4,00	0,15–0,45	CC.. DC..
M						

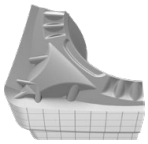
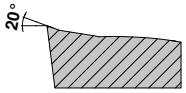
Positive

Main application stainless steels

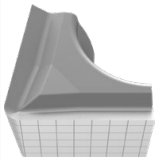
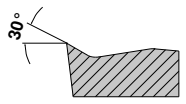
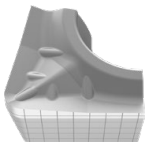
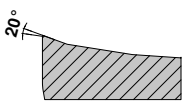
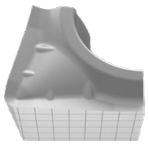
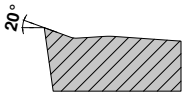
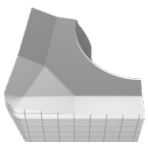
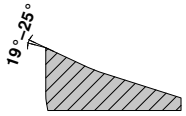
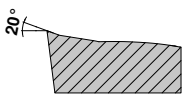
Model	Smooth cut	Irregular cutting depth	Interrupted cut	sectional illustration a_p mm	sectional illustration f mm	Geometry
-F43 (-F43) ▲ For the light to medium machining of all stainless steels, general steels and superalloys	CTC2135 (CWN2135) **CTC2135** **(CWN2135)**	CTC2135 (CWN2135) **CTC2135** **(CWN2135)**	CTC2135 (CWN2135) **CTC2135** **(CWN2135)**	0,50 –2,50	0,05–0,25	CC.. DC.. TC..
F	CTC2135 (CWN2135)	CTC2135 (CWN2135)				
-M25 (-PF23) ▲ First choice for medium machining of stainless steels ▲ High surface quality ▲ Little built-up edge	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**		0,40–3,20	0,10–0,30	CC.. DC.. TC.. VC..
F **M**						
-M55 (-PF26) ▲ First choice for medium machining to roughing of stainless steels ▲ Smooth to lightly interrupted cut ▲ Good swarf control ▲ Stable cutting edge	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**	CTPM125 (HCN2125) CTPM125 (HCN2125)	0,40–4,80	0,06–0,35	CC.. DC.. SC.. TC.. VC..
M	CTPM125 (HCN2125)	CTPM125 (HCN2125)				

Standard chip breakers / application notes

Positive

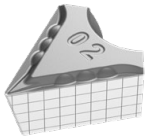
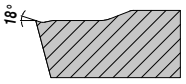
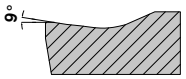
Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application stainless steels						
-M81 (-M81) ▲ Directly pressed insert ▲ Positive rake angle ▲ Good swarf control ▲ For medium to rough machining						
 **M**	**CWN2120 (CWN2120)** CWN2120 (CWN2120)	CWN2120 (CWN2120)	CWN2120 (CWN2120)	 1,00–6,00	0,25–0,60	CC.. DC.. VC..

Positive

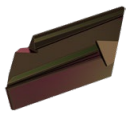
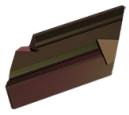
Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application non-ferrous metals, secondary application stainless steels, steels, super alloys, cast iron						
-23P (-23P) ▲ Low adhesion ▲ Good chip control with soft aluminium alloys						
 **F**	H216T (CWK26) H216T (CWK26) H216T (CWK26)	H216T (CWK26) H216T (CWK26) H216T (CWK26)	H216T (CWK26)	 0,2–4,0	0,05–0,3	CC.. DC..
-25P (-25P) ▲ Sharp cutting edge ▲ Good swarf control on soft aluminium alloys ▲ Low adhesion						
 **F** **M**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T (CWK26)** **AMZ (AMZ)**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T (CWK26)** **AMZ (AMZ)**	**H216T (CWK26)**	 0,50–4,50	0,05–0,60	CC.. DC.. SC.. VC..
-25Q (-25Q) ▲ Wiper geometry ▲ High feed rates ▲ High surface quality ▲ Good swarf control on soft aluminium alloys ▲ Low adhesion						
 **M**	H210T / AMZ (CWK20 / AMZ) **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)**	H210T / AMZ (CWK20 / AMZ) **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)**	**H210T / AMZ (CWK20 / AMZ)**	 0,05–6,50	0,05–0,60	CC.. DC.. VC..
-27 (-27) ▲ The universal Alu geometry ▲ Sharp cutting edge ▲ Extremely positive rake angle ▲ Low adhesion ▲ High feed rates						
 **M** **R**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H10T (CWK15)**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H10T (CWK15)**	**H216T (CWK26)** **H10T (CWK15)**	 1,00–10,00	0,10–0,75	CC.. DC.. RC.. SC.. TC.. VC..
-29 (-29) ▲ Direct sintered aluminium geometry ▲ Positive rake angle ▲ Good chip control ▲ For medium to rough machining						
 **F** **R**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T / AMZ (CWK26 / AMZ)**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T / AMZ (CWK26 / AMZ)**	**H216T (CWK26)** **H216T (CWK26)**	 1,00–6,00	0,25–0,60	CC.. DC.. VC..

9

Standard chip breakers / application notes

Positive	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application super alloys and stainless steels, secondary application steels and non-ferrous metals							
-F05 (-F05) ▲ Maximum tolerance class ▲ Outstanding chip control, even with the smallest cutting depths ▲ Very low cutting forces	 F	**CTPX710**			 0,10–2,50	0,02–0,25	DC.. VC..
		CTPX710					
		CTPX710					
		CTPX710					
		CTPX710					
-F23 (-F23) ▲ Fine finishing (ground edge) ▲ Very high surface quality ▲ High repeatability ▲ Low depths of cut	 F	**CTP2120 (CCN2120)**	**CTP2120 (CCN2120)**		 0,10–2,00	0,06–0,13	CC.. DC.. VC..
		CTP2120 (CCN2120)					
		CTP2120 (CCN2120)					
		CTP2120 (CCN2120)	**CTP2120 (CCN2120)**				

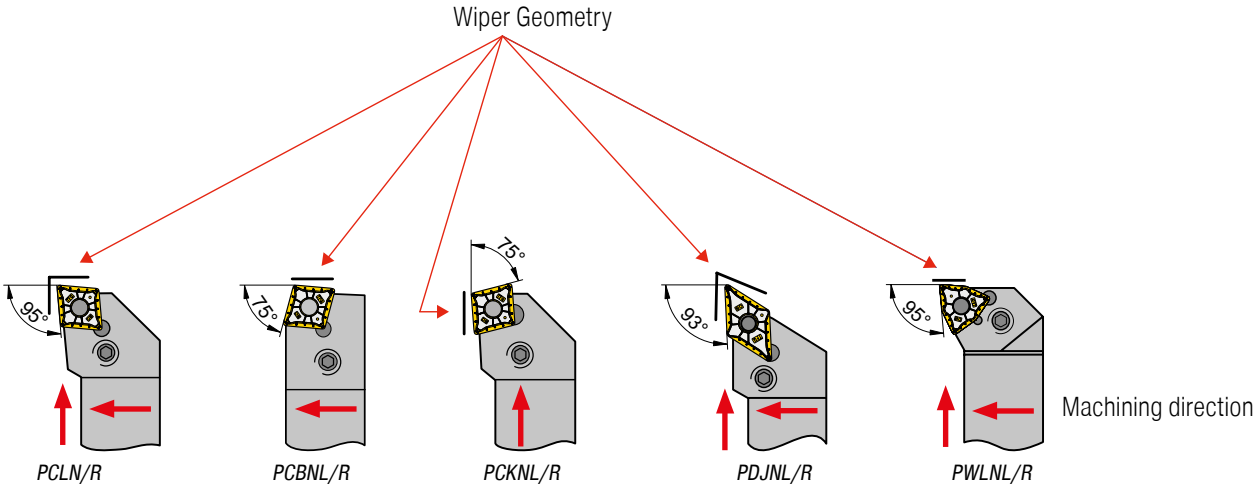
Supplementary chip breakers / application notes

Negative	Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌
-11 (-11) ▲ For copy machining in finishing operations ▲ On general steels, stainless steels and cast iron ▲ Can be used on less powerful machines	 **F**		**CTCP125 (HCX1125)**	**CTCP135 (HCR1135)**
-12 (-12) ▲ For copy machining in the medium machining range ▲ On general steels, stainless steels and cast iron	 **M**		**CTCP125 (HCX1125)**	**CTCP135 (HCR1135)**
-EN (-EN) ▲ Universal chip breaker for general steels	 **M**	**CTCP115 HCX1115** CTCP125 (HCX1125) **CTCK110 DCX3110**	**CTCP125 (HCX1125)** CTCP135 (HCR1135) **CTCK120 HCF3120**	**CTCP135 (HCR1135)** CTCP135 (HCR1135) CTCP125 (HCX1125)
-ER|EL (-ER|EL) ▲ A problem solver for unstable conditions ▲ Can be used on less powerful machines ▲ Can be used for general steels and on stainless materials as a secondary application	 **M**		**CTCP125 (HCX1125)**	**CTCP135 (HCR1135)**

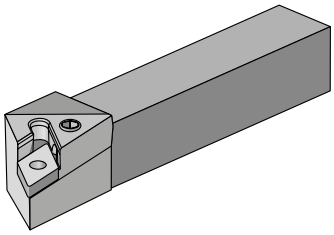
9

Masterfinish – wiper geometry – notes

Through the use of indexable inserts with wiper edge (-TFQ; -TMQ; -SMQ; -25Q) high quality surfaces can be produced economically.

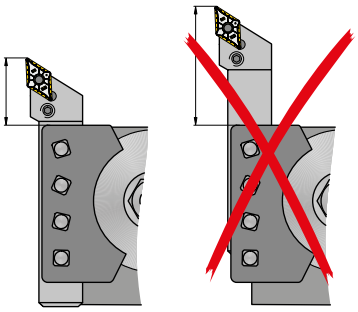


All turning inserts with wiper cutting edge are clamped in standard ISO tool holders

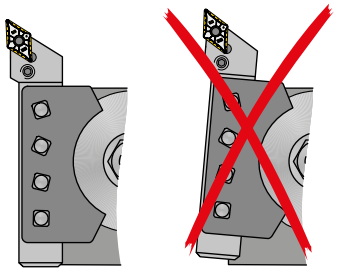


Check toolholder:

- Insert seat
- Shim
- Clamping Lever



Short tool overhang



Ensure correct tool alignment

Feed rate guide values for surface finish quality

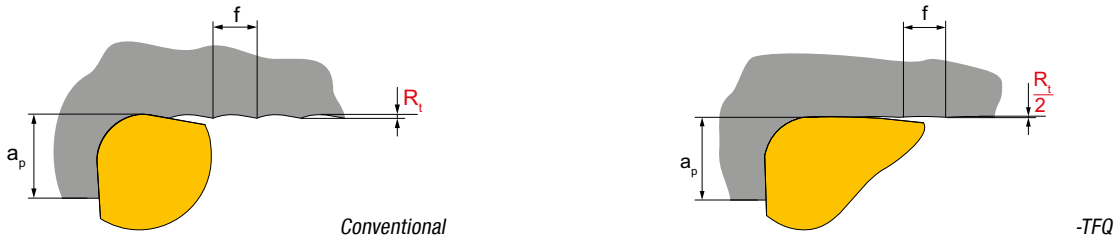
Roughness range R_z in µm	$R_{t\,max.}$	Corresponds to R_a	Roughness index	ISO 1302	Corner radius r_ε in mm and feed rate f in mm/rev.			
					r_ε = 0,4	r_ε = 0,8	r_ε = 1,2	r_ε = 1,6
63–100	R_t100	12,5–25	N11	25		0,51	0,69	0,88
40–63	R_t63	6,3–25	N10	12,5	0,27	0,43	0,56	0,68
31,5–40	R_t40	4,9–6,3	N9	6,3	0,25	0,37	0,49	0,57
25–31,5	R_t31,5	4,0–4,9			0,22	0,32	0,41	0,47
16–25	R_t25	2,5–4,0	N8	3,2	0,20	0,28	0,36	0,39
10–16	R_t16	1,6–2,5			0,15	0,22	0,29	0,31
6,3–10	R_t10	1,0–1,6	N7	1,6	0,10	0,13	0,18	0,20

Masterfinish – wiper geometry – functional principle

Relationship of feed rate to surface roughness

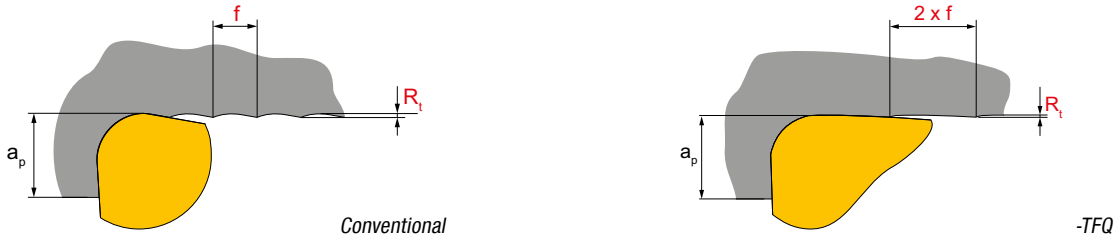
Improved Surface Quality

With the same feed rate an insert with wiper cutting edge reaches a roughness value R_t which is many times better than a conventional insert.



Shorter machining time

To achieve the same R_t-value as with a standard insert, double the feed rate can be applied for the insert with wiper cutting edge
(= shorter production time per component!))



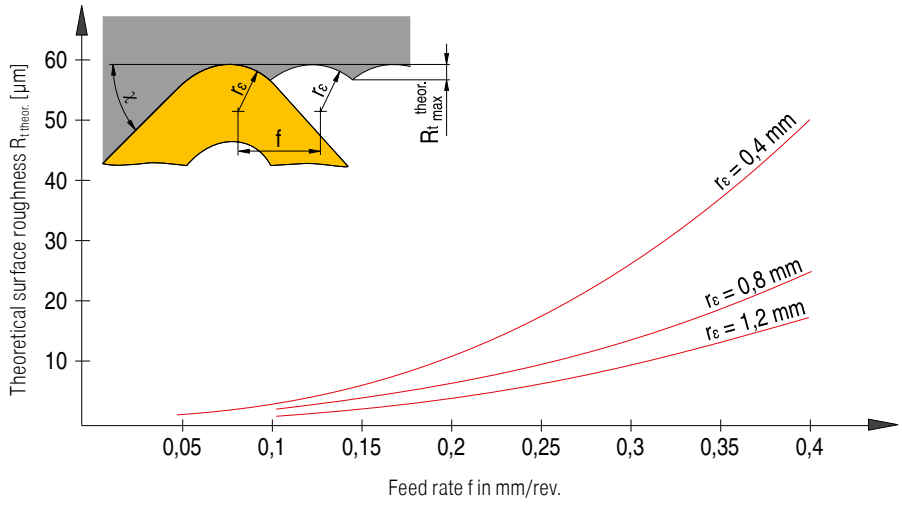
Theoretical Surface Quality

The maximum theoretical surface roughness with turning $Rt_{theor.}$ is the combination of feed rate and corner radius:

$$Rt_{theor.} = \left(r_\varepsilon - \sqrt{r_\varepsilon^2 - \frac{f^2}{4}}\right) \cdot 1000$$

or approximately:

$$Rt_{theor.} = \frac{125 \cdot f^2}{r\varepsilon} \quad [\mu m]$$



9

ISO designation system for inserts

Indexable inserts – metric

C	N	M	G	12	04	08	E	N	-	M50
1	2	3	4	5	6	7	8	9		13

Indexable inserts – inch

C	N	M	G	4	3	2	E	N	-	M50
1	2	3	4	5	6	7	8	9		13

Indexable inserts, CBN, ceramic – metric

C	N	G	A	12	04	08	S	N	-	020D	_	B	3	-	Q
1	2	3	4	5	6	7	8	9		10		11	12		13

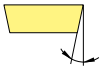
Indexable inserts, CBN, ceramic – inch

C	N	G	A	4	3	2	S	N	-	020D	_	B	3	-	Q
1	2	3	4	5	6	7	8	9		10		11	12		13

1 Insert shape

V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

2 Clearance angle



	α		α
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°		

O — Clearance angles not included within the standard for which particular information is necessary.

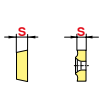
3 Tolerances



	IC±		BS		S	
	mm	inch	mm	inch	mm	inch
A	0,025	.0010	0,005	.0002	0,025	.001
F	0,013	.0005	0,005	.0002	0,025	.001
C	0,025	.0010	0,013	.0005	0,025	.001
H	0,013	.0005	0,013	.0005	0,025	.001
E	0,025	.0010	0,025	.0010	0,025	.001
G	0,025	.0010	0,025	.0010	0,13	.005
J	0,05-0,15*	.002-.006*	0,005	.0002	0,025	.001
K	0,05-0,15*	.002-.006*	0,013	.0005	0,025	.001
L	0,05-0,15*	.002-.006*	0,025	.0010	0,025	.001
M	0,05-0,15*	.002-.006*	0,05-0,20*	.003-.008*	0,13	.005
N	0,05-0,15*	.002-.006*	0,05-0,20*	.003-.008*	0,025	.001
U	0,08-0,25*	.003-.010*	0,13-0,38*	.005-.015*	0,13	.005

* Depends on insert size

6 Insert thickness



		Code	
mm	inch	mm	inch
1,59	1/16	01	1
2,38	3/32	02	
3,18	1/8	03	2
3,97	5/32	T3	
4,76	3/16	04	3
5,56	7/32	05	
6,35	1/4	06	4
7,94	5/16	07	5
9,52	3/8	09	6

7 Corner radius

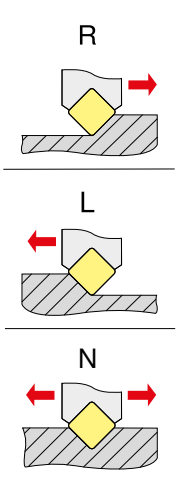


		Code		RN **00** RC **MO**
mm	inch	mm	inch	
≤ 0,05	.0015	00	X0	
0,1	.004	01	0	
0,2	.008	02	.5	
0,4	1/64	04	1	
0,8	1/32	08	2	
1,2	3/64	12	3	
1,6	1/16	16	4	
2,0	5/64	20	5	
2,4	3/32	24	6	
2,8	7/64	28	7	
3,2	1/8	32	8	

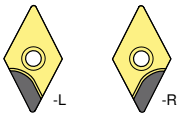
8 Cutting edge

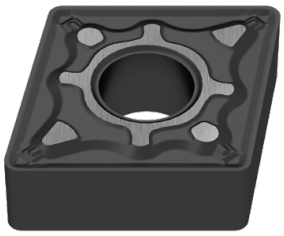
F	Sharp
E	Honed
T	Chamfered
S	Chamfered and honed
K	Double-chamfered
P	Double-chamfered and honed
R	Round chamfer

9 Direction of cut



CBN and PCD segment orientation





4 Characteristics

N	
R	
F	
A	
M, P	
G, P	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special version

inch

Change at inscribed circle IK < 1/4"

IK > 1/4"	IK < 1/4"
N / R / F	E
A / M / G	D
X	X

5 Cutting length

Type	ISO	ANSI	L mm	L inch	IC mm	IC inch
C	06	2	6,4	.250	6,35	.250
	09	3	9,7	.382	9,525	.375
	12	4	12,9	.508	12,70	.500
	16	5	16,1	.634	15,875	.625
	19	6	19,3	.760	19,05	.750
	25	8	25,8	1.016	25,4	1.000
	32	12	35,24	1.269	31,75	1.250
S	06	2	6,35	.250	6,35	.250
	09	3	9,525	.375	9,525	.375
	12	4	12,7	.500	12,7	.500
	15	5	15,875	.625	15,875	.625
	19	6	19,05	.750	19,05	.750
	25	8	25,4	1.000	25,4	1.000
	31	10	31,75	1.250	31,75	1.250
D	07	2	7,7	.303	6,35	.250
	11	3	11,6	.457	9,525	.375
	15	4	15,5	.610	12,70	.500
V	11	2	11,1	.437	6,35	.250
	16	3	16,6	.653	9,525	.375
	22	4	22,10	.870	12,70	.500

* inch version

Type	ISO	ANSI	L mm	L inch	IC mm	IC inch
T	06	1.2	6,9	.272	3,97	.156
	09	1.8	9,6	.378	5,56	.219
	11	2	11,0	.433	6,35	.250
	16	3	16,5	.650	9,525	.375
	22	4	22,	.079	12,70	.039
	27	5	27,5	1.083	15,875	.625
	33	6	33,0	1.299	19,05	.750
W	06	3	6,5	.256	9,525	.375
	08	4	8,7	.331	12,70	.039
	10	5	10,9	.429	15,875	.625
R	06	2	6,35	.250	6,35	.250
	08	-	8,0	.315	8,0	.315
	09	3	9,52	.375	9,52	.375
	10	-	10,0	.394	10,0	.394
	12*	-	12,0	.472	12,0	.472
	12	4	12,7	.488	12,70	.488
	15	5	15,875	.625	15,875	.625
	16	-	16,0	.630	16,0	.630
	19	6	19,05	.750	19,05	.750
	25	8	25,0	.984	25,0	.984
	25*	-	25,4	1.000	25,4	1.000
	31	10	31,75	1.250	31,75	1.250
	32	-	32,0	1.260	32,0	1.260

9

10 Chamfer type



T / S K / P [1]

	mm	inch		
015	0,15	.006	A	05°
020	0,20	.008	B	10°
025	0,25	.010	C	15°
050	0,50	.020	D	20°
075	0,75	.030	E	25°
100	1,00	.040	F	30°
			G	35°

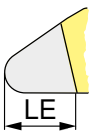
1) Two letters are assigned for double-chamfered cutting edges
e.g. BE =
chamfer angle 1 (y_1) = 10°
chamfer angle 2 (y_2) = 25°

11 Number of cutting edges

Single sided		Complete insert thickness	
A		T	
B		U	
C		V	
D		W	
G		X	
H		Y	

Double sided		Entire clamping flat	
K		S	
L		F	
M		E	
N			
P			
Q			

12 Segment length



Approx. specification in mm

13 Chip breaker designation

You can find a comprehensive chip breaker overview on
→ **page 168–175**

ISO designation system for tool holders

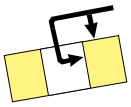
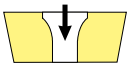
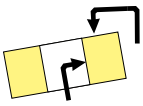
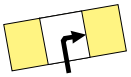
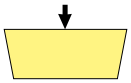
	P	C	L	N	R	20	20	K	12	- T
	1	2	3	4	5	6	7	8	9	10
UT50	- P	C	L	N	R				-12	
0	1	2	3	4	5	6	7	8	9	10
HSK-T63	- D	C	L	N	R				-12	
0	1	2	3	4	5	6	7	8	9	10

0 System/size

UT = UTS
according to ISO 26622
UT40 = UTS 40 mm
UT50 = UTS 50 mm
UT63 = UTS 63 mm

HSK-T
according to ISO 12164
HSK-T63 = 63 mm
HSK-T100 = 100 mm

1 Tool holder

D  Retained from above and via bore	**S**  Retained via centre screw
M  Retained from above and via bore	**P**  Retained via the bore
C  Retained from above	**X** Special version

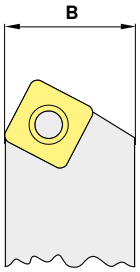
2 Insert shape

V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

6 Shank height

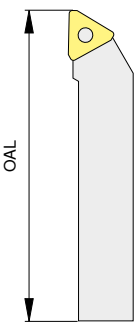


7 Shank width



8 Tool length

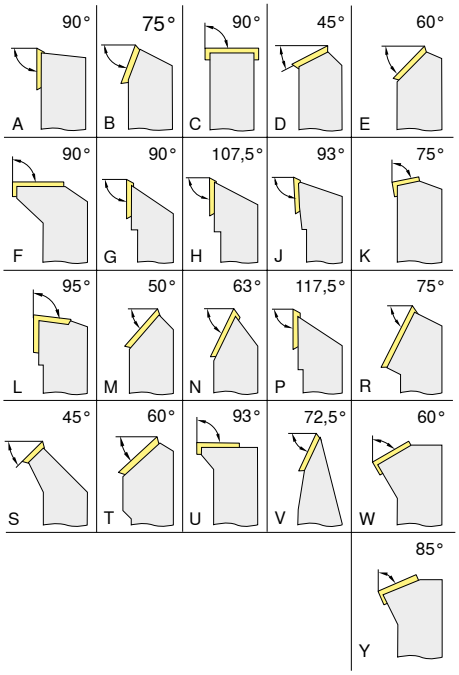
OAL mm	OAL inch		OAL mm	OAL inch	
32	4.000	**A**	160	4.500	**N**
40	4.500	**B**	170	5.500	**P**
50	5.000	**C**	180	–	**Q**
60	6.000	**D**	200	6.000	**R**
70	7.000	**E**	250	7.000	**S**
80	8.000	**F**	300	8.000	**T**
90	5.500	**G**	350	5.500	**U**
100	5.625	**H**	400	3.500	**V**
110	5.300	**J**	450	3.500	**W**
125	14.000	**K**	500	3.750	**Y**
140	6.800	**L**	Special version		**X**
150	4.400	**M**			





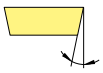
3

Style



4

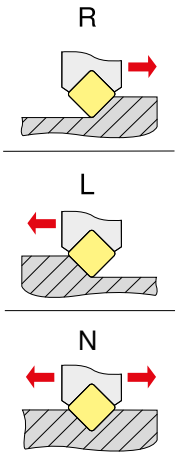
Clearance angle



	α		α
A	3°	**F**	25°
B	5°	**G**	30°
C	7°	**N**	0°
D	15°	**P**	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		

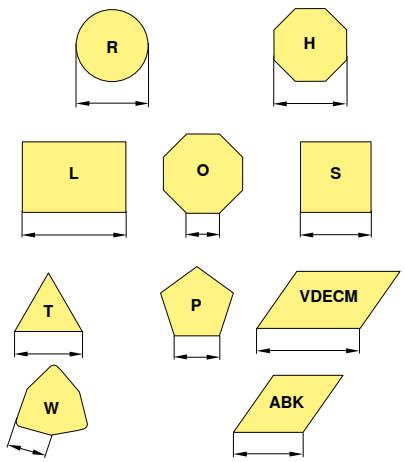
5

Direction of cut



9

Cutting length



10

Manufacturer specification

T = Toggle
Special length (mm)
Insert thickness (deviating from standard)
Special version (X..)
Machine manufacturer (specific)

ISO designation system for boring bars

		A	25	R		P	C	L	N	R	12	
		1	2	3		4	5	6	7	8	9	10
UT40	-		25	G	-	P	C	L	N	R	-	12
0		1	2	3		4	5	6	7	8	9	10
HSK-T63	-		50	Q	-	D	C	L	N	R	-	12
0		1	2	3		4	5	6	7	8	9	10

0 System/size

UT = UTS
according to ISO 26622
UT40 = UTS 40 mm
UT50 = UTS 50 mm
UT63 = UTS 63 mm

HSK-T
according to ISO 12164
HSK-T63 = 63 mm
HSK-T100 = 100 mm

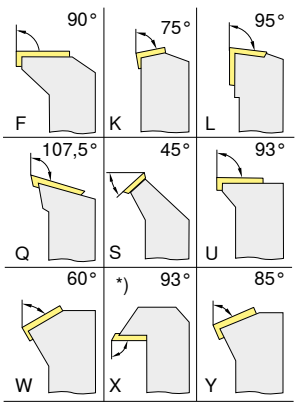
1 Shank type

S	Steel shank	**E**	As C with coolant hole
A	Steel shank with coolant hole	**F**	As C with antivibration system
B	Steel shank with antivibration system	**G**	As C with coolant hole and antivibration system
D	Steel shank with coolant hole and antivibration system	**H**	Heavy metal
C	Carbide shank with steel head	**J**	Heavy metal with coolant hole

5 Insert shape

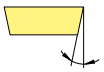
V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

6 Style



*) CERATIZIT factory standard

7 Clearance angle



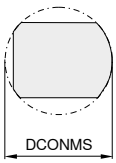
	α		α
A	3°	**F**	25°
B	5°	**G**	30°
C	7°	**N**	0°
D	15°	**P**	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		



2

Shank diameter

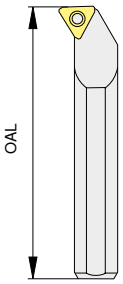
DCONMS mm	DCONMS inch
08	A two-digit figure indicating the boring bar diameter in 1/16 of an inch.
10	
12	
16	
20	
25	
32	
40	
50	
60	



3

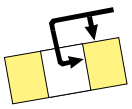
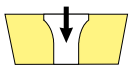
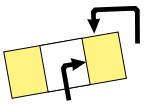
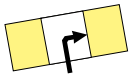
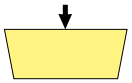
Tool length

OAL mm	OAL inch	
80	3	F
100	3,5	H
110	4	J
125	4,5	K
140	5	L
150	5,5	M
160	6	N
170	6,5	P
180	6,75	Q
200	7	R
250	8	S
300	10	T
350	12	U
400	14	V
450	16	W
500	18	Y
	20	
Special version		X



4

Clamping method

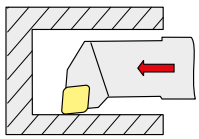
D  Retained from above and via bore	**S**  Retained via centre screw
M  Retained from above and via bore	**P**  Retained via the bore
C  Retained from above	**X** Special version

9

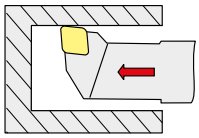
8

Direction of cut

R

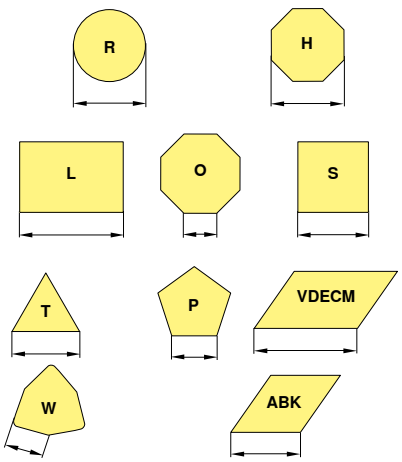


L



9

Cutting length



10

Manufacturer specification

T = Toggle
Special length (mm)
Insert thickness (deviating from standard)
Special version (X..)
Machine manufacturer (specific)

Types of wear

Wear on clearance face

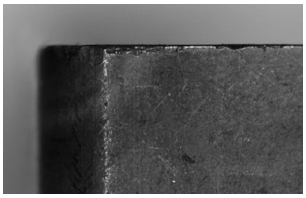


Abrasion on flank: normal wear after a certain machining time

Cause
- Too high cutting speed
- Carbide grade with too low wear resistance
- Feed rate not adapted

Remedy
- Reduce cutting speed
- Use grade with higher wear resistance
- Adapt feed rate to cutting speed and cutting depth

Edge chipping

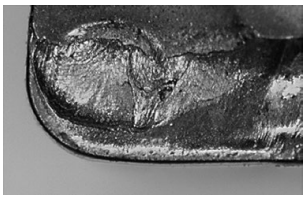


Through excessive mechanical stress at the cutting edge fracture and chipping can occur.

Cause
- Grade with too high wear resistance
- Vibration
- Too high cutting speed and / or feed rate
- Interrupted cut
- Swarf damage

Remedy
- Use tougher grade
- Use negative cutting edge geometry with chip groove
- Improve stability (tool, work piece)

Cratering

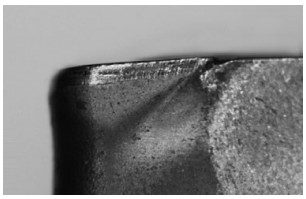


The hot chip which is being evacuated causes cratering at the rake face of the cutting edge.

Cause
- Too high cutting speed and / or feed rate
- Rake angle too shallow
- Grade with insufficient wear resistance
- Insufficient coolant supply

Remedy
- Reduce cutting speed and / or feed rate
- Use grade with higher wear resistance
- Increase coolant quantity and / or pressure, optimise coolant supply
- Use grade which is more resistant to cratering

Plastic deformation

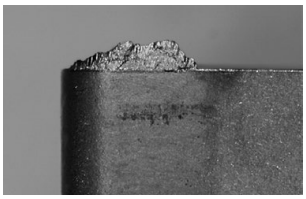


High machining temperature and simultaneous mechanical stress can lead to plastic deformation.

Cause
- Too high machining temperature resulting in softening of substrate
- Damage of coating
- Grade with insufficient wear resistance
- Insufficient coolant supply

Remedy
- Reduce cutting speed
- Use grade with higher wear resistance
- Provide cooling

Built-up edge

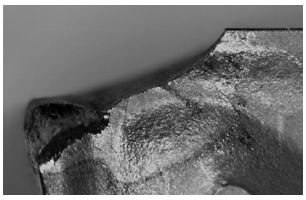


Built-up material / edges occur when the chip is not evacuated properly due to insufficient cutting temperature.

Cause
- Insufficient cutting speed
- Rake angle too shallow
- Wrong cutting material
- Lack of cooling / lubrication

Remedy
- Increase cutting speed
- Increase rake angle
- Apply TiN coating
- Use emulsion with higher concentration

Insert breakage

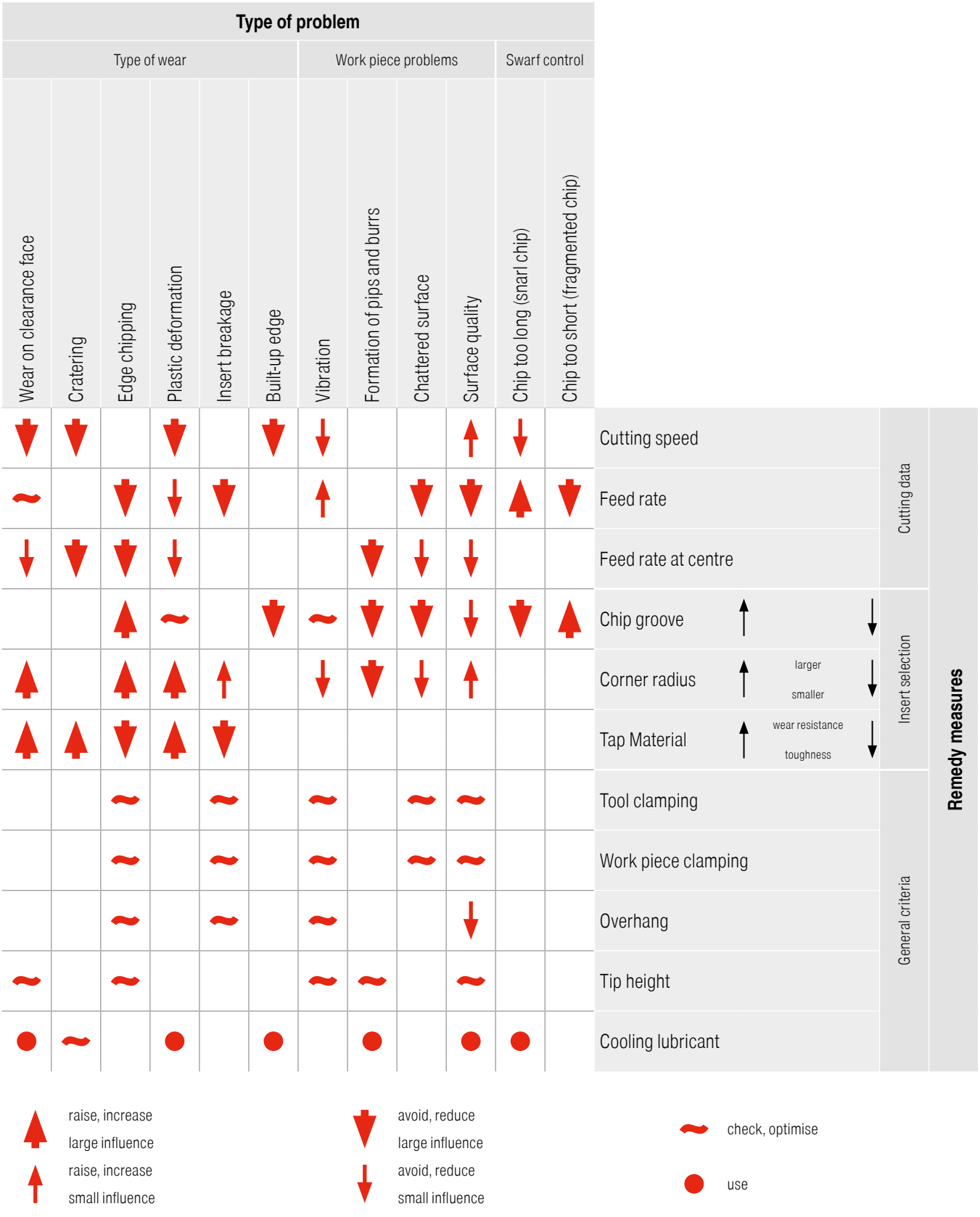


Excessive stress of the insert causes breakage.

Cause
- Excessive stress of cutting material
- Lack of stability
- Clearance angle too small

Remedy
- Use tougher grade
- Use protective edge chamfer
- Increase edge hone
- Use geometry with higher stability

Recommendation for Optimum Results



Grades Overview

	Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S
	Turning							
Main application: **Steel and cast iron**	CTEP110 (DCC1110)	HC-P10 HC-M10 HC-K05		●	○	○		
	CTCK110 (DCX3110)	HC-P05 HC-K10		●	○	●		
	CTCK120 (HCF3120)	HC-P10 HC-K20		●		●		
	CTCP115 (HCX1115)	HC-P15 HC-M10 HC-K25		●	○	○		
	CTCP125 (HCX1125)	HC-P25 HC-M20 HC-K30		●	○	○		
	CTCP135 (HCR1135)	HC-P35 HC-M25 HC-S25		●	○			○
Main application: **Stainless**	CWN2120	HC-M20 HC-N20			●		○	
	CTPM125 (HCN2125)	HC-P35 HC-M25		○	●			○
	CTC2135 (CWN2135)	HC-P35 HC-M20 HC-S20		○	●			●
Main application: **Non-ferrous metals**	H210T (CWK20)	HW-K10 HW-N10 HW-S10				○	●	○
	H216T (CWK26)	HW-K15 HW-N15 HW-S15				○	●	○
	H10T (CWK15)	HW-K15 HW-N15 HW-S15				○	●	○
	AMZ	HC-P15 HC-M15 HC-K20 HC-N20		○	○	○	●	
	CWN15	HC-M20 HC-N20			○		●	
Main application: **Heat-resistant**	CTPX710	HC-P10 HC-M10 HC-K10 HC-N10 HC-S15		●	●	○	○	●
	CTP5110 (HCN5110)	HC-N10 HC-S10			○			●
	CTP5115 (HCN5115)	HC-N15 HC-S15			○			●
	CTP2120 (CCN2120)	HC-P20 HC-M20 HC-K15 HC-N20 HC-S20			●	○	○	●

ISO application range: 01 05 10 15 20 25 30 35 40 45 50

● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c− tough

Grade description

TCM407 / CWC407
- Cermet, uncoated
- ISO | **P10** | M05 | K05
- The uncoated cermet grade for super-fine finishing steel materials

CTEP110 / DCC1110
- Cermet, TiCN-Al_2O_3-coated
- ISO | **P10** | M10 | K05
- The cermet grade with reserves of toughness for finish machining at high cutting speeds

TCM10 / CWC10
- Cermet, uncoated
- ISO | **P15** | **M10** | K10
- The uncoated cermet grade for finish machining stainless and hardened steel
- Particularly wear resistant thanks to high heat resistance

CTCP115 / HCX1115
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P15** | M10 | **K25**
- The wear-resistant high-performance grade for stable conditions and a continuous cut

CTCP125 / HCX1125
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P25** | M20 | **K30**
- The first choice for universal machining of steels

CTCP135 / HCR1135
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P35** | M25 | S25
- The tough alternative for heavily interrupted cut and unstable conditions

CTP2120 / CCN2120
- Carbide, TiAlN-coated
- ISO | **M20** | K20 | N20 | **S20**
- The universal carbide grade for stainless steel and super alloys

CWN2120 / CWN2120
- Carbide, TiN-coated
- ISO | **M20** | K20 | N20
- The universal carbide grade for machining stainless steel

CTPM125 / HCN2125
- ISO | **P35** | **M25** | S25
- The universal carbide grade with maximum toughness, without affecting the necessary hot hardness and wear resistance for stainless machining

CTC2135 / CWN2135
- Carbide, TiCN-TiNB-coated
- ISO | P35 | **M30** | S35
- The turning grade for general stainless machining

CTCK110 / DCX3110
- Carbide, TiCN-Al_2O_3-coated
- ISO | P05 | **K10**
- The wear-resistant grade for machining cast iron materials at high cutting speeds in a continuous cut

CTCK120 / HCF3120
- Carbide, TiCN-Al_2O_3-coated
- ISO | P10 | **K20**
- The grade for cast iron machining, with high toughness reserves for difficult conditions and interrupted cuts

H10T / CWK15
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals

H210T / CWK20
- Carbide, uncoated
- ISO | **N10** | **S10** | K10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

H216T / CWK26
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

CWN15 / CWN15
- Carbide, TiN-coated
- ISO | **K15**
- Special carbide grade for abrasive aluminium alloys

AMZ / AMZ
- Carbide, TiAlN-coated
- ISO | P10 | K10 | **N10** | S10
- The coated carbide grade for aluminium machining

CTP5110 / HCN5110
- Carbide, TiAlN-coated
- ISO | M15 | **S15**
- The alternative for machining heat-resistant materials

CTP5115 / HCN5115
- Carbide, TiAlN-TiN-coated
- ISO | M15 | **S15**
- The first choice for machining heat-resistant materials

CTPX710
- Carbide, AlTiN-coated
- ISO | **P10** | **M10** | K10 | N10 | **S15**
- Universal multi-material grade from the X7 line for highest machining requirements

Grade description

C	T	C	P	1	2	5
H	C	X	1	1	2	5

(Example)

Main application – material

1|P	Steel
2|M	Stainless steel
3|K	Cast iron
4|N	Light and non ferrous metals
5|S	Super alloys, titanium
6|H	Hard materials
7|X	Universal application

Application

1	Turning
2	Milling
3	Grooving
4	Drilling
5	Thread turning
6	Others
7	Several processes

Degree of hardness

05	ISO 05
10	ISO 10
15	ISO 15
	...

Programme Extension

EcoCut – Mini Ø 2–3.5 mm

DRAGONSKIN



→ Page 5

EcoCut adapter Mini



→ Page 6

EcoCut – Mini adapter with coolant connection thread



→ Page 7



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut 10
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Advantages with EcoCut	2
Toolfinder	3
Overview EcoCut Mini and EcoCut Inserts	4
Product programme	5–14
Technical Information	
EcoCut Mini Cutting Data	15+16
EcoCut Classic Cutting Data	17+18
EcoCut ProfileMaster Cutting Data	19+20
Cutting Data	21+22
EcoCut Classic chip breaker characteristics	23
EcoCut Classic as a Boring Tool	24
Application information	25–29
Grade overview and application	30+31

CERATIZIT \ Performance

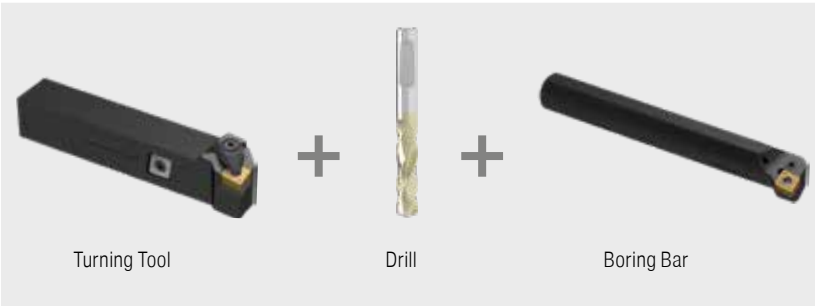
Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

More productive thanks to EcoCut – continous cost savings

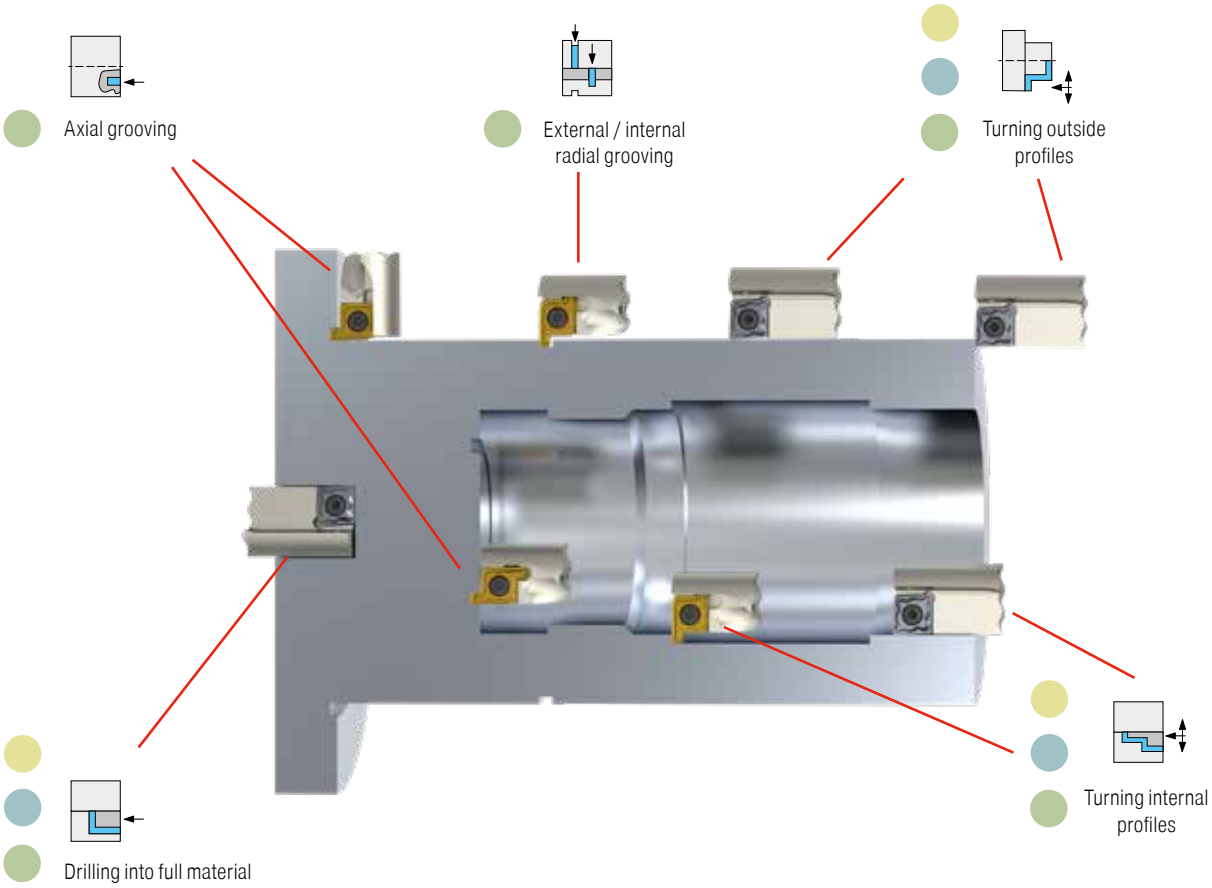
Advantages with EcoCut

- reduced machining time
- reduced need for tool positions
- generates flat bottom of hole
- less programming
- lower set-up costs / reduced setting time
- time savings due to fewer tool changes





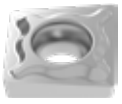
Toolfinder



	Tools:			Applications					Pages
	Dimension	Hole Ø mm	max. hole depth mm						
EcoCut Mini	2,25xD	2–8	4,5–18	✓	✓	✓			5
	4xD	2–8	8–32	✓	✓	✓			5
EcoCut Classic	1,5xD	8–32	12–48	✓	✓	✓			9
	2,25xD	8–32	18–72	✓	✓	✓			10
	3xD	8–32	24–96	✓	✓	✓			11
EcoCut ProfileMaster	1,5xD	10–32	15–48	✓	✓	✓	✓	✓	13
	2,25xD	10–32	22,5–72	✓	✓	✓	✓	✓	14
EcoCut HSK-T	2,25xD	25–32	56,2–72	✓	✓	✓			see → **Chapter 16, Adapters.**

EcoCut tools are suitable for off-centre drilling.
This permits certain deviations from the nominal tool diameter to be achieved → **For details, see the technical information.**

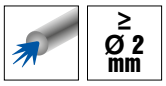
Overview EcoCut Mini and EcoCut Inserts

Type	Smooth cut	Irregular cutting depth	Interrupted cut	Grade	Steel	Stainless steel	Cast iron	Non ferrous metals	Heat resistant alloys	Tempered steel	Radius RE in mm	coated	uncoated	Pages
EcoCut Mini														
DRAGONSKIN 	○	◌	◌	CTPP435 / HCN1435	●	●	○		●		0,1–0,2	■		5
	○	◌	◌	CTWN425 / CWK4425			○	●			0,1–0,2		□	5
EcoCut Classic														
DRAGONSKIN 	○	◌	◌	CTCP425 / HCR1425	●	○	●				0,2–0,8	■		8
DRAGONSKIN 	○	◌	◌	CTCP435 / HCR1435	●	○	●				0,2–0,8	■		8
DRAGONSKIN 	○	◌	◌	CTPP430 / HCN2430	●	●	○	○	●		0,2–0,8	■		8
	○	◌	◌	H216T / CWK26				●	●		0,2–0,8		□	8
	○	◌	◌	H210T / CWK20			○	●	●		0,2–0,8		□	8
EcoCut ProfileMaster														
DRAGONSKIN 	○	◌	◌	CTPP430 / HCN2430	●	●	○	○	●		0,4	■		12

● = **Main Application**
○ = Extended application

EcoCut – Mini

▲ Drilling and turning tool for small diameters



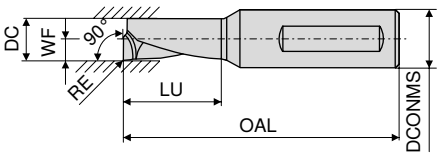
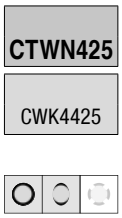
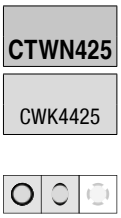


Diagram shows right hand version

















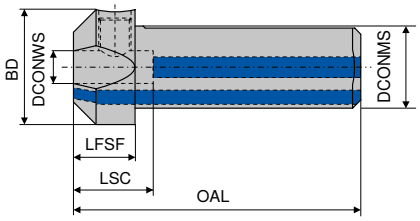
Designation	DC	DCONMS	OAL	LU	WF	RE	Solid carbide Left-hand 2B/20 Article no. 70 805 ...		Solid carbide Right-hand 2B/20 Article no. 70 804 ...		Solid carbide Left-hand 2B/20 Article no. 70 805 ...		Solid carbide Right-hand 2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
ECM 02 R/L 2,25D	2,0	4	28	4,50	1,00	0,1	50,96	320	50,96	320				
ECM 02 R/L 2,25D AL	2,0	4	28	4,50	1,00	0,1					44,93	420	44,93	420
ECM 02 R/L 4,00D	2,0	4	31	8,00	1,00	0,1	53,46	321	53,46	321				
ECM 02 R/L 4,00D AL	2,0	4	31	8,00	1,00	0,1					47,11	421	47,11	421
ECM 02,5 R/L 2,25D	2,5	4	29	5,63	1,25	0,1	52,52	325	52,52	325				
ECM 02,5 R/L 2,25D AL	2,5	4	29	5,63	1,25	0,1					46,28	425	46,28	425
ECM 02,5 R/L 4,00D	2,5	4	33	10,00	1,25	0,1	55,12	326	55,12	326				
ECM 02,5 R/L 4,00D AL	2,5	4	33	10,00	1,25	0,1					48,57	426	48,57	426
ECM 03 R/L 2,25D	3,0	4	31	6,75	1,50	0,1	54,18	330	54,18	330				
ECM 03 R/L 2,25D AL	3,0	4	31	6,75	1,50	0,1					47,74	430	47,74	430
ECM 03 R/L 4,00D	3,0	4	35	12,00	1,50	0,1	56,89	331	56,89	331				
ECM 03 R/L 4,00D AL	3,0	4	35	12,00	1,50	0,1					50,13	431	50,13	431
ECM 03,5 R/L 2,25D	3,5	4	32	7,88	1,75	0,1	56,26	335	56,26	335				
ECM 03,5 R/L 2,25D AL	3,5	4	32	7,88	1,75	0,1					49,61	435	49,61	435
ECM 03,5 R/L 4,00D	3,5	4	37	14,00	1,75	0,1	59,07	336	59,07	336				
ECM 03,5 R/L 4,00D AL	3,5	4	37	14,00	1,75	0,1					52,10	436	52,10	436
ECM 04 R/L 2,25D	4,0	6	35	9,00	2,00	0,2	59,75	300	59,75	300				
ECM 04 R/L 2,25D AL	4,0	6	35	9,00	2,00	0,2					52,64	450	52,64	450
ECM 04 R/L 4,00D	4,0	6	41	16,00	2,00	0,2	62,72	301	62,72	301				
ECM 04 R/L 4,00D AL	4,0	6	41	16,00	2,00	0,2					55,28	451	55,28	451
ECM 05 R/L 2,25D	5,0	6	37	11,25	2,50	0,2	61,82	302	61,82	302				
ECM 05 R/L 2,25D AL	5,0	6	37	11,25	2,50	0,2					54,12	452	54,12	452
ECM 05 R/L 4,00D	5,0	6	45	20,00	2,50	0,2	64,68	303	64,68	303				
ECM 05 R/L 4,00D AL	5,0	6	45	20,00	2,50	0,2					56,76	453	56,76	453
ECM 06 R/L 2,25D	6,0	8	38	13,50	3,00	0,2	63,42	306	63,42	306				
ECM 06 R/L 2,25D AL	6,0	8	38	13,50	3,00	0,2					55,96	456	55,96	456
ECM 06 R/L 4,00D	6,0	8	49	24,00	3,00	0,2	66,62	312	66,62	312				
ECM 06 R/L 4,00D AL	6,0	8	49	24,00	3,00	0,2					58,49	462	58,49	462
ECM 07 R/L 2,25D	7,0	8	42	15,75	3,50	0,2	65,37	308	65,37	308				
ECM 07 R/L 2,25D AL	7,0	8	42	15,75	3,50	0,2					57,68	458	57,68	458
ECM 07 R/L 4,00D	7,0	8	53	28,00	3,50	0,2	68,81	314	68,81	314				
ECM 07 R/L 4,00D AL	7,0	8	53	28,00	3,50	0,2					60,32	464	60,32	464
ECM 08 R/L 2,25D	8,0	8	45	18,00	4,00	0,2	67,54	310	67,54	310				
ECM 08 R/L 2,25D AL	8,0	8	45	18,00	4,00	0,2					59,29	460	59,29	460
ECM 08 R/L 4,00D	8,0	8	57	32,00	4,00	0,2	70,75	316	70,75	316				
ECM 08 R/L 4,00D AL	8,0	8	57	32,00	4,00	0,2					62,15	466	62,15	466

Steel	●	●		
Stainless steel	●	●		
Cast iron	○	○	○	○
Non ferrous metals			●	●
Heat resistant alloys	●	●		

→ v_c Page 22

10

EcoCut – Adapter Mini





2B/20

Designation	DCONWS	DCONMS	BD	OAL	LFSF	LSC	Article no. 70 800 ... EUR	
	mm	mm	mm	mm	mm	mm		
EC-ADX16-04	4	16,00	22	59,0	14	18	188,80	**716**
EC-ADX12-04-E	4	19,05	25	63,5	14	18	188,80	**719**
EC-ADX20-04	4	20,00	25	64,0	14	18	188,80	**720**
EC-ADX16-06	6	16,00	22	59,0	14	18	188,80	**976**
EC-ADX12-06-E	6	19,05	25	63,5	14	18	188,80	**986**
EC-ADX20-06	6	20,00	25	64,0	14	18	188,80	**996**
EC-ADX16-08	8	16,00	22	59,0	14	18	188,80	**978**
EC-ADX12-08-E	8	19,05	25	63,5	14	18	188,80	**988**
EC-ADX20-08	8	20,00	25	64,0	14	18	188,80	**998**

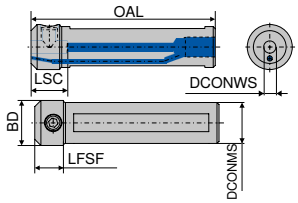
2A/28



Clamping screw

Spare parts for Article no.		Article no. 70 950 ... EUR	
70 800 716	M5x10 ISO 4026	2,98	**867**
70 800 719	M5x10 ISO 4026	2,98	**867**
70 800 720	M5x10 ISO 4026	2,98	**867**
70 800 976	M8x1x8 - SW4	2,98	**123**
70 800 986	M8x1x8 - SW4	2,98	**123**
70 800 996	M8x1x8 - SW4	2,98	**123**
70 800 978	M8x1x8 - SW4	2,98	**123**
70 800 988	M8x1x8 - SW4	2,98	**123**
70 800 998	M8x1x8 - SW4	2,98	**123**

EcoCut – Mini adapter with coolant connection thread





Designation	DCONWS	DCONMS	BD	OAL	LFSF	LSC		2B/20 Article no. 70 801 ...	
	mm	mm	mm	mm	mm	mm	Thread	EUR	
ECA 16-04	4	16,00	20,0	75	14	18	G 1/8	100,80	**716**
ECA 0750-04	4	19,05	20,0	100	14	18	G 1/8	102,90	**719**
ECA 20-04	4	20,00	19,6	90	14	18	G 1/8	102,90	**720**
ECA 22-04	4	22,00	21,6	110	14	18	G 1/8	106,00	**722**
ECA 25-04	4	25,00	24,6	110	14	18	G 1/8	107,00	**725**
ECA 1000-04	4	25,40	25,0	110	14	18	G 1/8	107,00	**726**
ECA 16-06	6	16,00	22,0	75	14	18	G 1/8	100,80	**816**
ECA 0750-06	6	19,05	22,0	100	14	18	G 1/8	102,90	**819**
ECA 20-06	6	20,00	22,0	90	14	18	G 1/8	102,90	**820**
ECA 22-06	6	22,00	21,6	110	14	18	G 1/8	106,00	**822**
ECA 25-06	6	25,00	24,6	110	14	18	G 1/8	107,00	**825**
ECA 1000-06	6	25,40	25,0	110	14	18	G 1/8	107,00	**826**
ECA 16-08	8	16,00	22,0	75	14	18	G 1/8	100,80	**916**
ECA 0750-08	8	19,05	22,0	100	14	18	G 1/8	102,90	**919**
ECA 20-08	8	20,00	22,0	90	14	18	G 1/8	102,90	**920**
ECA 22-08	8	22,00	21,6	110	14	18	G 1/8	106,00	**922**
ECA 25-08	8	25,00	24,6	110	14	18	G 1/8	107,00	**925**
ECA 1000-08	8	25,40	25,0	110	14	18	G 1/8	107,00	**926**

2A/28

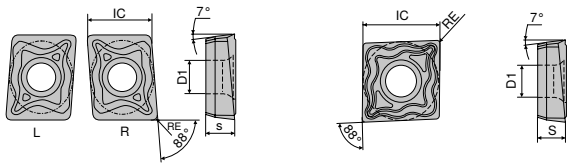


Clamping screw

Spare parts for Article no.		Article no. 70 950 ... EUR	
70 801 716	M5X8 - DIN 913	1,50	**13200**
70 801 719	M5X8 - DIN 913	1,50	**13200**
70 801 720	M5X8 - DIN 913	1,50	**13200**
70 801 722	M5X8 - DIN 913	1,50	**13200**
70 801 725	M5x10 ISO 4026	2,98	**867**
70 801 726	M5x10 ISO 4026	2,98	**867**
70 801 816	M8x1x8 - SW4	2,98	**123**
70 801 819	M8x1x8 - SW4	2,98	**123**
70 801 820	M8x1x8 - SW4	2,98	**123**
70 801 822	M8x1x8 - SW4	2,98	**123**
70 801 825	M8x1x8 - SW4	2,98	**123**
70 801 826	M8x1x8 - SW4	2,98	**123**
70 801 916	M8x1x8 - SW4	2,98	**123**
70 801 919	M8x1x8 - SW4	2,98	**123**
70 801 920	M8x1x8 - SW4	2,98	**123**
70 801 922	M8x1x8 - SW4	2,98	**123**
70 801 925	M8x1x8 - SW4	2,98	**123**
70 801 926	M8x1x8 - SW4	2,98	**123**

XCNT / XCET

Designation	S	D1	IC
	mm	mm	mm
XC.T 0401..	1,80	2,10	4,5
XC.T 0502..	2,10	2,25	5,8
XC.T 0602..	2,38	2,50	6,5
XC.T 0703..	3,18	2,80	7,6
XC.T 0803..	3,18	3,40	8,5
XC.T 09T3..	3,97	3,40	9,6
XC.T 10T3..	3,97	4,40	10,6
XC.T 1304..	4,76	5,30	13,5
XC.T 1705..	5,56	5,30	17,5



XCNT / XCET

	CTCP425	-M50Q CTCP425	CTCP435	CTPP430	-27P H216T	-27Q H210T
	HCR1425	-M50Q HCR1425	HCR1435	HCN2430	-ALP CWK26	-ALQ CWK20
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
						
	XCNT 1D/19	XCNT 1D/19	XCNT 1D/19	XCNT 1D/19	XCET 1D/19	XCET 1D/19
ISO	RE	Article no. 70 386 ...	Article no. 70 386 ...	Article no. 70 386 ...	Article no. 70 386 ...	Article no. 70 286 ...	Article no. 70 286 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR
040102EL	0,2	15,48 720		15,48 820	15,48 920		
040102ER	0,2	15,48 722		15,48 822	15,48 922		
040102FL	0,2					17,32 620	18,01 120
040102FR	0,2					17,32 622	18,01 122
040104EL	0,4	15,48 700	16,15 750	15,48 800	15,48 900		
040104ER	0,4	15,48 702	16,15 752	15,48 802	15,48 902		
040104FL	0,4					17,32 600	18,01 100
040104FR	0,4					17,32 602	18,01 102
050202EN	0,2	15,48 723		15,48 823	15,48 923		
050202FN	0,2					17,32 623	18,01 123
050204EN	0,4	15,48 703	16,15 753	15,48 803	15,48 903		
050204FN	0,4					17,32 603	18,01 103
060202EN	0,2	15,48 724		15,48 824	15,48 924		
060202FN	0,2					17,32 624	18,01 124
060204EN	0,4	15,48 704	16,15 754	15,48 804	15,48 904		
060204FN	0,4					17,32 604	18,01 104
070304EN	0,4	15,48 705	16,15 755	15,48 805	15,48 905		
070304FN	0,4					17,32 605	18,01 105
080304EN	0,4	15,71 706	16,40 756	15,71 806	15,71 906		
080304FN	0,4					17,56 606	18,23 106
09T304EN	0,4	15,94 707	16,74 757	15,94 807	15,94 907		
09T304FN	0,4					17,66 607	18,35 107
10T304EN	0,4	16,74 708	17,43 758	16,74 808	16,74 908		
10T304FN	0,4					18,01 608	18,93 108
10T308EN	0,8	16,74 738	17,43 788	16,74 838	16,74 938		
10T308FN	0,8					18,01 628	18,93 128
130404EN	0,4	19,15 710	20,06 760	19,15 810	19,15 910		
130404FN	0,4					22,03 610	22,93 110
130408EN	0,8	19,15 740	20,06 790	19,15 840	19,15 940		
130408FN	0,8					22,03 611	22,93 111
170508EN	0,8	20,19 712	21,22 762	20,19 812	20,19 912		
170508FN	0,8					22,35 612	23,50 112
Steel		●	●	●	●		
Stainless steel		○	○	○	●		
Cast iron		●	●	●	○	●	●
Non ferrous metals					○	●	●
Heat resistant alloys					●		●

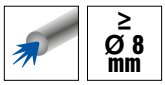
→ v_c Page 22

EcoCut – Classic 1.5xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver



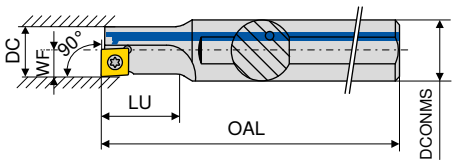


Diagram shows right hand version



Left-hand



Right-hand

Designation	DC	DCONMS	OAL	LU	WF	torque moment	Insert	2B/20 Article no. 70 805 ...		2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
ECC 08 L 1,5D 04	8	12	80	12,0	4,0	0,4	XC.T 0401..EL	159,10	**008** [2]		
ECC 08 R 1,5D 04	8	12	80	12,0	4,0	0,4	XC.T 0401..ER			159,10	**008** [1]
ECC 10 R/L 1,5D 05	10	12	90	15,0	5,0	0,7	XC.T 0502..	159,10	**010**	159,10	**010**
ECC 12 R/L 1,5D 06	12	16	100	18,0	6,0	1,0	XC.T 0602..	161,70	**012**	161,70	**012**
ECC 14 R/L 1,5D 07	14	16	110	21,0	7,0	1,2	XC.T 0703..	165,60	**014**	165,60	**014**
ECC 16 R/L 1,5D 08	16	20	125	24,0	8,0	2,2	XC.T 0803..	168,20	**016**	168,20	**016**
ECC 18 R/L 1,5D 09	18	25	135	27,0	9,0	2,2	XC.T 09T3..	194,00	**018**	194,00	**018**
ECC 20 R/L 1,5D 10	20	25	150	30,0	10,0	3,2	XC.T 10T3..	218,70	**020**	218,70	**020**
ECC 25 R/L 1,5D 13	25	32	180	37,5	12,5	5,0	XC.T 1304..	252,20	**025**	252,20	**025**
ECC 32 R/L 1,5D 17	32	40	200	48,0	16,0	5,0	XC.T 1705..	285,90	**032**	285,90	**032**

1) Note! Right-hand insert on right-hand tool → **Page 26**
2) Note! Left-hand insert on left-hand tool → **Page 26**

10

Y7



Key D

2A/28



Clamping screw

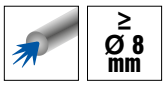
Spare parts for Article no.		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
70 805 008	T06 - IP	10,39	**123**	M1,8x3,6 - IP	3,68	**862**
70 804 008	T06 - IP	10,39	**123**	M1,8x3,6 - IP	3,68	**862**
70 805 010 / 70 804 010	T06 - IP	10,39	**123**	M2x4,3 - IP	3,28	**863**
70 805 012 / 70 804 012	T07 - IP	10,22	**124**	M2,2x5 - IP	3,18	**856**
70 805 014 / 70 804 014	T08 - IP	10,20	**125**	M2,5x6 - IP	4,09	**857**
70 805 016 / 70 804 016	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**
70 805 018 / 70 804 018	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**
70 805 020 / 70 804 020	T15 - IP	11,89	**128**	M3,5x8,6 - IP	3,14	**859**
70 805 025 / 70 804 025	T20 - IP	12,54	**129**	M4,5x10,5 - IP	3,14	**864**
70 805 032 / 70 804 032	T20 - IP	12,54	**129**	M4,5x10,5 - IP	3,14	**864**

EcoCut – Classic 2.25xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver



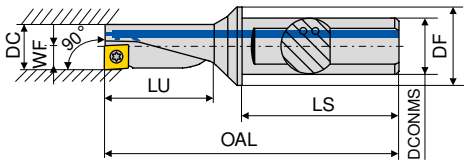


Diagram shows right hand version



Designation	DC	DCONMS	DF	OAL	LU	LS	WF	torque moment	Insert	Left-hand 2B/20 Article no. 70 805 ...		Right-hand 2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
ECC 08 L 2,25D 04	8	10	12	60,0	18,0	38	4,0	0,4	XC.T 0401..EL	236,70	108 [2]		
ECC 08 R 2,25D 04	8	10	12	60,0	18,0	38	4,0	0,4	XC.T 0401..ER			236,70	108 [1]
ECC 10 R/L 2,25D 05	10	12	16	69,5	22,5	42	5,0	0,7	XC.T 0502..	236,70	110	236,70	110
ECC 12 R/L 2,25D 06	12	16	20	78,0	27,0	45	6,0	1,0	XC.T 0602..	243,20	112	243,20	112
ECC 14 R/L 2,25D 07	14	16	20	83,5	31,5	45	7,0	1,2	XC.T 0703..	248,50	114	248,50	114
ECC 16 R/L 2,25D 08	16	20	25	94,0	36,0	50	8,0	2,2	XC.T 0803..	253,70	116	253,70	116
ECC 18 R/L 2,25D 09	18	25	32	109,5	40,5	56	9,0	2,2	XC.T 09T3..	279,50	118	279,50	118
ECC 20 R/L 2,25D 10	20	25	32	111,0	45,0	56	10,0	3,2	XC.T 10T3..	304,20	120	304,20	120
ECC 25 R/L 2,25D 13	25	32	40	129,0	56,5	60	12,5	5,0	XC.T 1304..	353,20	125	353,20	125
ECC 32 R/L 2,25D 17	32	40	50	158,0	72,0	70	16,0	5,0	XC.T 1705..	397,10	132	397,10	132

1) Note! Right-hand insert on right-hand tool → **Page 26**
2) Note! Left-hand insert on left-hand tool → **Page 26**



Key D



Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
70 805 108	T06 - IP	10,39	123	M1,8x3,6 - IP	3,68	862
70 804 108	T06 - IP	10,39	123	M1,8x3,6 - IP	3,68	862
70 805 110 / 70 804 110	T06 - IP	10,39	123	M2x4,3 - IP	3,28	863
70 805 112 / 70 804 112	T07 - IP	10,22	124	M2,2x5 - IP	3,18	856
70 805 114 / 70 804 114	T08 - IP	10,20	125	M2,5x6 - IP	4,09	857
70 805 116 / 70 804 116	T09 - IP	11,24	126	M3x7 - IP	3,14	819
70 805 118 / 70 804 118	T09 - IP	11,24	126	M3x7 - IP	3,14	819
70 805 120 / 70 804 120	T15 - IP	11,89	128	M3,5x8,6 - IP	3,14	859
70 805 125 / 70 804 125	T20 - IP	12,54	129	M4,5x10,5 - IP	3,14	864
70 805 132 / 70 804 132	T20 - IP	12,54	129	M4,5x10,5 - IP	3,14	864

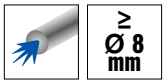
The EcoCut Classic 2.25xD is also available as a Monoblock HSK-T version. See → **Chapter 16, Adapters.**

EcoCut – Classic 3xD – Heavy metal

- ▲ Drilling and turning tool
- ▲ vibration-damped

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver



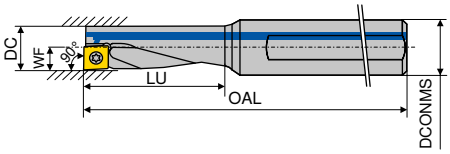


Diagram shows right hand version



Left-hand



Right-hand

Designation	DC	DCONMS	OAL	LU	WF	torque moment	Insert	2B/20 Article no. 70 805 ...		2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	Nm		EUR		EUR	
ECC 08 L 3,00D 04 H	8	12	80	24	4,0	0,4	XC.T 0401..EL	583,70	**608** [2]		
ECC 08 R 3,00D 04 H	8	12	80	24	4,0	0,4	XC.T 0401..ER			583,70	**608** [1]
ECC 10 R/L 3,00D 05 H	10	12	85	30	5,0	0,7	XC.T 0502..	586,30	**610**	586,30	**610**
ECC 12 R/L 3,00D 06 H	12	16	95	36	6,0	1,0	XC.T 0602..	632,80	**612**	632,80	**612**
ECC 14 R/L 3,00D 07 H	14	16	100	42	7,0	1,2	XC.T 0703..	647,50	**614**	647,50	**614**
ECC 16 R/L 3,00D 08 H	16	20	110	48	8,0	2,2	XC.T 0803..	710,00	**616**	710,00	**616**
ECC 18 R/L 3,00D 09 H	18	25	125	54	9,0	2,2	XC.T 09T3..	859,50	**618**	859,50	**618**
ECC 20 R/L 3,00D 10 H	20	25	130	60	10,0	3,2	XC.T 10T3..	876,90	**620**	876,90	**620**
ECC 25 R/L 3,00D 13 H	25	32	150	75	12,5	5,0	XC.T 1304..	1.117,00	**625**	1.117,00	**625**
ECC 32 R/L 3,00D 17 H	32	40	185	96	16,0	5,0	XC.T 1705..	1.462,00	**632**	1.462,00	**632**

1) Note! Right-hand insert on right-hand tool → **Page 26**
2) Note! Left-hand insert on left-hand tool → **Page 26**

10

Y7



Key D

2A/28

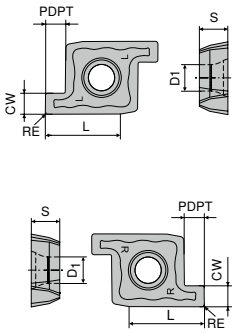


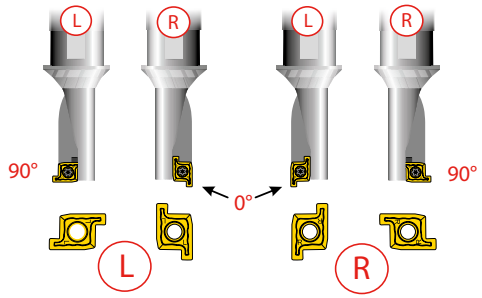
Clamping screw

Spare parts for Article no.		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
70 805 608	T06 - IP	10,39	**123**	M1,8x3,6 - IP	3,68	**862**
70 804 608	T06 - IP	10,39	**123**	M1,8x3,6 - IP	3,68	**862**
70 805 610 / 70 804 610	T06 - IP	10,39	**123**	M2x4,3 - IP	3,28	**863**
70 805 612 / 70 804 612	T07 - IP	10,22	**124**	M2,2x5 - IP	3,18	**856**
70 805 614 / 70 804 614	T08 - IP	10,20	**125**	M2,5x6 - IP	4,09	**857**
70 805 616 / 70 804 616	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**
70 805 618 / 70 804 618	T09 - IP	11,24	**126**	M3x7 - IP	3,14	**819**
70 805 620 / 70 804 620	T15 - IP	11,89	**128**	M3,5x8,6 - IP	3,14	**859**
70 805 625 / 70 804 625	T20 - IP	12,54	**129**	M4,5x10,5 - IP	3,14	**864**
70 805 632 / 70 804 632	T20 - IP	12,54	**129**	M4,5x10,5 - IP	3,14	**864**

PM-R / PM-L

Designation	CW	PDPT	L	S	D1
	mm	mm	mm	mm	mm
PM 10 G 201504	2,0	1,5	5,0	2,10	2,1
PM 12 G 201804	2,0	1,8	6,0	2,30	2,5
PM 16 G 252004	2,5	2,0	8,0	2,80	3,4
PM 20 G 302504	3,0	2,5	10,0	3,70	4,0
PM 25 G 353004	3,5	3,0	12,5	4,50	4,4
PM 32 G 404004	4,0	4,0	16,0	5,60	6,0





PM-R / PM-L

	-M20 CTPP430	-M20 CTPP430
	-M20 HCN2430	-M20 HCN2430
	DRAGONSKIN	DRAGONSKIN
		
	PM-R	PM-L
	1F/P2	1F/P2
ISO / RE	Article no. 70 289 ...	Article no. 70 289 ...
mm	EUR	EUR
PM 10 G 201504 0,4	16,66 511	16,66 510
PM 12 G 201804 0,4	16,80 516	16,80 515
PM 16 G 252004 0,4	17,00 521	17,00 520
PM 20 G 302504 0,4	17,79 526	17,79 525
PM 25 G 353004 0,4	19,80 531	19,80 530
PM 32 G 404004 0,4	21,37 536	21,37 535
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●

→ v_c Page 22

EcoCut – ProfileMaster 1.5xD

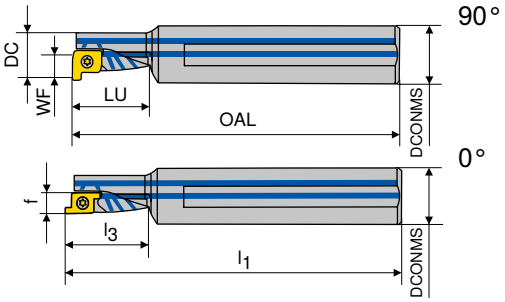
▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver







Diagrams show right hand versions



Designation	DC	DCONMS	OAL	LU	WF	l_1 (0°)	l_3 (0°)	f (0)°	torque moment	Insert	Left-hand 2G/P1 Article no. 70 821 ...		Right-hand 2G/P1 Article no. 70 820 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PMC 10 R/L 1,5D	10	12	80	15,0	5,0				0,4	PM 10R/L	171,50	**010** 1)	171,50	**010** 1)
PMC 12 R/L 1,5D	12	16	90	18,0	6,0				1,0	PM 12R/L	177,80	**012** 1)	177,80	**012** 1)
PMC 16 R/L 1,5D	16	20	125	24,0	8,0	127,3	26,3	5,7	2,2	PM 16R/L	188,10	**016**	188,10	**016**
PMC 20 R/L 1,5D	20	25	150	30,0	10,0	152,8	32,8	7,2	2,2	PM 20R/L	232,10	**020**	232,10	**020**
PMC 25 R/L 1,5D	25	32	180	37,5	12,5	183,3	40,8	9,2	3,2	PM 25R/L	263,80	**025**	263,80	**025**
PMC 32 R/L 1,5D	32	40	200	48,0	16,0	204,3	52,3	11,7	5,0	PM 32R/L	301,70	**032**	301,70	**032**

1) only usable as 90° version

10

Spare parts	Y7  Key D			2A/28  Clamping screw		
		Article no. 80 950 ...			Article no. 70 950 ...	
for Article no.		EUR			EUR	
70 820 010 / 70 821 010	T06 - IP	10,39	**123**	M1,8x3,6 - IP	3,68	**862**
70 820 012 / 70 821 012	T07 - IP	10,22	**124**	M2,2x4,2 - IP	3,18	**137**
70 820 016 / 70 821 016	T09 - IP	11,24	**126**	M3x5,7 - IP	3,14	**008**
70 820 020 / 70 821 020	T15 - IP	11,89	**128**	M3x5,7 - IP	3,14	**009**
70 820 025 / 70 821 025	T15 - IP	11,89	**128**	M3,5x8,6 - IP	3,14	**859**
70 820 032 / 70 821 032	T20 - IP	12,54	**129**	M5x10,8 - IP	8,16	**010**

EcoCut – ProfileMaster 2.25xD

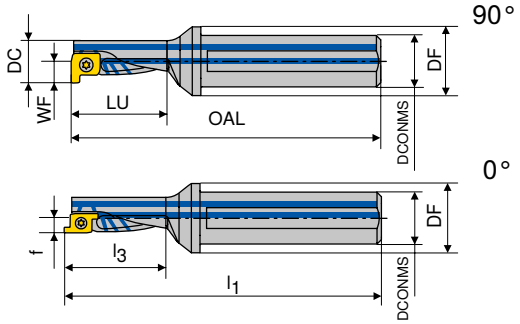
▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver







Diagrams show right hand versions



Designation	DC	DCONMS	DF	OAL	LU	WF	l_1 (0°)	l_3 (0°)	f (0)°	torque moment	Insert	Left-hand 2G/P1 Article no. 70 821 ...		Right-hand 2G/P1 Article no. 70 820 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
PMC 10 R/L 2,25D	10	12	18	72,4	22,5	5,0				0,4	PM 10R/L	252,30	**110** [1]	252,30	**110** [1]
PMC 12 R/L 2,25D	12	16	22	78,0	27,0	6,0				1,0	PM 12R/L	257,60	**112** [1]	257,60	**112** [1]
PMC 16 R/L 2,25D	16	20	28	96,5	36,0	8,0	98,8	38,3	5,7	2,2	PM 16R/L	271,40	**116**	271,40	**116**
PMC 20 R/L 2,25D	20	25	35	111,0	45,0	10,0	113,8	47,8	7,2	2,2	PM 20R/L	324,30	**120**	324,30	**120**
PMC 25 R/L 2,25D	25	32	44	132,6	56,3	12,5	135,9	59,6	9,2	3,2	PM 25R/L	372,40	**125**	372,40	**125**
PMC 32 R/L 2,25D	32	40	54	158,0	72,0	16,0	162,3	76,3	11,7	5,0	PM 32R/L	417,80	**132**	417,80	**132**

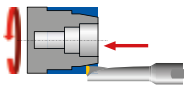
1) only usable as 90° version

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 820 110 / 70 821 110	T06 - IP	10,39 **123**	M1,8x3,6 - IP	3,68 **862**
70 820 112 / 70 821 112	T07 - IP	10,22 **124**	M2,2x4,2 - IP	3,18 **137**
70 820 116 / 70 821 116	T09 - IP	11,24 **126**	M3x5,7 - IP	3,14 **008**
70 820 120 / 70 821 120	T15 - IP	11,89 **128**	M3x5,7 - IP	3,14 **009**
70 820 125 / 70 821 125	T15 - IP	11,89 **128**	M3,5x8,6 - IP	3,14 **859**
70 820 132 / 70 821 132	T20 - IP	12,54 **129**	M5x10,8 - IP	8,16 **010**

Depth of cut and feed rate for EcoCut Mini

Turning

2.25xD

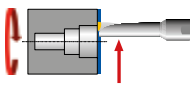


EcoCut Mini Size	Depth of cut a_p in mm									
	0,25	0,5	0,75	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.									
ECM 02..	0,02–0,07	0,02–0,07								
ECM 02,5..	0,02–0,07	0,02–0,07	0,02–0,05							
ECM 03..	0,02–0,07	0,02–0,07	0,02–0,05	0,02–0,05						
ECM 03,5..	0,02–0,07	0,02–0,07	0,02–0,05	0,02–0,05	0,02–0,05					
ECM 04..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,07	0,01–0,05				
ECM 05..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04			
ECM 06..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04		
ECM 07..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04	
ECM 08..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04

4xD

EcoCut Mini Size	Depth of cut a_p in mm									
	0,25	0,5	0,75	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.									
ECM 02..	0,02–0,05	0,01–0,05								
ECM 02,5..	0,02–0,05	0,01–0,05								
ECM 03..	0,02–0,05	0,02–0,05	0,01–0,05							
ECM 03,5..	0,02–0,05	0,02–0,05	0,02–0,05	0,01–0,05						
ECM 04..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,01–0,05					
ECM 05..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,085	0,02–0,06	0,01–0,04				
ECM 06..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,085	0,02–0,06	0,01–0,04				
ECM 07..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04			
ECM 08..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,095	0,03–0,8	0,02–0,06	0,01–0,04		

Face turning

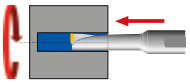


EcoCut Mini Size	2,25xD		4xD	
	$a_{p\,max.}$ in mm	f in mm/rev.	$a_{p\,max.}$ in mm	f in mm/rev.
ECM 02..	0,30	0,01–0,05	0,30	0,01–0,03
ECM 02,5..	0,30	0,01–0,05	0,30	0,01–0,03
ECM 03..	0,50	0,01–0,06	0,50	0,01–0,04
ECM 03,5..	0,50	0,01–0,06	0,50	0,01–0,04
ECM 04..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 05..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 06..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 07..	1,00	0,04–0,08	1,00	0,03–0,06
ECM 08..	1,00	0,04–0,08	1,00	0,03–0,06

Depth of cut and feed rate for EcoCut Mini

Drilling

Feed rate



EcoCut Mini Size	2,25xD	4xD
	f in mm/rev.	f in mm/rev.
ECM 02..	0,0025–0,0075	0,0025–0,005
ECM 02,5..	0,0025–0,010	0,0025–0,005
ECM 03..	0,0025–0,0125	0,0025–0,010
ECM 03,5..	0,0025–0,0150	0,0025–0,010
ECM 04..	0,005–0,030	0,005–0,0125
ECM 05..	0,005–0,030	0,005–0,015
ECM 06..	0,005–0,030	0,005–0,020
ECM 07..	0,005–0,035	0,005–0,025
ECM 08..	0,005–0,040	0,005–0,030

max. bore depth

EcoCut Mini Size	2,25xD	4xD
	Max. hole depth in mm	Max. hole depth in mm
ECM 02..	4,50	8,0
ECM 02,5..	5,63	10,0
ECM 03..	6,75	12,0
ECM 03,5..	7,88	14,0
ECM 04..	9,0	16,0
ECM 05..	11,25	20,0
ECM 06..	13,5	24,0
ECM 07..	15,75	28,0
ECM 08..	18,0	32,0

Depth of cut and feed rate for EcoCut Classic

Turning

1.5xD



EcoCut Classic Size	Depth of cut a_p in mm											
	1	2	3	4	5	6	7	8	9	10	12	14
	Feed rate f in mm/rev.											
ECC 08	0,06–0,12	0,06–0,12	0,04–0,10	0,02–0,08								
ECC 10	0,07–0,15	0,07–0,15	0,05–0,13	0,04–0,11	0,02–0,09							
ECC 12	0,08–0,16	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12	0,02–0,10						
ECC 14	0,09–0,18	0,09–0,18	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,02–0,11					
ECC 16	0,10–0,20	0,10–0,20	0,10–0,20	0,10–0,20	0,08–0,18	0,06–0,16	0,04–0,14	0,02–0,12				
ECC 18	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,05–0,16	0,03–0,13			
ECC 20	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,11–0,23	0,09–0,21	0,07–0,19	0,05–0,17	0,03–0,15		
ECC 25	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,11–0,24	0,09–0,22	0,07–0,20	0,03–0,16	
ECC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,14–0,30	0,15–0,30	0,15–0,30	0,13–0,28	0,11–0,26	0,07–0,22	0,03–0,18

Feed f may be increased by 50–75 % when using M50Q and ALQ.

2.25xD

EcoCut Classic Size	Depth of cut a_p in mm										
	1,0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0
	Feed rate f in mm/rev.										
ECC 08	0,06–0,12	0,04–0,10	0,02–0,08								
ECC 10	0,07–0,15	0,05–0,13	0,03–0,11	0,02–0,09							
ECC 12	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12	0,02–0,10						
ECC 14	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,04–0,13	0,02–0,11					
ECC 16	0,10–0,20	0,10–0,20	0,09–0,19	0,07–0,17	0,05–0,15	0,03–0,13					
ECC 18	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,05–0,16	0,03–0,14				
ECC 20	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,10–0,22	0,08–0,20	0,06–0,18	0,04–0,16			
ECC 25	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,12–0,25	0,10–0,23	0,08–0,21	0,06–0,19	0,04–0,17	
ECC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,14–0,29	0,12–0,27	0,10–0,25	0,08–0,23	0,05–0,20

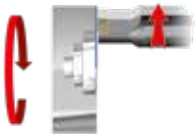
Feed f may be increased by 50–75 % when using M50Q and ALQ.

3xD

EcoCut Classic Size	Depth of cut a_p in mm								
	1,0	2,0	2,5	3,0	3,5	4,0	5,0	6,0	7,0
	Feed rate f in mm/rev.								
ECC 08	0,05–0,10	0,02–0,06							
ECC 10	0,06–0,11	0,03–0,07							
ECC 12	0,06–0,12	0,04–0,10	0,02–0,08						
ECC 14	0,07–0,13	0,05–0,11	0,02–0,09						
ECC 16	0,07–0,15	0,06–0,14	0,04–0,12	0,02–0,09					
ECC 18	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12					
ECC 20	0,09–0,18	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,03–0,12			
ECC 25	0,10–0,19	0,10–0,19	0,10–0,19	0,08–0,17	0,06–0,15	0,03–0,13			
ECC 32	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,03–0,14		

Depth of cut and feed rate for EcoCut Classic

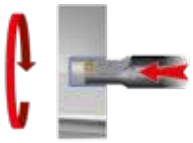
Face turning



EcoCut Classic Size	1,5xD		2,25xD		3xD	
	a_p in mm	f in mm/rev.	a_p in mm	f in mm/rev.	a_p in mm	f in mm/rev.
ECC 08	2,00	0,05–0,10	1,90	0,04–0,09	1,10	0,04–0,07
ECC 10	2,50	0,06–0,12	2,20	0,05–0,10	1,20	0,04–0,09
ECC 12	3,00	0,07–0,14	2,60	0,06–0,12	1,40	0,05–0,11
ECC 14	3,50	0,08–0,16	3,00	0,07–0,14	1,60	0,06–0,12
ECC 16	4,00	0,09–0,18	3,40	0,08–0,16	1,90	0,06–0,13
ECC 18	4,50	0,10–0,20	3,80	0,09–0,18	2,00	0,07–0,14
ECC 20	5,00	0,11–0,22	4,20	0,10–0,20	2,20	0,08–0,15
ECC 25	6,00	0,12–0,24	5,00	0,11–0,22	2,60	0,09–0,18
ECC 32	8,00	0,13–0,27	6,00	0,12–0,25	3,00	0,10–0,20

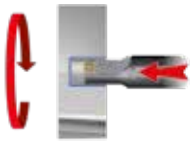
Drilling

Feed rate



EcoCut Classic Size	1,5xD	2,25xD	3xD
	f in mm/rev.	f in mm/rev.	f in mm/rev.
ECC 08	0,01–0,04	0,01–0,04	0,01–0,02
ECC 10	0,01–0,05	0,01–0,05	0,01–0,03
ECC 12	0,01–0,05	0,01–0,05	0,01–0,04
ECC 14	0,01–0,07	0,01–0,07	0,01–0,05
ECC 16	0,02–0,08	0,02–0,08	0,02–0,06
ECC 18	0,03–0,09	0,03–0,09	0,03–0,07
ECC 20	0,03–0,10	0,03–0,10	0,03–0,08
ECC 25	0,03–0,12	0,03–0,12	0,04–0,09
ECC 32	0,05–0,15	0,05–0,15	0,05–0,11

max. bore depth



EcoCut Classic Size	1,5xD	2,25xD	3xD
	Max. hole depth in mm	Max. hole depth in mm	Max. hole depth in mm
ECC 08	12,0	18,0	24,0
ECC 10	15,0	22,5	30,0
ECC 12	18,0	27,0	36,0
ECC 14	21,0	31,5	42,0
ECC 16	24,0	36,0	48,0
ECC 18	27,0	40,5	54,0
ECC 20	30,0	45,0	60,0
ECC 25	37,5	56,5	75,0
ECC 32	48,0	72,0	96,0

Depth of cut and feed rate for EcoCut ProfileMaster 90°

Turning

1,5xD



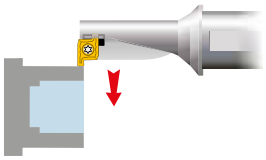
EcoCut ProfileMaster Size	Depth of cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
PMC 10	0,07–0,20	0,05–0,17	0,02–0,12					
PMC 12	0,07–0,20	0,05–0,17	0,02–0,12					
PMC 16	0,10–0,25	0,07–0,23	0,05–0,21	0,02–0,17				
PMC 20	0,12–0,27	0,10–0,26	0,007–0,24	0,05–0,20	0,02–0,14			
PMC 25	0,15–0,30	0,15–0,30	0,13–0,28	0,10–0,26	0,05–0,22	0,02–0,18		
PMC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,10–0,27	0,07–0,24	0,05–0,21	0,02–0,15

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
PMC 10	0,07–0,19	0,02–0,13						
PMC 12	0,07–0,19	0,02–0,13						
PMC 16	0,10–0,25	0,07–0,21	0,02–0,13					
PMC 20	0,12–0,27	0,07–0,24	0,05–0,19					
PMC 25	0,15–0,30	0,10–0,27	0,07–0,23	0,02–0,15				
PMC 32	0,15–0,30	0,15–0,30	0,10–0,27	0,07–0,23	0,02–0,15			

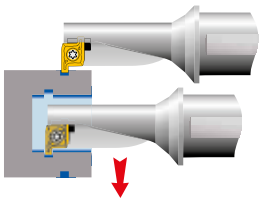
Face turning

1.5xD and 2.25xD



EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
PMC 10	0,02–0,15	0,02–0,15				
PMC 12	0,02–0,15	0,02–0,15				
PMC 16	0,05–0,20	0,05–0,20	0,05–0,20			
PMC 20	0,08–0,22	0,08–0,22	0,08–0,22	0,08–0,22		
PMC 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	
PMC 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

Internal + external – radial grooving

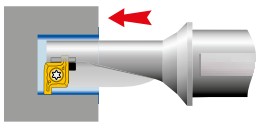


EcoCut ProfileMaster Size	1,5xD
	f in mm/rev.
PMC 10	0,01–0,08
PMC 12	0,02–0,10
PMC 16	0,04–0,15
PMC 20	0,04–0,16
PMC 25	0,07–0,20
PMC 32	0,08–0,22

EcoCut ProfileMaster Size	2,25xD
	f in mm/rev.
PMC 10	0,01–0,08
PMC 12	0,02–0,10
PMC 16	0,04–0,15
PMC 20	0,04–0,16
PMC 25	0,07–0,20
PMC 32	0,08–0,22

Drilling

Feed and max. hole depth



EcoCut ProfileMaster Size	1,5xD	
	f in mm/rev.	Max. hole depth in mm
PMC 10	0,01–0,05	15,0
PMC 12	0,01–0,06	18,0
PMC 16	0,02–0,09	24,0
PMC 20	0,03–0,10	30,0
PMC 25	0,04–0,12	37,5
PMC 32	0,04–0,14	48,0

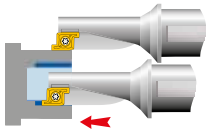
EcoCut ProfileMaster Size	2,25xD	
	f in mm/rev.	Max. hole depth in mm
PMC 10	0,01–0,05	22,5
PMC 12	0,01–0,06	27,0
PMC 16	0,02–0,09	36,0
PMC 20	0,03–0,10	45,0
PMC 25	0,04–0,12	56,3
PMC 32	0,04–0,14	72,0

Depth of cut and feed rate for EcoCut ProfileMaster 0°

EcoCut ProfileMaster Sizes 10 and 12 can not be used as 0° version.

Turning

1,5xD



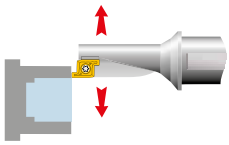
EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
PMC 16	0,04–0,20	0,04–0,20	0,04–0,20			
PMC 20	0,06–0,22	0,06–0,22	0,06–0,22	0,06–0,22		
PMC 25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	
PMC 32	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
PMC 16	0,04–0,20	0,04–0,20	0,04–0,20			
PMC 20	0,06–0,22	0,06–0,22	0,06–0,22	0,06–0,22		
PMC 25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	
PMC 32	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28

Face turning

1,5xD

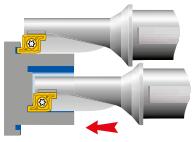


EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.						
PMC 16	0,05–0,20	0,05–0,20	0,05–0,20				
PMC 20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20			
PMC 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25		
PMC 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.						
PMC 16	0,05–0,20	0,05–0,20	0,05–0,20				
PMC 20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20			
PMC 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25		
PMC 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

Axial grooving external + internal



EcoCut ProfileMaster Size	1,5xD
	Feed rate f in mm/rev.
PMC 16	0,02–0,12
PMC 20	0,04–0,14
PMC 25	0,06–0,18
PMC 32	0,08–0,20

EcoCut ProfileMaster Size	2,25xD
	Feed rate f in mm/rev.
PMC 16	0,02–0,12
PMC 20	0,04–0,14
PMC 25	0,06–0,18
PMC 32	0,08–0,20

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

10

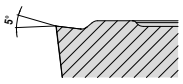
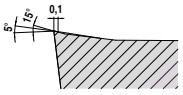
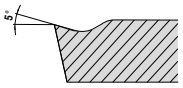
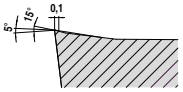
Cutting data appoximate values

	EcoCut Mini CTWN425 (CWK4425)	EcoCut Mini CTPP435 (HCN1435)	EcoCut Classic CTCP425 (HCR1425)	EcoCut Classic CTCP435 (HCR1435)	EcoCut Classic CTPP430 (HCN2430)	EcoCut Classic H210T (CWK20)	EcoCut Classic H216T (CWK26)	EcoCut ProfileMaster CTPP430 (HCN 2430)
Index	v_c in m/min							
1.1		**80–160**	**120–250**	**120–240**	**120–220**			**120–220**
1.2		**80–230**	**150–300**	**150–300**	**120–250**			**120–250**
1.3		**80–230**	**120–220**	**120–220**	**80–180**			**80–180**
1.4		**80–230**	**100–200**	**100–180**	**60–160**			**60–160**
1.5		**60–130**	**120–220**	**110–200**	**80–180**			**80–180**
1.6		**60–120**	**100–180**	**100–180**	**60–160**			**60–160**
1.7		**60–120**	**120–200**	**100–180**	**80–180**			**80–180**
1.8		**50–100**	**80–150**	**70–140**	**60–130**			**60–130**
1.9		**60–120**	**110–190**	**80–150**	**80–180**			**80–180**
1.10		**50–150**	**100–180**	**100–180**	**60–170**			**60–170**
1.11		**50–150**	**80–150**	**50–150**	**80–150**			**80–150**
1.12		**80–140**	**90–150**	**80–150**	**60–150**			**60–150**
1.13		**60–120**	**70–150**	**60–140**	**60–150**			**60–150**
1.14								
1.15		**50–150**	**80–150**	**80–150**	**60–150**			**60–150**
1.16		**50–150**	**80–150**	**80–150**	**60–150**			**60–150**
2.1		**50–200**	100–200	100–180	**50–160**			**50–160**
2.2		**50–180**	120–220	100–200	**50–180**			**50–180**
2.3		**50–180**	120–200	100–200	**50–150**			**50–150**
2.4		**50–180**	100–200	100–180	**50–160**			**50–160**
2.5		**50–100**			**50–130**			**50–130**
2.6		**50–80**			**50–120**			**50–120**
2.7		**50–80**			**50–120**			**50–120**
3.1	100–150	100–170	**130–280**	**120–250**	120–200	140–200	**100–150**	120–200
3.2	100–150	100–170	**130–280**	**120–250**	100–180	100–160	**100–150**	100–180
3.3	100–140	100–160	**120–280**	**110–250**	120–200	160–200	**100–140**	120–200
3.4	100–140	100–160	**120–280**	**110–250**	100–180	110–150	**100–140**	100–180
3.5	100–160	100–180	**110–280**	**100–250**	90–160	160–220	**100–160**	90–160
3.6	100–160	100–170	**110–280**	**100–250**	70–150	140–180	**100–160**	70–150
3.7	100–160	100–170	**110–280**	**100–250**	90–160	160–220	**100–160**	90–160
3.8	100–160	100–170	**110–280**	**100–250**	70–150	140–180	**100–160**	70–150
4.1	**100–2000**				100–2000	**300–3000**	**100–500**	100–2000
4.2	**100–1500**				100–1500	**200–2500**	**100–500**	100–1500
4.3	**100–1500**				100–1500	**400–2000**	**100–300**	100–1500
4.4	**100–1300**				100–1300	**200–1000**	**100–300**	100–1300
4.5	**100–600**				100–600	**250–800**	**100–300**	100–600
4.6	**100–300**				100–300	**150–400**	**100–300**	100–300
4.7	**100–500**				100–500	**200–400**	**100–500**	100–500
4.8	**100–500**				100–500	**150–400**	**100–300**	100–500
4.9	**100–500**				100–500	**150–400**	**100–300**	100–500
4.10	**100–500**				100–500	**150–400**	**100–300**	100–500
4.11	**100–500**				100–500	**200–800**	**100–500**	100–500
4.12	**100–290**				100–290	**150–600**	**100–300**	100–290
4.13	**90–200**				90–200	**150–280**	**120–200**	90–200
4.14	**60–160**				60–160	**100–220**	**80–180**	60–160
4.15	**50–140**				50–140	**80–200**	**60–150**	50–140
4.16								
4.17								
4.18								
4.19								
5.1		**20–50**			**20–90**	**30–50**		**20–90**
5.2		**15–25**			**20–90**	**15–30**		**20–90**
5.3		**15–25**			**20–80**	**15–25**		**20–80**
5.4		**10–20**			**20–80**	**15–25**		**20–80**
5.5		**10–20**			**20–80**	**15–25**		**20–80**
5.6		**10–20**			**20–90**	**15–30**		**20–90**
5.7		**10–20**			**20–80**	**15–25**		**20–80**
5.8		**10–20**			**20–80**	**15–25**		**20–80**
5.9		**50–120**			**40–100**	**80–140**		**40–100**
5.10		**30–50**			**30–90**	**40–100**		**30–90**
5.11		**30–50**				**30–60**		
6.1								
6.2								
6.3								
6.4								
6.5								

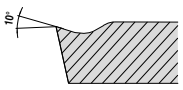
The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Chip Breakers Overview

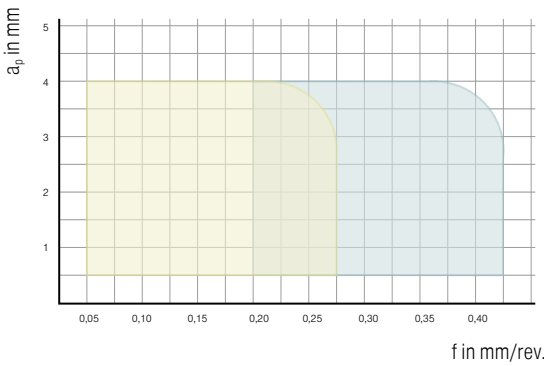
EcoCut Classic

	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration f mm
-EN ▲ Universal geometry ▲ Excellent chip breakage ▲ Positive cutting edge ▲ Low to medium feeds		**CTCP425 (HCR1425)** **CTCP435 (HCR1435)** **CTCP425 (HCR1425)** CTPP430 (HCN2430)	**CTCP435 (HCR1435)** **CTPP430 (HCN2430)** **CTCP435 (HCR1435)** CTPP430 (HCN2430)	**CTPP430 (HCN2430)** **CTPP430 (HCN2430)** CTPP430 (HCN2430)	 0,05–0,75
-M50Q ▲ With wiper geometry ▲ Excellent surface qualities ▲ Good chip formation ▲ Medium to high feeds		**CTCP425 (HCR1425)** CTCP425 (HCR1425) **CTCP425 (HCR1425)**	**CTCP425 (HCR1425)** CTCP425 (HCR1425)		 0,2–0,425
-27P ▲ Positive cutting edge ▲ Periphery ground ▲ Polished rake face ▲ First choice for non-ferrous metals		**H216T (CWK 26)**	**H216T (CWK 26)**	**H216T (CWK 26)**	 0,1–0,4
-ALQ ▲ With wiper geometry ▲ Extremely positive geometry ▲ Periphery ground ▲ Low adhesion		**H210T (CWK 20)**	**H210T (CWK 20)**		 0,2–0,5

EcoCut ProfileMaster

-M20 ▲ Positive geometry ▲ Universal application ▲ Low to medium feeds		CTPP430 (HCN2430) **CTPP430 (HCN2430)** CTPP430 (HCN2430) CTPP430 (HCN2430) **CTPP430 (HCN2430)**	**CTPP430 (HCN2430)** **CTPP430 (HCN2430)** CTPP430 (HCN2430) CTPP430 (HCN2430) CTPP430 (HCN2430)	**CTPP430 (HCN2430)** **CTPP430 (HCN2430)** CTPP430 (HCN2430) CTPP430 (HCN2430)	 0,05–0,25

Application area of -EN and -M50Q chip breakers



EcoCut Classic 2.25xD – ECC16 – XCNT 080304

= -M50Q

= Standard

10

EcoCut Classic – Application as the most stable boring tool

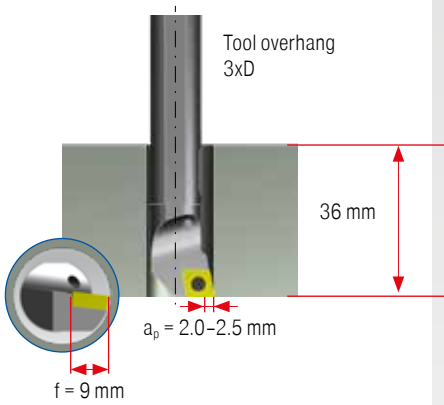
EcoCut can be used not only as a multifunctional tool. In comparison with a boring bar EcoCut used as a pure boring tool gives the user enormous benefits.

Example: Machining bores, 16 mm diameter by 36 mm depth

Differences in the tool

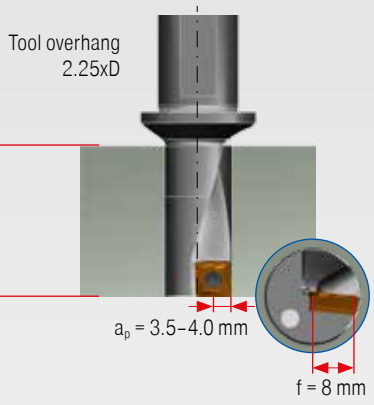
Boring Bar

A12K SCFCR 06



EcoCut Classic

ECC 16R-2.25D 08



Your Advantages

Large, stable toolholder

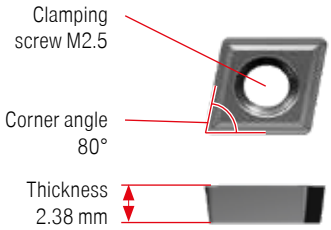
- Absorption of high cutting forces
- Low vibration
- Chip Booster for perfect cooling and chip evacuation

Benefits

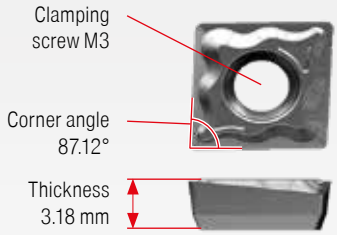
- High surface quality
- Perfect chip control
- Max. process security

Differences in the insert

CCMT 060204



XCNT 080304



Large and stable insert

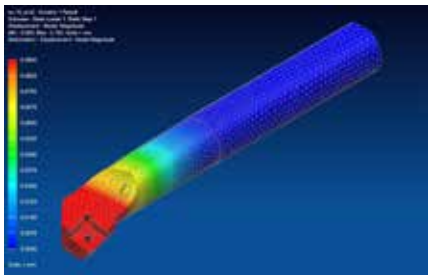
- Increased process security
- Enables large depths of cut
- Higher cutting data
- Higher tool life

Benefits

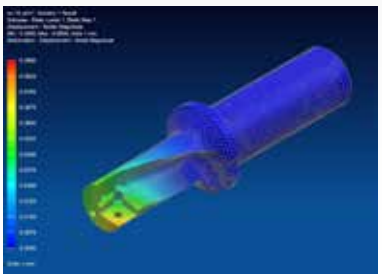
- Reduction in machining time
- Increased productivity
- Reduced tooling costs

Stability Comparison

Calculation using FEM
A load of 1000 N on the insert seat corresponds to an approx. a_p of 2.0 mm and f 0.2 mm



Deflection 0.19mm

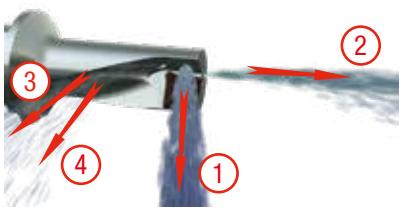


Deflection 0.08mm

Practical experience shows:

- Reduced machining time by up to **75 %**
- Increase in tool life by **400 %** possible

Innovative chip removal – Chip-Booster



EcoCut tools are equipped with a unique coolant and chip removal system.

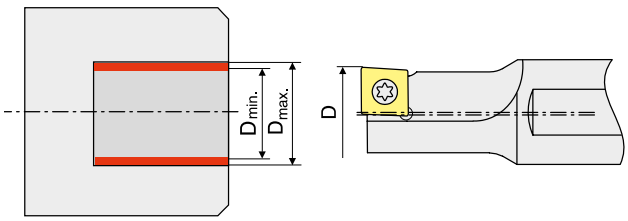
1. Cooling of the indexable insert
2. General coolant stream
3. Chip booster for improved chip transport
4. Chip booster prevents chips from getting stuck between tool and workpiece

For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

Application Tips

Drilling Off centre

Due to the special construction of the EcoCut tool and insert, off-centre drilling is possible.
Deviations from the tool nominal Ø,
can be achieved (see adjacent table).





ProfileMaster 0°
Not suitable for drilling!

EcoCut Mini	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
ECM 02 L/R - ...D	2	1,95	2,1
ECM 02,5 L/R - ...D	2,5	2,45	2,6
ECM 03 L/R - ...D	3	2,95	3,15
ECM 03,5 L/R - ...D	3,5	3,45	3,65
ECM 04 R/L - ...D	4	3,90	4,20
ECM 05 R/L - ...D	5	4,90	5,20
ECM 06 R/L - ...D	6	5,90	6,20
ECM 07 R/L - ...D	7	6,90	7,20
ECM 08 R/L - ...D	8	7,90	8,20

EcoCut Classic	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
ECC 08 R/L - ... 04	8	7,85	8,30
ECC 10 R/L - ... 05	10	9,85	10,50
ECC 12 R/L - ... 06	12	11,85	12,50
ECC 14 R/L - ... 07	14	13,85	14,50
ECC 16 R/L - ... 08	16	15,85	16,50
ECC 18 R/L - ... 09	18	17,85	18,50
ECC 20 R/L - ... 10	20	19,80	20,50
ECC 25 R/L - ... 13	25	24,80	25,80
ECC 32 R/L - ... 17	32	31,80	33,00

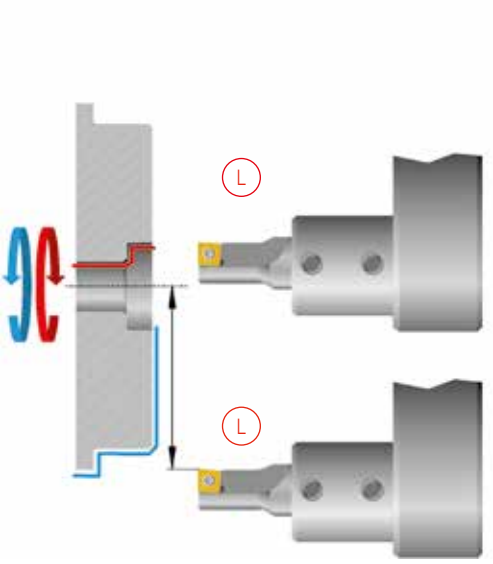
EcoCut ProfileMaster	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
PM 10R/L ...	10	9,85	12
PM 12R/L ...	12	11,85	15
PM 16R/L ...	16	15,85	19
PM 20R/L ...	20	19,80	24
PM 25R/L ...	25	24,80	29
PM 32R/L ...	32	31,80	38

10

Machining over centre

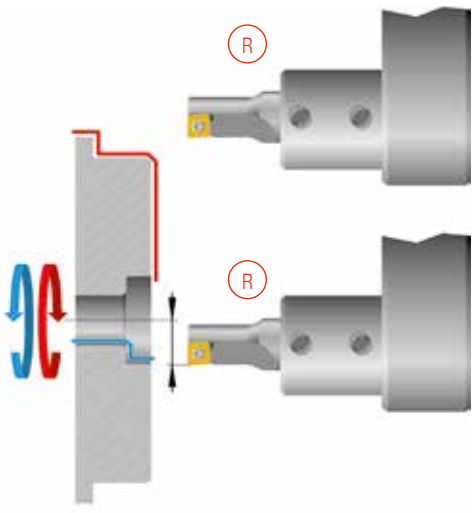
Problem

In case of insufficient movement of the machine across the centre line, the external diameter can not be machined with the same tool.



Solution

Use a right hand EcoCut tool.

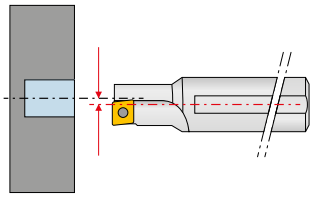


Application Tips

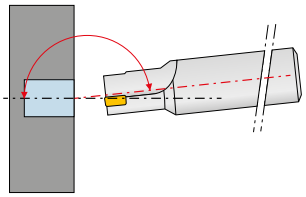
With axial displacement there is the danger of collision!

Problems

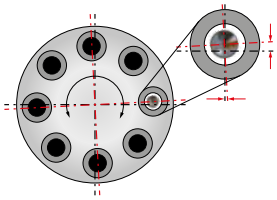
Displacement in x-direction:



Angular error:



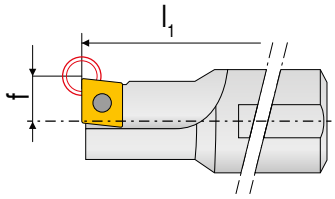
Turret position error:



Remedy

When pre-setting the tool:

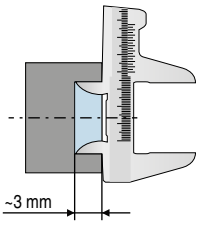
- Definition as an internal turning tool for programming



- Enter the tool nominal Ø as bore target Ø

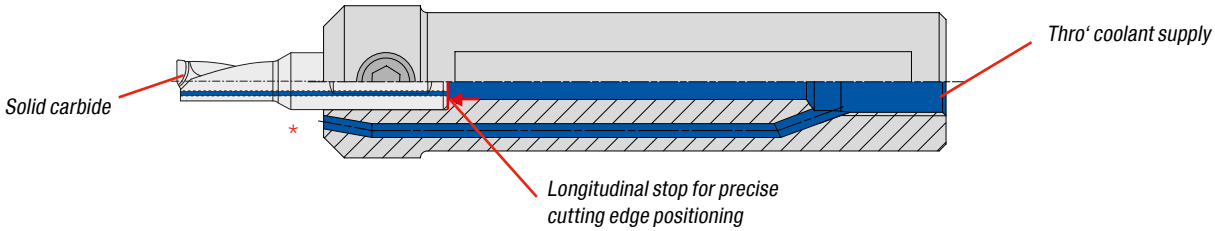
At the machine:

- Make measuring cut, approx. 3 mm deep
- Measure drilled diameter produced



- If necessary correct drilling Ø
- Start machining

EcoCut Mini adapter – Design



* Cross-section rotated by 90° for clarity

Mounting of the insert for EcoCut Classic

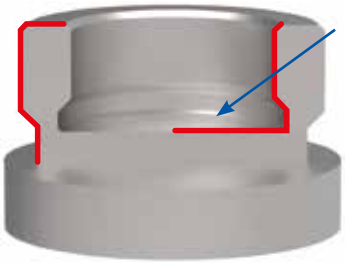
For tools up to Ø 8 mm right and left handed inserts are required. From Ø 10–32 mm neutral inserts are used.

Note!
Ensure correct installation position.





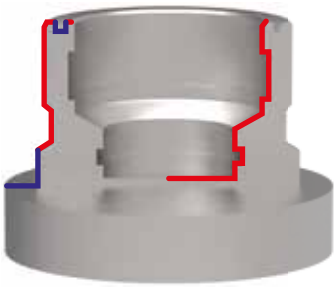
EcoCut ProfileMaster – the highlight with regard to efficiency



Right hand tools



Right hand insert



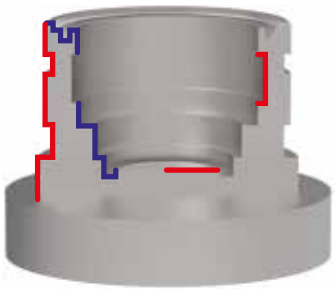
Right hand tools



Left hand insert



Right hand insert



Left hand tool



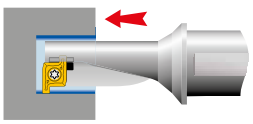
Right hand tools



Right hand insert

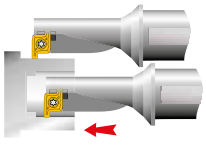
10

Version 90°



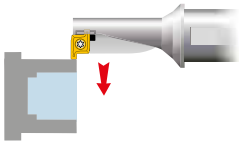
Drilling into solid material with flat bottom hole

Drilling

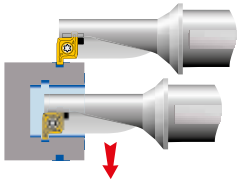


Turning External Diameters

Turning Internal Diameters



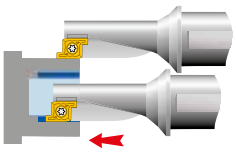
Turning Profiles



External radial grooving

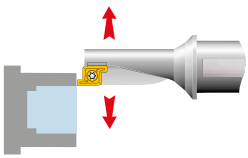
Internal radial grooving

Version 0°

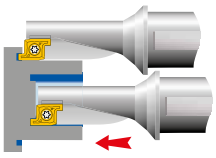


Turning External Diameters

Turning Internal Diameters



Turning Profiles



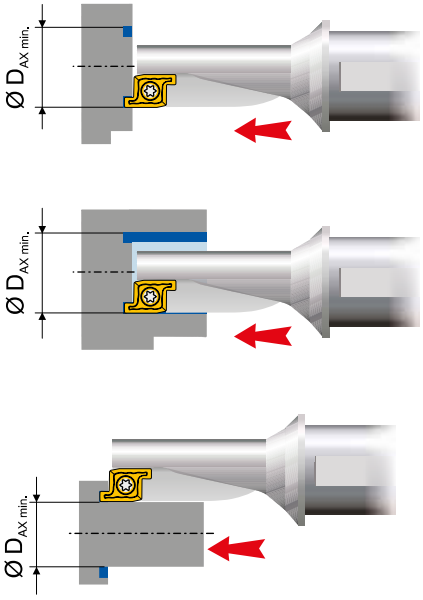
Axial grooving external

Axial grooving internal

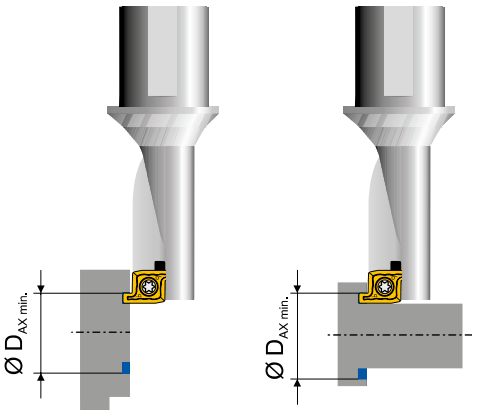
For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

EcoCut ProfileMaster – Axial Grooving

0° (from Ø 16 mm)

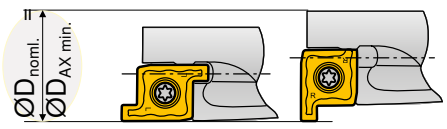


90°



EcoCut ProfileMaster	$ØD_{noml.}$ mm	$ØD_{AX\ min.}$ mm	$ØD_{AX\ max.}$ mm
PM 10R/L 1,5D	10	10	> 10
PM 10R/L 2,25D	10	10	> 10
PM 12R/L 1,5D	12	12	> 12
PM 12R/L 2,25D	12	12	> 12
PM 16R/L 1,5D	16	16	> 16
PM 16R/L 2,25D	16	16	> 16
PM 20R/L 1,5D	20	20	> 20
PM 20R/L 2,25D	20	20	> 20
PM 25R/L 1,5D	25	25	> 25
PM 25R/L 2,25D	25	25	> 25
PM 32R/L 1,5D	32	32	> 32
PM 32R/L 2,25D	32	32	> 32

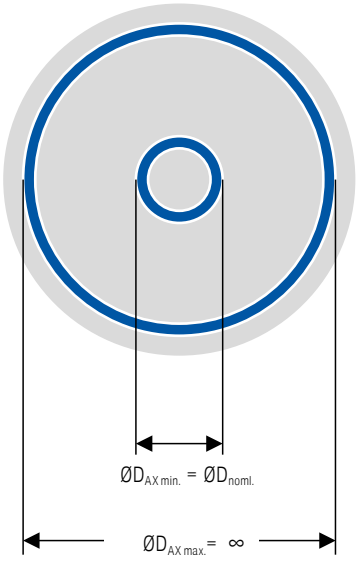
$ØD_{AX\ min.}$ = $ØD_{noml.}$



$ØD_{noml.}$ = Nominal tool diameter

$ØD_{AX\ min.}$ = Smallest diameter for axial grooving

$ØD_{AX\ max.}$ = Largest diameter for axial grooving



Application Tips

Recommendation for Optimum Results

Type of problem										
Type of wear				Work piece problems		Swarf control				
Edge breakage	Built-up edge	Wear on clearance face	Plastic deformation	Vibration	Surface quality	Chip too long (snarl chip)	Chip too short (fragmented chip)	Remedy measures		
	↑	↓	↓	↓	↑	↓			Cutting data	Cutting speed
↓		~	↓	↑	↓	↑	↓			Feed rate
↑		↑	↑	↓	↑				Insert selection	Corner radius (larger ↑ / smaller ↓)
↓		↑	↑							Tap Material (wear resistance ↑ / toughness ↓)
~				~	~				General criteria	Tool clamping
~				~	~					Work piece clamping
~				~	↓					Overhang
~		~		~	~					Tip height
	●	●	●		●	●				Cooling lubricant

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ control, optimize
● use

10

Grades Overview

EcoCut Classic

CTCP425 / HCR1425
- Carbide, Ti+Al_2O_3-coated
- ISO | **P25** | **K30** | M20
- The wear-resistant choice for steel and cast iron materials under stable conditions and at high cutting speeds

CTCP435 / HCR1435
- Carbide, Ti+Al_2O_3-coated
- ISO | **P35** | **K40** | M30
- The reliable choice for steel and cast iron materials under unstable conditions

CTPP430 / HCN2430
- Carbide, TiAlN-coated
- ISO | **P30** | **M25** | **S25** | K30 | N25
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

H210T / CWK20
- Carbide, uncoated
- ISO | **N10** | **S10** | K10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

H216T / CWK26
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

EcoCut Mini

CTPP435 / HCN1435
- Carbide, TiAlN-coated
- ISO **I P35 I M30 I S30** | K30
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

CTWN425 / CWK4425
- Carbide, uncoated
- ISO | **N25** | K20
- The uncoated carbide grade for machining aluminium and other non-ferrous metals

EcoCut ProfileMaster

CTPP430 / HCN2430
- Carbide, TiAlN-coated
- ISO | **P30** | **M25** | **S25** | K30 | N25
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

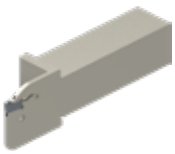
Application

Grade designation	Standard designation	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	Tempered steel H
EcoCut Mini							
CTWN425 (CWK4425)	HW-N25				●		
	HW-K20			○			
CTPP435 DRAGONSKIN (HCN1435)	HC-P35	●					
	HC-M30		●				
	HC-S30					●	
	HC-K30			○			
EcoCut Classic							
CTCP425 DRAGONSKIN (HCR1425)	HC-P25	●					
	HC-M20		○				
	HC-K30			●			
CTCP435 DRAGONSKIN (HCR1435)	HC-P35	●					
	HC-M30		○				
	HC-K40			●			
CTPP430 DRAGONSKIN (HCN2430)	HC-P30	●					
	HC-M25		●				
	HC-S25					●	
	HC-K30			○			
	HC-N25				○		
H216T (CWK26)	HW-N15				●		
	HW-K15			●			
H210T (CWK20)	HW-N10				●		
	HW-S10					●	
	HW-K10			○			
EcoCut ProfileMaster							
CTPP430 DRAGONSKIN (HCN2430)	HC-P30	●					
	HC-M25		●				
	HC-S25					●	
	HC-N25			○			
	HC-K30				○		



10

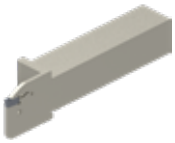
New products for machining technicians



NEW MonoClamp – Radial Monoholder SX-DC

DirectCooling – dual cooling of the grooving insert via the rake face and flank. For grooving and parting off up to a diameter of 80 mm.

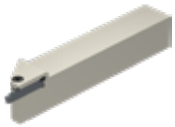
20



NEW MonoClamp – Radial Monoholder SX

Proven single-edged grooving and turning system with a completely updated design. Elastic insert clamping with assembly key.

21





NEW MonoClamp – Axial Monoholder AX

For axial grooves from a diameter of 10 mm. Suitable for 0° and 90° versions with groove depths up to 15 mm.

77+78



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder – System Overview	3
Toolfinder – External Machining	4+5
Toolfinder – Internal Machining	6+7
Product programme	8–99
Technical Information	
Cutting Data	100–102
Depths of Cut and Feedrates	103–109
TC – Reference values for profile depth and number of passes	110
Comparison threading system with TC and conventional	111
Grooving depth reduction	112+113
Clamping Methods	114+115
Torque Moment ModularClamp Module Screws	116
General references	117
Causes of Wear and Corrective Measures	118–120
Chip Breakers Overview	121–124
Example of Coding Grooving Tools	125
Grade overview and application	126+127

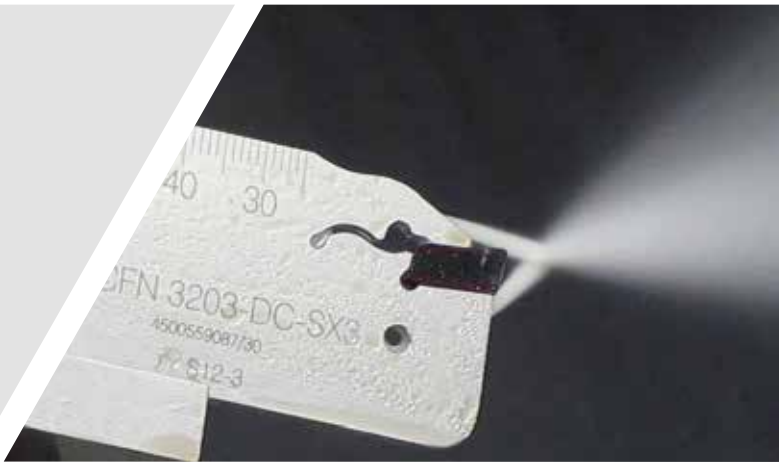
CERATIZIT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Advantages of the DirectCooling blade

- The best machining results, even with reduced pump output
  Highest flow volume of all thro' coolant blades on the market
- User friendly
  Reinforced blades without sealing screw
- Process-secure spare part for easy handling and a long service life
  Single-piece sealing screw made from steel (for standard blades)



Symbol explanation


Grooving


Turning


Face turning


Axial grooving


Main Application


Extended application


Repeatability

F	M	R

F: Fine Machining
M: Medium Machining
R: Rough Machining

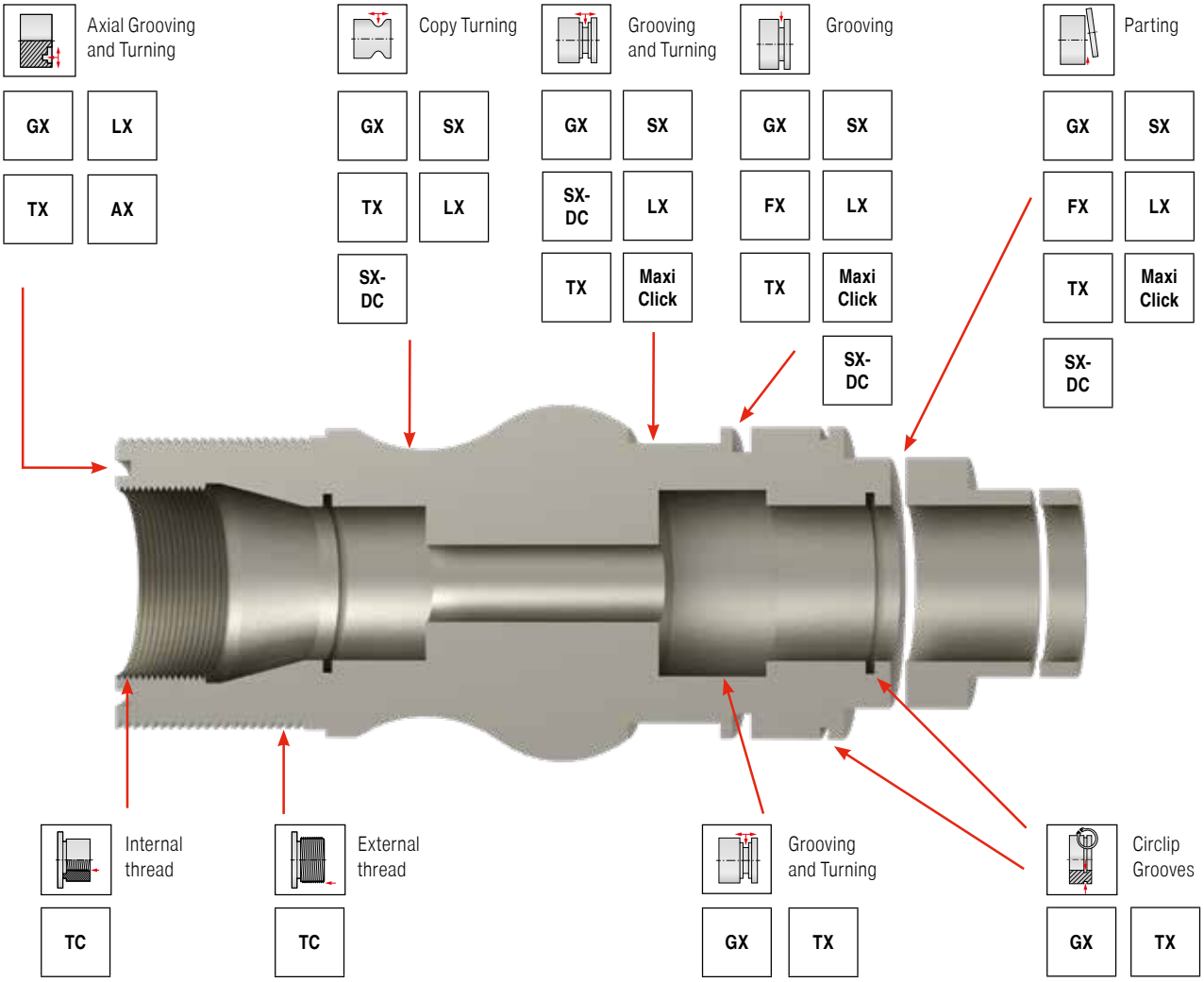



Smooth cut
Irregular cutting depth
Interrupted cut

CTCP325
HCR1325

Carbide Grade

Toolfinder – System Overview

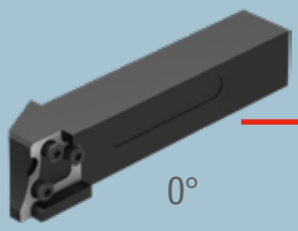


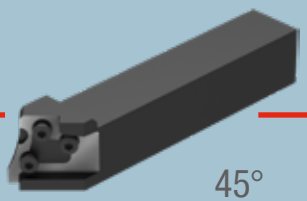
System Description

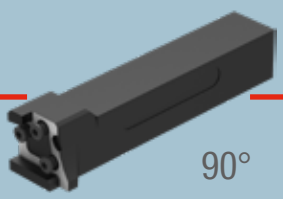
		Pages
SX	The single edged SX grooving system is even more versatile with the -M3 chip breaker. Besides grooving / parting with the -F2, -M2, or -27P chip breakers, the SX -M3 type also allows copying turning operations with the highest chip control. With this additional option, the SX grooving system can cover all areas of grooving making it a universal grooving tool. Available as a Modular or Mono system.	8–21
SX-DC	Our tried-and-tested single-edged SX grooving system is now available with targeted DirectCooling (DC) thro' coolant supply. The coolant is guided through two coolant holes – one above and one below the grooving insert – straight to the point where it will be most effective: the cutting edge itself.	14–21
FX	A single-edged grooving system with a variety of specialized chip geometries. From fine machining in unstable parts through to high-performance machining under stable conditions. Available as a Modular or Mono system.	22–29
GX	Double edged grooving system for grooving, parting off, turning and for producing circlip grooves. Available in sizes GX 09, GX 16 and GX 24. Available as a Modular or Mono system.	30–60
TX	Three-edged system for parting, grooving, axial grooving, radial grooving, and fine turning. Positive ground cutting geometries, with a very soft cut with minimum cutting forces. Universally applicable for almost all materials. Available as a Monosystem.	61–70
LX	Single edged system for extreme applications starting from a cutting width of 8.0 mm. The LX system is for use in stable conditions. Available as a Modular or Mono system	71–74
AX	Double-edged Axial grooving system for grooving and groove turning with high precision. Due to the three different depths (5 mm, 10 mm and 15 mm) stable tools are available for each application.	75–78
TC	Double-edged thread turning system for the production of external and internal threads. Advantage is the use without pitch angle correction and in narrow or difficult areas of application. Available as a Modular or Mono system.	79–87
Maxi Click	Five-edged grooving system for grooving and parting.	88–92

Toolfinder – External Machining

ModularClamp







GX 09



GX 16



Deep Radial Grooving, Parting and Turning

Axial Grooving and Face Turning

Deep Axial Grooving and Face Turning

GX 24



GX 09

Circlip grooves



Cutting width
CW = 0,5–3,15 mm (H13)

Radius grooves

Standard 

CRE = 0,8–1,2 mm

Grooving and Turning

-F2 

Standard 

-M40 

Cutting width
CW = 2,0–3,5 mm

GX 16

Circlip grooves



Cutting width
CW = 0,5–5,15 mm (H13)

Radius grooves

Standard 

-27P 

CRE = 0,8–3,0 mm

Grooving and Turning

-F2 

Standard 

-M40 

-M1 

-27P 

Cutting width
CW = 2,0–6,0 mm

GX 24

Radial, axial and deep axial grooving and parting, face turning and turning

-F2 

-E 

-M1 

-M40 

-27P 

Cutting width
CW = 2,0–6,0 mm

-M3 

-27P 

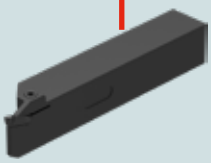
CRE = 1,5–4,0 mm

MonoClamp

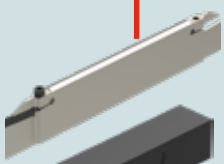
GX 09

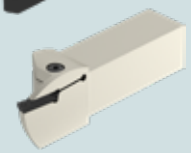


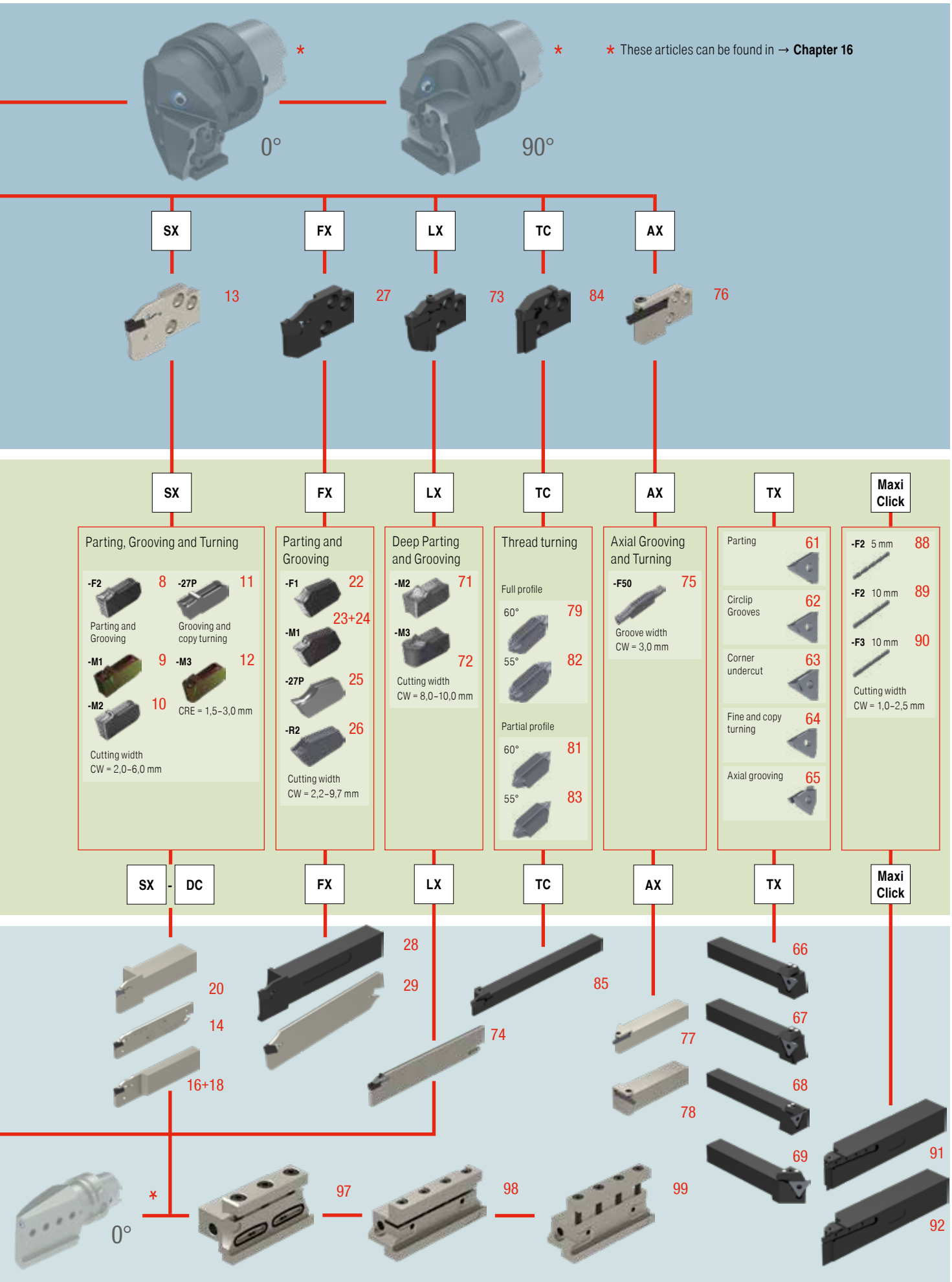
GX 16



GX 24



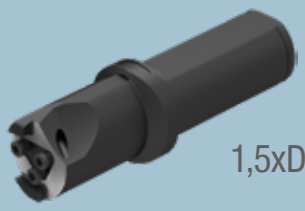



* These articles can be found in → Chapter 16
0°
90°
SX
FX
LX
TC
AX
13
27
73
84
76
SX
FX
LX
TC
AX
TX
Maxi Click
Parting, Grooving and Turning
-F2 8
Parting and Grooving
-27P 11
Grooving and copy turning
-M1 9
-M3 12
-M2 10
CRE = 1,5–3,0 mm
Cutting width CW = 2,0–6,0 mm
Parting and Grooving
-F1 22
23+24
-M1
-27P 25
-R2 26
Cutting width CW = 2,2–9,7 mm
Deep Parting and Grooving
-M2 71
-M3 72
Cutting width CW = 8,0–10,0 mm
Thread turning
Full profile
60° 79
55° 82
Partial profile
60° 81
55° 83
Axial Grooving and Turning
-F50 75
Groove width CW = 3,0 mm
Parting 61
Circlip Grooves 62
Corner undercut 63
Fine and copy turning 64
Axial grooving 65
-F2 5 mm 88
-F2 10 mm 89
-F3 10 mm 90
Cutting width CW = 1,0–2,5 mm
SX - DC
FX
LX
TC
AX
TX
Maxi Click
20
14
16+18
28
29
74
85
77
78
66
67
68
69
91
92
0°
97
98
99

11

Toolfinder – Internal Machining

ModularClamp


1,5xD
96

GX 09


40


41

GX 16


40


41

GX 09

Circlip grooves


35

Cutting width
CW = 0,5–3,15 mm (H13)

Radius grooves

Standard

36

CRE = 0,8–1,2 mm

Grooving and Turning

-F2

30

Standard

31

-M40

32

Cutting width
CW = 2,0–3,5 mm

GX 16

Circlip grooves


35

Cutting width
CW = 0,5–5,15 mm (H13)

Radius grooves

Standard

36

-27P

37

CRE = 0,8–3,0 mm

Grooving and Turning

-F2

30

Standard

31

-M40

32

-M1

33

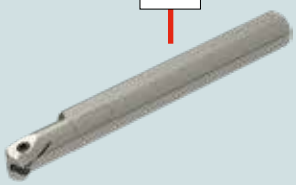
-27P

34

Cutting width
CW = 2,0–6,0 mm

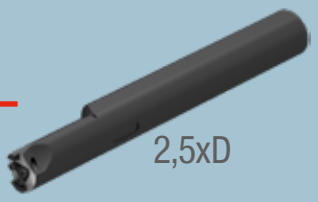
MonoClamp

GX 09


44

GX 16


45


96

2,5xD

GX 24


54

TC


86

GX 24

Radial, axial and deep axial grooving and parting, face turning and turning

-M1  48

-M40  49

-E  47

-F2  46

-27P  51

Cutting width
CW = 2,0–6,0 mm

-M3  50

-27PF  52

CRE = 1,5–4,0 mm

TC

Thread turning

Partial profile 60°  81

Full profile 60°  80

Full profile 55°  82

Partial profile 55°  83

TX

Parting  61

Circlip Grooving Inserts  62

For corner relief  63

Fine and copy turning  64

Axial grooving  65

GX 24


59

TC


87

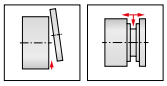
TX


70

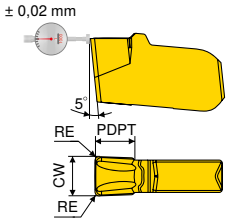
11

Insert SX

▲ High Precision polished geometry



F	M	R



-F2 CTCP325	-F2 CTCP335	-F2 CTPP345	-F2 CTP1340
-F2 HCR1325	-F2 HCR1335	-F2 HCN1345	-F2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 346 ...		1C/72 Article no. 70 346 ...		1C/72 Article no. 70 346 ...		1C/72 Article no. 70 346 ...	
	mm	mm	mm		EUR		EUR		EUR		EUR	
SX E2.00 N 0.20	2	0,2	1,5	-SX2					18,01	**822**	18,01	**622**
SX E3.00 N 0.30	3	0,3	2,0	-SX3	19,36	**923**	19,36	**523**	19,36	**823**	19,36	**623**
SX E4.00 N 0.40	4	0,4	2,5	-SX4					20,48	**824**	20,48	**624**

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 107

Internal machining *External machining*



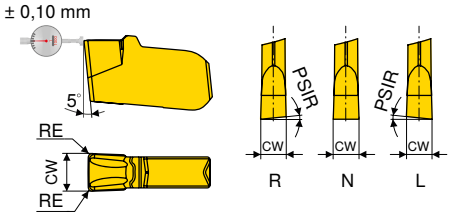
→ 13 → 14–19 → 20+21

Insert SX

▲ Specially developed geometry with negative edge-chamfers available in right, left and neutral types



F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCR1335	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW +/-0,05 mm	RE +/-0,05 mm	PSIR	for tool holder	1C/72 Article no. 70 342 ... EUR		1C/72 Article no. 70 342 ... EUR		1C/72 Article no. 70 342 ... EUR		1C/72 Article no. 70 342 ... EUR	
SX E2.00 L 6	L	2	0,2	6°	-SX2							12,08	**612**
SX E3.00 L 6	L	3	0,2	6°	-SX3	12,86	**913**					12,86	**613**
SX E4.00 L 6	L	4	0,3	6°	-SX4							13,54	**614**
SX E2.00 N 0.20	N	2	0,2		-SX2	12,08	**922**			12,08	**822**	12,08	**622**
SX E3.00 N 0.20	N	3	0,2		-SX3	12,86	**923**	12,86	**523**	12,86	**823**	12,86	**623**
SX E4.00 N 0.30	N	4	0,3		-SX4	13,54	**924**	13,54	**524**	13,54	**824**	13,54	**624**
SX E5.00 N 0.30	N	5	0,3		-SX5	14,42	**925**			14,42	**825**	14,42	**625**
SX E6.00 N 0.40	N	6	0,4		-SX6	15,55	**926**			15,55	**826**	15,55	**626**
SX E2.00 R 6	R	2	0,2	6°	-SX2							12,08	**602**
SX E3.00 R 6	R	3	0,2	6°	-SX3	12,86	**903**					12,86	**603**
SX E4.00 R 6	R	4	0,3	6°	-SX4							13,54	**604**

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 108

Note: reduce feed rate by 20–50 % with R/L version!

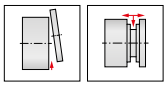
Internal machining *External machining*



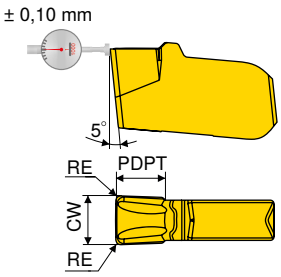
→ 13 → 14–19 → 20+21

Insert SX

▲ All purpose geometry for parting, grooving & turning.



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTPP345	-M2 CTP1340
-M2 HCR1325	-M2 HCR1335	-M2 HCN1345	-M2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 343 ...		1C/72 Article no. 70 343 ...		1C/72 Article no. 70 343 ...		1C/72 Article no. 70 343 ...	
	mm	mm	mm		EUR		EUR		EUR		EUR	
SX E2.00 N 0.20	2	0,2	1,5	-SX2	12,08	**922**	12,08	**522**	12,08	**822**	12,08	**622**
SX E3.00 N 0.30	3	0,3	2,0	-SX3	12,86	**923**	12,86	**523**	12,86	**823**	12,86	**623**
SX E4.00 N 0.40	4	0,4	2,5	-SX4	13,54	**924**	13,54	**524**	13,54	**824**	13,54	**624**
SX E5.00 N 0.40	5	0,4	2,7	-SX5	14,42	**925**	14,42	**525**	14,42	**825**	14,42	**625**
SX E6.00 N 0.50	6	0,5	3,0	-SX6	15,55	**926**	15,55	**526**	15,55	**826**	15,55	**626**

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 107

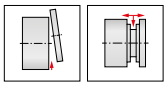
Internal machining *External machining*



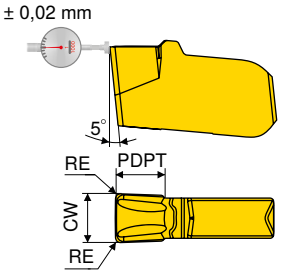
→ 13 → 14–19 → 20+21

Insert SX

- Insert with highly positive cutting edge geometry and sharp cutting edge
- Specialist for aluminum and other soft long-chipping non-ferrous metals



F	M	R



-27P
H216T

-ALP
CWK26



1C/72

Designation	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	Article no. 70 349 ... EUR	
SX E2.00 N 0.20	2	0,2	2,0	-SX2	14,32	**122**
SX E3.00 N 0.30	3	0,3	2,5	-SX3	15,33	**123**
SX E4.00 N 0.40	4	0,4	3,0	-SX4	16,23	**124**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 107

Internal machining | *External machining*

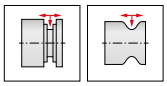


→ 13 | → 14–19 | → 20+21

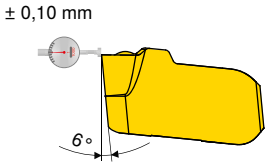
11

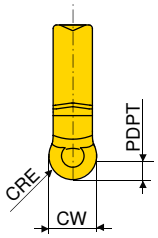
Radius Grooving Insert SX

- For grooving and copy turning
- Very good chip control



F	M	R





-M3 CTCP335	-M3 CTP1340
-M3 HCR1335	-M3 CCN1340
DRAGONSKIN	DRAGONSKIN





Designation	CW +/-0,05	CRE	PDPT	for tool holder	1C/72 Article no. 70 344 ...	EUR	1C/72 Article no. 70 344 ...	EUR
	mm	mm	mm					
SX R3.00 N 1.50	3	1,5	1,5	-SX3	531	13,66	631	13,66
SX R4.00 N 2.00	4	2,0	2,0	-SX4	532	14,42	632	14,42
SX R5.00 N 2.50	5	2,5	2,5	-SX5	533	15,23	633	15,23
SX R6.00 N 3.00	6	3,0	3,0	-SX6			634	16,56

Steel	●	●
Stainless steel	○	●
Cast iron	●	●
Non ferrous metals		○
Heat resistant alloys		●
hardened materials		

→ v_c Page 101
→ Application recommendation on page 108

Internal machining | *External machining*



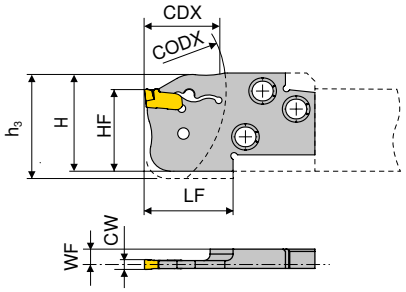




→ 13 → 14–19 → 20+21

ModularClamp MSS – Radial grooving module SX

▲ For parting, grooving and finish turning



Illustrations show right-hand versions



Designation	HF	CW	WF	LF	H	h_3	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 897 ... EUR		Right-hand 2C/71 Article no. 70 896 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm					
E20 R/L 20-SX2	20	2	3,57	22	24	27	60	20	SX .2..	85,88	**020**	85,88	**020**
E20 R/L 20-SX3	20	3	3,20	22	24	27	60	20	SX .3..	85,88	**120**	85,88	**120**
E25 R/L 20-SX2	25	2	5,07	22	30		75	20	SX .2..	86,51	**025**	86,51	**025**
E25 R/L 25-SX3	25	3	4,70	27	30		75	25	SX .3..	86,51	**125**	86,51	**125**
E25 R/L 35-SX3	25	3	4,70	37	30		75	35	SX .3..	87,34	**225**	87,34	**225**
E25 R/L 25-SX4	25	4	4,30	27	30		75	25	SX .4..	86,51	**325**	86,51	**325**
E25 R/L 35-SX4	25	4	4,30	37	30		75	35	SX .4..	87,34	**425**	87,34	**425**
E32 R/L 35-SX3	32	3	4,70	37	38		96	35	SX .3..	88,92	**032**	88,92	**032**
E32 R/L 35-SX4	32	4	4,30	37	38		96	35	SX .4..	88,92	**132**	88,92	**132**

2A/28



Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... EUR	
SX .2..	SX 2-3	26,59	**836**
SX .3..	SX 2-3	26,59	**836**
SX .4..	SX 4-6	27,13	**837**



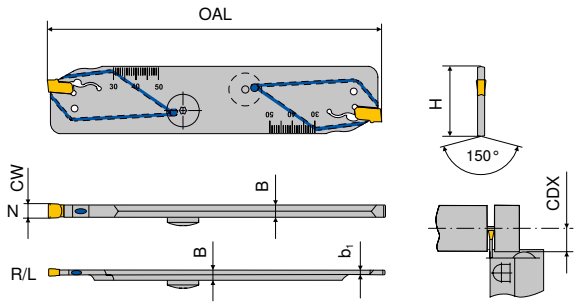


→ 8–12 → 93–95 → **Chapter 16**

Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX-DC Standard







Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CDX mm	for grooving inserts	R/L/N	2A/25 Article no. 70 884 ... EUR	
XLCF L 2602-DC-SX2	2	26	2,4	110	1,6	25	SX .2..	L	151,00	**712**
XLCF L 3202-DC-SX2	2	32	2,4	150	1,6	26	SX .2..	L	163,60	**702**
XLCF R 2602-DC-SX2	2	26	2,4	110	1,6	25	SX .2..	R	151,00	**512**
XLCF R 3202-DC-SX2	2	32	2,4	150	1,6	26	SX .2..	R	163,60	**502**
XLCF N 2603-DC-SX3	3	26	2,5	110		35	SX .3..	N	151,00	**613**
XLCF N 3203-DC-SX3	3	32	2,5	150		50	SX .3..	N	163,60	**603**
XLCF N 2604-DC-SX4	4	26	3,3	110		40	SX .4..	N	151,00	**614**
XLCF N 3204-DC-SX4	4	32	3,3	150		50	SX .4..	N	163,60	**604**
XLCF N 3205-DC-SX5	5	32	4,3	150		55	SX .5..	N	163,60	**605**
XLCF N 3206-DC-SX6	6	32	5,2	150		60	SX .6..	N	163,60	**606**

Spare parts for grooving inserts	Y7 Key D Article no. 80 950 ...	EUR		2A/28 Ejector SX Article no. 70 950 ...	EUR		2A/28 Sealing screw Article no. 70 950 ...	EUR	
SX .2..	T15 - IP	11,89	**128**	SX 2-3	26,59	**836**	M4 x 3	12,89	**450**
SX .3..	T15 - IP	11,89	**128**	SX 2-3	26,59	**836**	M4 x 3	12,89	**450**
SX .4..	T15 - IP	11,89	**128**	SX 4-6	27,13	**837**	M4 x 3	12,89	**450**
SX .5..	T15 - IP	11,89	**128**	SX 4-6	27,13	**837**	M4 x 3	12,89	**450**
SX .6..	T15 - IP	11,89	**128**	SX 4-6	27,13	**837**	M4 x 3	12,89	**450**

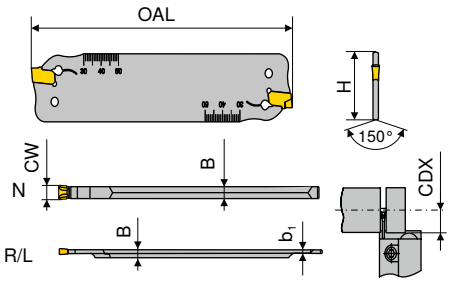


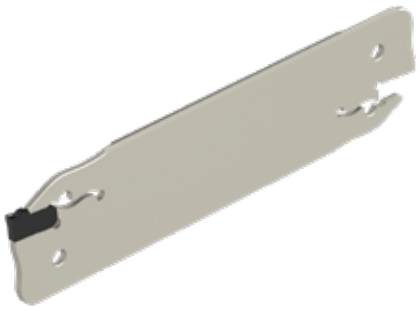



→ 8-12 → 97 → **Chapter 16** → **Chapter 16**

Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX Standard





2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 884 ...	EUR
XLCF L 2602-SX2	2	26	2,4	110	1,5	25	SX .2..	L	88,49	**212**
XLCF L 3202-SX2	2	32	2,4	150	1,5	25	SX .2..	L	92,59	**202**
XLCF R 2602-SX2	2	26	2,4	110	1,5	25	SX .2..	R	88,49	**012**
XLCF R 3202-SX2	2	32	2,4	150	1,5	25	SX .2..	R	92,59	**002**
XLCF N 2603-SX3	3	26	2,4	110		35	SX .3..	N	88,49	**113**
XLCF N 3203-SX3	3	32	2,4	150		50	SX .3..	N	92,59	**103**
XCLF N 2604-SX4	4	26	3,2	110		40	SX .4..	N	88,49	**114**
XLCF N 3204-SX4	4	32	3,2	150		50	SX .4..	N	92,59	**104**
XLCF N 3205-SX5	5	32	4,2	150		55	SX .5..	N	92,59	**105**
XLCF N 3206-SX6	6	32	5,2	150		60	SX .6..	N	92,59	**106**

2A/28



Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... EUR	
SX .2..	SX 2-3	26,59	**836**
SX .3..	SX 2-3	26,59	**836**
SX .4..	SX 4-6	27,13	**837**
SX .5..	SX 4-6	27,13	**837**
SX .6..	SX 4-6	27,13	**837**





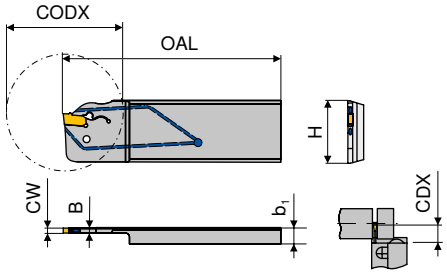

→ 8-12 → 98+99 → **Chapter 16** → **Chapter 16**

Please order SX assembly key separately if required.

11

MonoClamp – Radial Blade SX-DC reinforced





Illustrations show right-hand versions



2A/25

Designation	CW	H	B	OAL	b_1	CODX	CDX	for grooving inserts	R/L/N	Article no. 70 879 ...	
	mm	mm	mm	mm	mm	mm	mm			EUR	
XLCF L 2608-DC-SX3	3	26	2,5	110	8	66	33	SX .3..	L	151,00	**713**
XLCF L 3208-DC-SX3	3	32	2,5	110	8	66	33	SX .3..	L	163,60	**703**
XLCF R 2608-DC-SX3	3	26	2,5	110	8	66	33	SX .3..	R	151,00	**513**
XLCF R 3208-DC-SX3	3	32	2,5	110	8	66	33	SX .3..	R	163,60	**503**

2A/28



Ejector SX

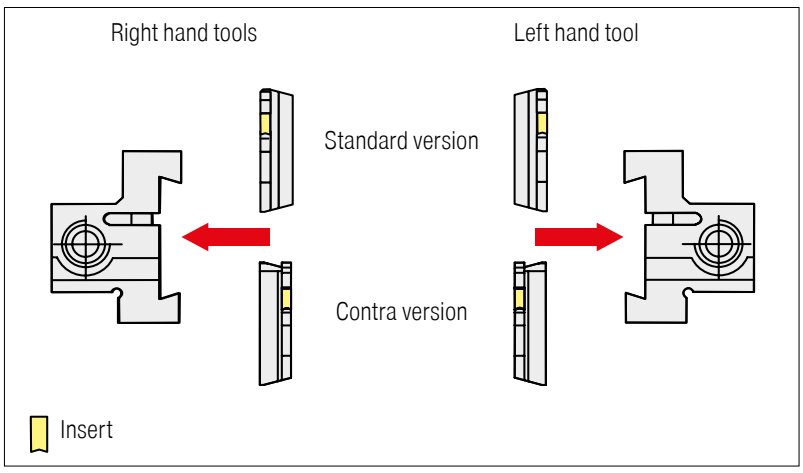
Spare parts for grooving inserts		Article no. 70 950 ...	
		EUR	
SX .2..	SX 2-3	26,59	**836**
SX .3..	SX 2-3	26,59	**836**
SX .4..	SX 4-6	27,13	**837**






→ 8–12 → 97 → **Chapter 16** → **Chapter 16**

Correct Tool Selection

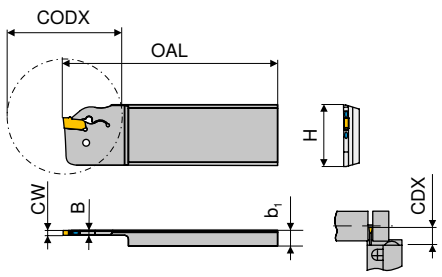






Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX reinforced





Illustrations show right-hand versions

2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CODX mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 879 ... EUR	
XLCF L 2608-SX2	2	26	1,5	110	8	44	22	SX .2..	L	135,50	**212** 1)
XLCF L 2608-SX3	3	26	2,5	110	8	44	22	SX .3..	L	135,50	**213** 1)
XLCF L 3208-SX3	3	32	2,5	110	8	66	33	SX .3..	L	127,40	**203**
XLCF L 3208-SX4	4	32	3,4	110	8	66	33	SX .4..	L	127,40	**204**
XLCF R 2608-SX2	2	26	1,5	110	8	44	22	SX .2..	R	135,50	**012** 1)
XLCF R 2608-SX3	3	26	2,5	110	8	44	22	SX .3..	R	135,50	**013** 1)
XLCF R 3208-SX3	3	32	2,5	110	8	66	33	SX .3..	R	127,40	**003**
XLCF R 3208-SX4	4	32	3,4	110	8	66	33	SX .4..	R	127,40	**004**

1) can be used in both directions

2A/28



Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... EUR	
SX .2..	SX 2-3	26,59	**836**
SX .3..	SX 2-3	26,59	**836**
SX .4..	SX 4-6	27,13	**837**





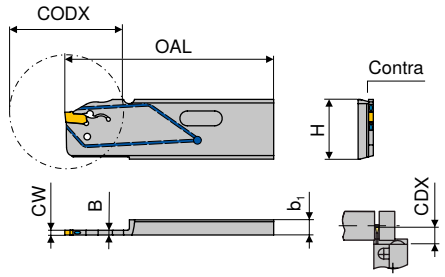

→ 8–12 | → 98+99 | → **Chapter 16** | → **Chapter 16**

Please order SX assembly key separately if required.

11

MonoClamp – SX-DC reinforced Contra radial blade







Illustrations show right-hand versions

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CODX mm	CDX mm	for grooving inserts	R/L/N	2A/25 Article no. 70 877 ... EUR	
XLCF L 3208C-DC-SX3	3	32	2,5	110	8	66	33	SX .3..	L	163,60	**703**
XLCF R 3208C-DC-SX3	3	32	2,5	110	8	66	33	SX .3..	R	163,60	**503**

2A/28



Ejector SX

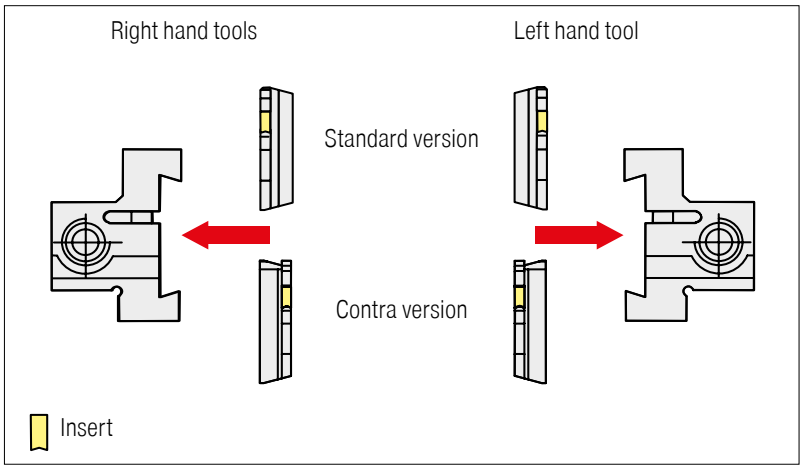
Spare parts		**Article no. 70 950 ...**	
for grooving inserts		**EUR**	
SX .3..	SX 2-3	26,59	**836**






→ 8–12 → 97 → **Chapter 16** → **Chapter 16**

Correct Tool Selection

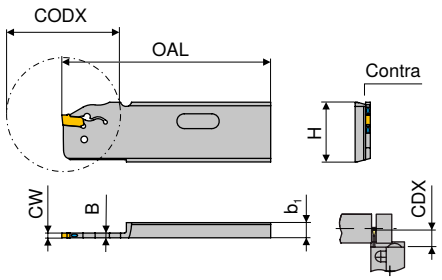


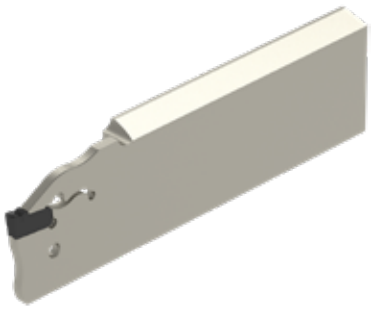




Please order SX assembly key separately if required.

MonoClamp – SX reinforced Contra radial blade





Illustrations show right-hand versions

2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CODX mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 877 ... EUR	
XLCF L 3208C-SX3	3	32	2,5	110	8	66	33	SX .3..	L	127,40	**203**
XLCF R 3208C-SX3	3	32	2,5	110	8	66	33	SX .3..	R	127,40	**003**

2A/28



Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... EUR	
SX .3..	SX 2-3	26,59	**836**





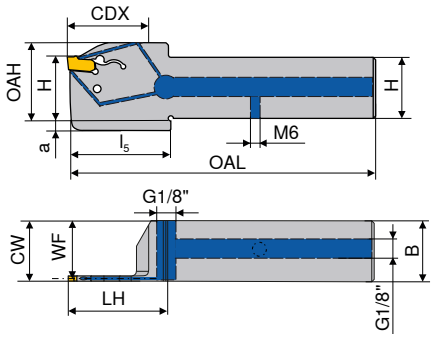

→ 8–12 | → 98+99 | → **Chapter 16** | → **Chapter 16**

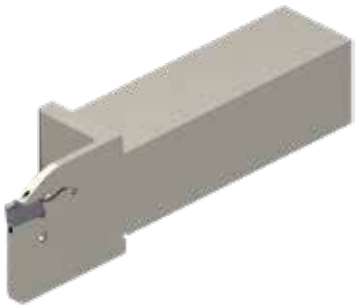
Please order SX assembly key separately if required.

11

MonoClamp – Radial Monoholder SX-DC







Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l_5 mm	OAH mm	CDX mm	a mm	for grooving inserts	Left-hand NEW 2C/71 Article no. 70 847 ... EUR		Right-hand NEW 2C/71 Article no. 70 847 ... EUR	
E12 R/L 0022-1212X-K-DC-SX2	12	12	2	11,2	71	27	28	22	22	5	SX .2..	146,10	**21201**	146,10	**21200**
E16 R/L 0026-1616X-K-DC-SX2	16	16	2	15,2	87	32	33	26	26	4	SX .2..	154,40	**21601**	154,40	**21600**
E20 R/L 0026-2020X-K-DC-SX2	20	20	2	19,2	102	32	33	31	26	5	SX .2..	174,90	**22001**	174,90	**22000**
E25 R/L 0033-2525X-K-DC-SX2	25	25	2	24,2	126	41	42	36	33	5	SX .2..	188,30	**22501**	188,30	**22500**
E16 R/L 0026-1616X-K-DC-SX3	16	16	3	14,8	87	32	33	26	26	4	SX .3..	154,40	**31601**	154,40	**31600**
E20 R/L 0026-2020X-K-DC-SX3	20	20	3	18,8	102	32	33	31	26	5	SX .3..	174,90	**32001**	174,90	**32000**
E25 R/L 0026-2525X-K-DC-SX3	25	25	3	23,8	117	33		31	26		SX .3..	188,30	**32501**	188,30	**32500**
E25 R/L 0033-2525X-K-DC-SX3	25	25	3	23,8	126	41	42	36	33	5	SX .3..	188,30	**32601**	188,30	**32600**
E20 R/L 0033-2020X-K-DC-SX4	20	20	4	18,3	109	39	40	32	33	5	SX .4..	174,90	**42001**	174,90	**42000**
E25 R/L 0033-2525X-K-DC-SX4	25	25	4	23,3	126	41	42	36	33	5	SX .4..	188,30	**42501**	188,30	**42500**
E25 R/L 0040-2525X-K-DC-SX4	25	25	4	23,3	133	48	49	38	40	6	SX .4..	188,30	**42601**	188,30	**42600**
E25 R/L 0040-2525X-K-DC-SX5	25	25	5	22,9	133	48	49	38	40	6	SX .5..	188,30	**52501**	188,30	**52500**
E25 R/L 0040-2525X-K-DC-SX6	25	25	6	22,4	133	48	49	38	40	6	SX .6..	188,30	**62501**	188,30	**62500**

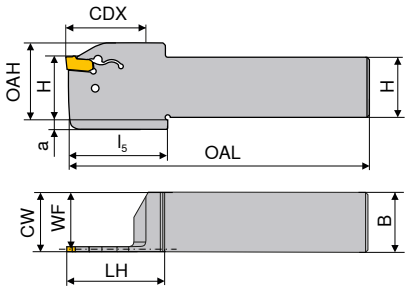
Spare parts for grooving inserts		2A/28 Ejector SX Article no. 70 950 ... EUR		2A/28 Coolant screw plug Article no. 70 950 ... EUR	
SX .2..	SX 2-3	26,59	**836**	G 1/8"	3,56 **294**
SX .3..	SX 2-3	26,59	**836**	G 1/8"	3,56 **294**
SX .4..	SX 4-6	27,13	**837**	G 1/8"	3,56 **294**
SX .5..	SX 4-6	27,13	**837**	G 1/8"	3,56 **294**
SX .6..	SX 4-6	27,13	**837**	G 1/8"	3,56 **294**

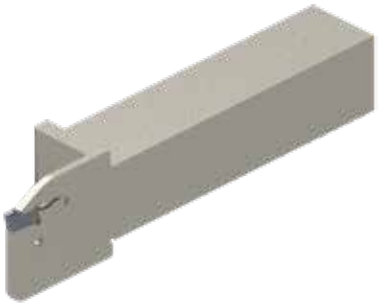


→ 8–12

Please order SX assembly key separately if required.

MonoClamp – Radial Monoholder SX





Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l_5 mm	OAH mm	CDX mm	a mm	for grooving inserts	Left-hand NEW 2C/71 Article no. 70 846 ...	EUR	Right-hand NEW 2C/71 Article no. 70 846 ...	EUR
E12 R/L 0022-1212K-K-SX2	12	12	2	11,2	125	27	28	22	22	5	SX .2..	98,78	**21201**	98,78	**21200**
E16 R/L 0026-1616K-K-SX2	16	16	2	15,2	125	33	33	26	26	4	SX .2..	100,80	**21601**	100,80	**21600**
E20 R/L 0026-2020K-K-SX2	20	20	2	19,2	125	33	33	31	26	5	SX .2..	118,30	**22001**	118,30	**22000**
E25 R/L 0033-2525M-K-SX2	25	25	2	24,2	150	42	42	36	33	5	SX .2..	125,50	**22501**	125,50	**22500**
E16 R/L 0026-1616K-K-SX3	16	16	3	14,8	125	33	33	26	26	4	SX .3..	100,80	**31601**	100,80	**31600**
E20 R/L 0026-2020K-K-SX3	20	20	3	18,8	125	31	33	31	26	5	SX .3..	118,30	**32001**	118,30	**32000**
E25 R/L 0026-2525M-K-SX3	25	25	3	23,8	150	33		31	26		SX .3..	125,50	**32501**	125,50	**32500**
E25 R/L 0033-2525M-K-SX3	25	25	3	23,8	150	42	42	36	33	5	SX .3..	125,50	**32601**	125,50	**32600**
E20 R/L 0033-2020K-K-SX4	20	20	4	18,3	125	40	40	32	33	5	SX .4..	118,30	**42001**	118,30	**42000**
E25 R/L 0033-2525M-K-SX4	25	25	4	23,3	150	42	42	36	33	5	SX .4..	125,50	**42501**	125,50	**42500**
E25 R/L 0040-2525M-K-SX4	25	25	4	23,3	150	49	49	38	40	6	SX .4..	125,50	**42601**	125,50	**42600**
E25 R/L 0040-2525M-K-SX5	25	25	5	22,9	150	49	49	38	40	6	SX .5..	125,50	**52501**	125,50	**52500**
E25 R/L 0040-2525M-K-SX6	25	25	6	22,4	150	49	49	38	40	6	SX .6..	125,50	**62501**	125,50	**62500**

2A/28



Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... EUR	
SX .2..	SX 2-3	26,59	**836**
SX .3..	SX 2-3	26,59	**836**
SX .4..	SX 4-6	27,13	**837**
SX .5..	SX 4-6	27,13	**837**
SX .6..	SX 4-6	27,13	**837**



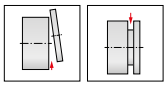
→ 8-12

Please order SX assembly key separately if required.

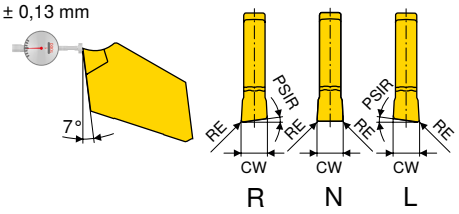
11

Insert FX

- ▲ Excellent cutting geometry with low cutting forces
- ▲ Very good swarf control also with low feed rates
- ▲ Reduced built-up edge



F	M	R



-F1 CTCP325	-F1 CTPP345	-F1 CTP1340
-F1 HCR1325	-F1 HCN1345	-F1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	PSIR	for tool holder	1A/15 Article no. 70 331 ... EUR		1A/15 Article no. 70 331 ... EUR		1A/15 Article no. 70 331 ... EUR	
FX 2.2 L 5-F1	L	2,2	0,15	5°	-FX 2.2			13,76	847	13,76	647
FX 3.1 L 5-F1	L	3,1	0,20	5°	-FX 3.1			13,76	851	13,76	651
FX 3.1 L 8-F1	L	3,1	0,20	8°	-FX 3.1			13,76	855		
FX 2.2 N 0.15-F1	N	2,2	0,15		-FX 2.2	13,76	998	13,76	848	13,76	648
FX 3.1 N 0.40-F1	N	3,1	0,40		-FX 3.1	13,76	906	13,76	856	13,76	656
FX 3.1 N 0.20-F1	N	3,1	0,20		-FX 3.1	13,76	902	13,76	852	13,76	652
FX 4.1 N 0.20-F1	N	4,1	0,20		-FX 4.1			14,77	860	14,77	660
FX 4.1 N 0.50-F1	N	4,1	0,50		-FX 4.1			14,77	864		
FX 2.2 R 5-F1	R	2,2	0,15	5°	-FX 2.2			13,76	849	13,76	649
FX 3.1 R 8-F1	R	3,1	0,20	8°	-FX 3.1			13,76	857		
FX 3.1 R 5-F1	R	3,1	0,20	5°	-FX 3.1			13,76	853	13,76	653

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 109

Note: reduce feed rate by 20–50 % with R/L version!

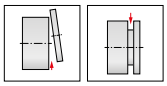
Internal machining *External machining*



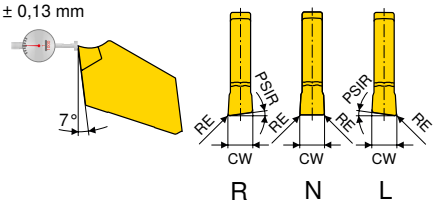
→ 27 → 29 → 28

Insert FX

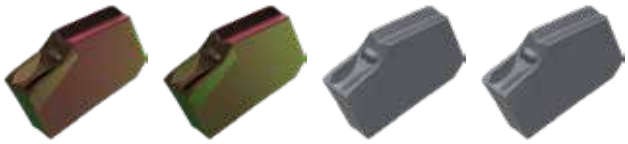
▲ Narrow version



F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCR1335	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	PSIR	for tool holder	1A/15 Article no. 70 330 ... EUR		1A/15 Article no. 70 330 ... EUR		1A/15 Article no. 70 330 ... EUR		1A/15 Article no. 70 330 ... EUR	
FX 2.2 L 4-M1	L	2,2	0,1	4°	-FX 2.2			13,76	550	13,76	800	13,76	600
FX 2.2 N 0.10-M1	N	2,2	0,1		-FX 2.2	13,76	902	13,76	552	13,76	802	13,76	602
FX 2.2 R 4-M1	R	2,2	0,1	4°	-FX 2.2			13,76	554	13,76	804	13,76	604
Steel						●		●		●		●	
Stainless steel						○		○		●		●	
Cast iron						●		●				●	
Non ferrous metals												○	
Heat resistant alloys												○	
hardened materials						○							

→ v_c Page 101
→ Application recommendation on page 109

Note: reduce feed rate by 20–50 % with R/L version!

11

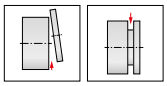
Internal machining *External machining*



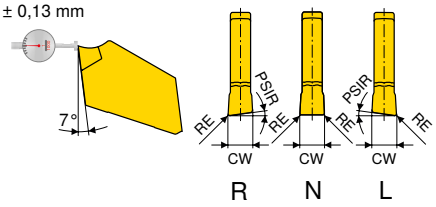
→ 27 → 29 → 28

Insert FX

▲ Wide version



F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCR1335	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW +/-0,05 mm	RE +/-0,05 mm	PSIR	for tool holder	1A/15 Article no. 70 332 ... EUR		1A/15 Article no. 70 332 ... EUR		1A/15 Article no. 70 332 ... EUR		1A/15 Article no. 70 332 ... EUR	
FX 3.1 L 6-M1	L	3,1	0,15	6°	-FX 3.1	13,76	900	13,76	550	13,76	800	13,76	600
FX 4.1 L 6-M1	L	4,1	0,20	6°	-FX 4.1			14,77	556	14,77	806	14,77	606
FX 3.1 N 0.15-M1	N	3,1	0,15		-FX 3.1	13,76	902	13,76	552	13,76	802	13,76	602
FX 4.1 N 0.20-M1	N	4,1	0,20		-FX 4.1	14,77	908	14,77	558	14,77	808	14,77	608
FX 5.1 N 0.25-M1	N	5,1	0,25		-FX 5.1	15,78	914	15,78	564	15,78	814	15,78	614
FX 6.5 N 0.30-M1	N	6,5	0,30		-FX 6.5	16,23	920	16,23	570			16,23	620
FX 8.2 N 0.40-M1	N	8,2	0,40		blades XLCEN 4608	18,46	924	18,46	574			18,46	624
FX 9.7 N 0.40-M1	N	9,7	0,40		blades XLCEN 4609	26,74	926	26,74	576			26,74	626
FX 3.1 R 6-M1	R	3,1	0,15	6°	-FX 3.1	13,76	904	13,76	554	13,76	804	13,76	604
FX 4.1 R 6-M1	R	4,1	0,20	6°	-FX 4.1			14,77	560	14,77	810	14,77	610
FX 5.1 R 6-M1	R	5,1	0,25	6°	-FX 5.1					15,78	816		

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 109

Note: reduce feed rate by 20–50 % with R/L version!

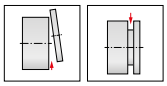
Internal machining *External machining*



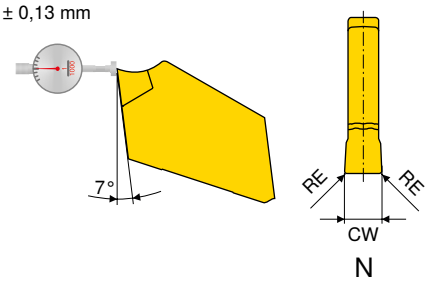
→ 27 → 29 → 28

Insert FX

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge
- ▲ Reduced built-up edge



F	M	R



N

-27P
H216T

-ALP
CWK26



1A/90

Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	for tool holder	Article no. 70 334 ...	
					EUR	
FX 2.2 N 0.10	N	2,2	0,10	-FX 2.2	12,86	**650**
FX 3.1 N 0.15	N	3,1	0,15	-FX 3.1	12,86	**652**
FX 4.1 N 0.15	N	4,1	0,15	-FX 4.1	13,76	**654**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 109

Internal machining *External machining*

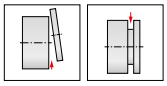


→ 27 → 29 → 28

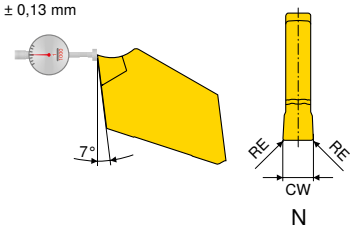
11

Insert FX

- Insert with excellent swarf control for a wide range of feed rates
- Very stable cutting edge



F	M	R
		



-R2 CTCP325	-R2 CTPP345	-R2 CTP1340
-R2 HCR1325	-R2 HCN1345	-R2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	IH	$CW_{-0,1}$ mm	$RE_{+/-0,05}$ mm	for tool holder	1A/15 Article no. 70 335 ...	EUR	1A/15 Article no. 70 335 ...	EUR	1A/15 Article no. 70 335 ...	EUR
FX 3.1 N 0.40-R2	N	3,1	0,4	-FX 3.1	902	13,76	852	13,76	652	13,76
FX 4.1 N 0.50-R2	N	4,1	0,5	-FX 4.1	908	14,77	858	14,77	658	14,77

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 109

Internal machining *External machining*

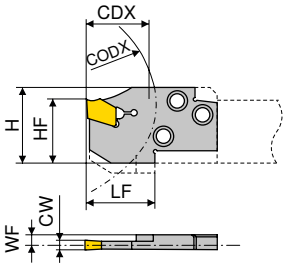




→ 27 → 29 → 28

ModularClamp MSS – Radial grooving module FX short/long

▲ For parting and grooving





Illustrations show right-hand versions

Designation	HF	CW	WF	LF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 876 ... EUR		Right-hand 2C/71 Article no. 70 875 ... EUR	
	mm	mm	mm	mm	mm	mm	mm					
E20 R/L 20-FX 2.2	23	2,2	3,58	22	27	60	20	FX 2.2 ..	85,88	**020**	85,88	**020**
E20 R/L 20-FX 3.1	23	3,1	3,20	22	27	60	20	FX 3.1 ..	85,88	**120**	85,88	**120**
E20 R/L 20-FX 4.1	23	4,1	2,80	22	27	60	20	FX 4.1 ..	85,88	**220**	85,88	**220**
E25 R/L 20-FX 2.2	25	2,2	5,08	22	30	75	20	FX 2.2 ..	86,51	**025**	86,51	**025**
E25 R/L 25-FX 3.1	25	3,1	4,70	27	30	75	25	FX 3.1 ..	86,51	**125**	86,51	**125**
E25 R/L 25-FX 4.1	25	4,1	4,30	27	30	75	25	FX 4.1 ..	86,51	**225**	86,51	**225**
E25 R/L 25-FX 5.1	25	5,1	3,90	27	30	75	25	FX 5.1 ..	86,51	**325**	86,51	**325**
E25 R/L 25-FX 6.5	25	6,5	3,30	27	30	75	25	FX 6.5 ..	86,51	**425**	86,51	**425**
E25 R/L 35-FX 3.1	25	3,1	4,70	37	30	75	35	FX 3.1 ..	87,34	**525**	87,34	**525**
E25 R/L 35-FX 4.1	25	4,1	4,30	37	30	75	35	FX 4.1 ..	87,34	**625**	87,34	**625**
E25 R/L 35-FX 5.1	25	5,1	3,90	37	30	75	35	FX 5.1 ..	87,34	**725**	87,34	**725**
E25 R/L 35-FX 6.5	25	6,5	3,30	37	30	75	35	FX 6.5 ..	87,34	**825**	87,34	**825**
E32 R/L 32-FX 3.1	32	3,1	4,70	34	38	96	32	FX 3.1 ..	88,92	**032**	88,92	**032**
E32 R/L 32-FX 4.1	32	4,1	4,30	34	38	96	32	FX 4.1 ..	88,92	**132**	88,92	**132**
E32 R/L 32-FX 5.1	32	5,1	3,90	34	38	96	32	FX 5.1 ..	88,92	**232**	88,92	**232**
E32 R/L 32-FX 6.5	32	6,5	3,30	34	38	96	32	FX 6.5 ..	88,92	**332**	88,92	**332**
E32 R/L 45-FX 3.1	32	3,1	4,70	47	38	96	45	FX 3.1 ..	90,39	**432**	90,39	**432**
E32 R/L 45-FX 4.1	32	4,1	4,30	47	38	96	45	FX 4.1 ..	90,39	**532**	90,39	**532**
E32 R/L 45-FX 5.1	32	5,1	3,90	47	38	96	45	FX 5.1 ..	90,39	**632**	90,39	**632**
E32 R/L 45-FX 6.5	32	6,5	3,30	47	38	96	45	FX 6.5 ..	90,39	**732**	90,39	**732**

11

2A/28



Ejector

Spare parts for grooving inserts	Article no. 70 950 ... EUR	
FX 2.2 ..	4,35	**375**
FX 3.1 ..	4,35	**376**
FX 4.1 ..	4,35	**376**
FX 5.1 ..	4,35	**376**
FX 6.5 ..	4,35	**376**

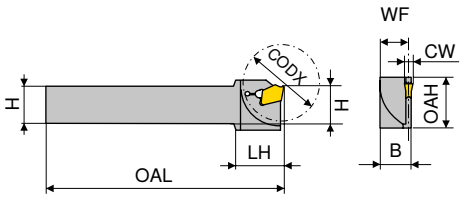


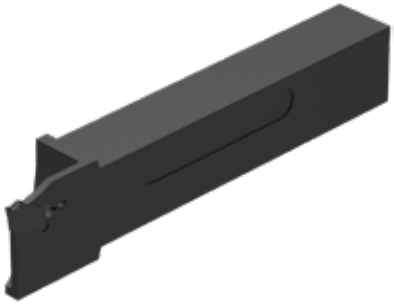


→ 22–26 → 93–95 → **Chapter 16**

MonoClamp – Radial Monoholder FX

Scope of supply:
Blade and ejector





Illustrations show right-hand versions

Designation	H	B	OAL	LH	OAH	CW	WF	CODX	for grooving inserts	Left-hand 2A/25 Article no. 70 837 ... EUR		Right-hand 2A/25 Article no. 70 836 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm					
XLCE R/L 1010 M-FX2.2	10	10	150	19,4	21	2,2	9,18	30	FX 2.2 ..	99,30	**101**	99,30	**101**
XLCE R/L 1212 F-FX2.2	12	12	80	21,0	21	2,2	11,18	30	FX 2.2 ..	99,30	**102**	94,37	**102**
XLCE R/L 1212 M-FX2.2	12	12	150	19,4	21	2,2	11,18	30	FX 2.2 ..	99,30	**103**	99,30	**103**
XLCE R/L 1414 M-FX2.2	14	14	150	19,4	21	2,2	13,18	30	FX 2.2 ..	102,30	**104**	102,30	**104**
XLCE R/L 1612 H-FX2.2	16	12	100	21,0	21	2,2	11,18	30	FX 2.2 ..	94,37	**105**	94,37	**105**
XLCF R/L 1612 H-FX3.1	16	12	100	21,4	25	3,1	10,80	35	FX 3.1 ..	94,37	**106**	94,37	**106**
XLCF R/L 2016 K-FX3.1	20	16	125	26,4	26	3,1	14,80	40	FX 3.1 ..	105,30	**107**	105,30	**107**
XLCF R/L 2520 M-FX3.1	25	20	150	35,2	34	3,1	18,80	50	FX 3.1 ..	108,20	**108**	108,20	**108**
XLCF R/L 2016 K-FX4.1	20	16	125	26,4	26	4,1	14,40	40	FX 4.1 ..	105,30	**109**	105,30	**109**
XLCF R/L 2520 M-FX4.1	25	20	150	35,2	34	4,1	18,40	50	FX 4.1 ..	108,20	**110**	108,20	**110**

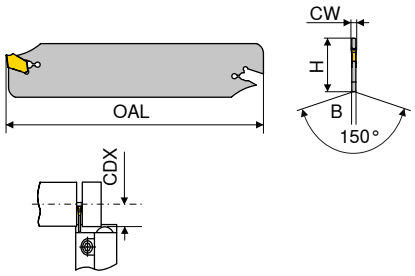
Spare parts for grooving inserts	2A/28 Ejector Article no. 70 950 ... EUR	
FX 2.2 ..	4,35	**375**
FX 3.1 ..	4,35	**376**
FX 4.1 ..	4,35	**376**

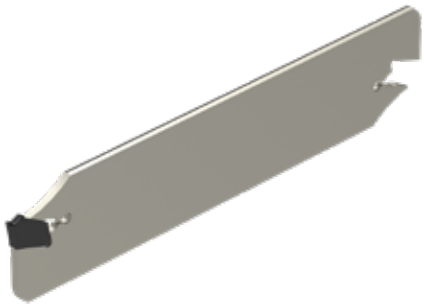


→ 22–26

MonoClamp – Radial Blade FX

Scope of supply:
Blade and ejector





2A/25

Designation	H	B	OAL	CW	CDX	for grooving inserts	Article no. 70 832 ...	
	mm	mm	mm	mm	mm		EUR	
XLCEN 2602 J 22 FX	26	1,65	110	2,2	25	FX 2.2 ..	80,95	**101**
XLCFN 2603 J 31 FX	26	2,40	110	3,1	35	FX 3.1 ..	79,27	**102**
XLCFN 2604 J 41 FX	26	3,20	110	4,1	40	FX 4.1 ..	79,27	**103**
XLCEN 3202 M 22 FX	32	1,65	150	2,2	30	FX 2.2 ..	80,95	**004**
XLCFN 3203 M 31 FX	32	2,40	150	3,1	50	FX 3.1 ..	82,21	**104**
XLCFN 3204 M 41 FX	32	3,20	150	4,1	50	FX 4.1 ..	88,71	**105**
XLCFN 3205 M 51 FX	32	4,00	150	5,1	55	FX 5.1 ..	97,30	**106**
XLCFN 3206 M 65 FX	32	5,20	150	6,5	55	FX 6.5 ..	105,30	**107**
XLCEN 4608 S 82 FX	46	6,80	250	8,2	80	FX 8.2 ..	251,30	**108**
XLCEN 4609 S 97 FX	46	8,00	250	9,7	80	FX 9.7 ..	251,30	**109**

2A/28


Ejector

Spare parts for grooving inserts	Article no. 70 950 ... EUR	
FX 2.2 ..	4,35	**375**
FX 3.1 ..	4,35	**376**
FX 4.1 ..	4,35	**376**
FX 5.1 ..	4,35	**376**
FX 6.5 ..	4,35	**376**
FX 8.2 ..	5,44	**377**
FX 9.7 ..	5,44	**377**

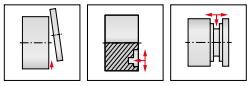



→ 22–26 → 98+99

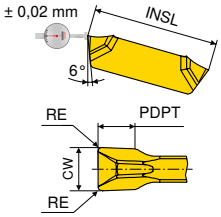
11

Insert GX 09/16

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R



-F2 CTP1340

-F2 CCN1340

DRAGONSKIN



Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	1C/72 Article no. 70 360 ... EUR	
GX 09-1 E2.00 N 0.20	9	2,0	0,2	1,5	GX 09-1	25,90	**600**
GX 09-1 E2.50 N 0.20	9	2,5	0,2	1,5	GX 09-1	25,90	**602**
GX 09-2 E3.00 N 0.30	9	3,0	0,3	2,0	GX 09-2	25,90	**604**
GX 16-1 E2.00 N 0.20	16	2,0	0,2	2,5	GX 16-1	26,34	**650**
GX 16-2 E3.00 N 0.30	16	3,0	0,3	3,0	GX 16-2	26,34	**652**
GX 16-3 E4.00 N 0.40	16	4,0	0,4	3,5	GX 16-3	28,84	**654**
GX 16-3 E5.00 N 0.40	16	5,0	0,4	3,5	GX 16-3	28,84	**656**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 101
→ Application recommendation on page 103

Internal machining



→ 40+41



→ 44+45

External machining



→ 38+39



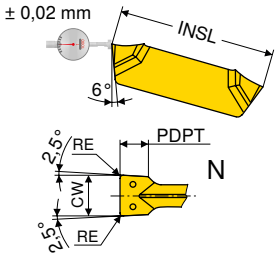
→ 42+43

Insert GX 09/16 – Standard

▲ Suitable for parting thin-walled workpieces



F	M	R
		



CTCP325	CTCP335	CTP1340
HCR1325	HCR1335	CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...	
	mm	mm	mm	mm		EUR		EUR		EUR	
GX 09-1 E2.00 N 0.20	9	2,0	0,2	1,5	GX 09-1	25,90	**984**			25,90	**634**
GX 09-1 E2.50 N 0.20	9	2,5	0,2	1,5	GX 09-1	25,90	**988**			25,90	**638**
GX 09-2 E3.00 N 0.30	9	3,0	0,3	2,0	GX 09-2	25,90	**992**			25,90	**642**
GX 16-1 E2.00 N 0.20	16	2,0	0,2	2,5	GX 16-1	26,34	**900**	26,34	**500**	26,34	**600**
GX 16-1 E2.50 N 0.20	16	2,5	0,2	2,5	GX 16-1	26,34	**904**	26,34	**504**	26,34	**604**
GX 16-2 E3.00 N 0.30	16	3,0	0,3	3,0	GX 16-2	26,34	**908**	26,34	**508**	26,34	**608**
GX 16-2 E3.00 N 0.50	16	3,0	0,5	3,0	GX 16-2	26,34	**910**				
GX 16-2 E3.50 N 0.30	16	3,5	0,3	3,0	GX 16-2	26,34	**912**	26,34	**512**	26,34	**612**
GX 16-3 E4.00 N 0.60	16	4,0	0,6	3,5	GX 16-3	28,84	**918**				
GX 16-3 E4.00 N 0.40	16	4,0	0,4	3,5	GX 16-3	28,84	**916**	28,84	**516**	28,84	**616**
GX 16-3 E5.00 N 0.40	16	5,0	0,4	3,5	GX 16-3	28,84	**924**	28,84	**524**	28,84	**624**
GX 16-4 E6.00 N 0.50	16	6,0	0,5	4,0	GX 16-4	30,44	**928**			30,44	**628**
GX 16-4 E6.00 N 0.80	16	6,0	0,8	4,0	GX 16-4	30,44	**930**				

Steel	●	●	●
Stainless steel	○	○	●
Cast iron	●	●	●
Non ferrous metals			○
Heat resistant alloys			●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 103

11

Internal machining *External machining*

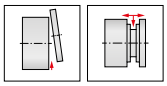




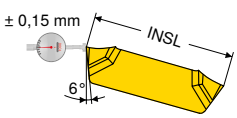

→ 40+41 → 44+45 → 38+39 → 42+43

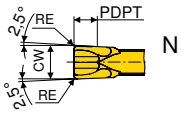
Insert GX 09/16

▲ Very good swarf control



F	M	R





-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
-M40 HCR1325	-M40 HCN1345	-M40 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 351 ...		1C/72 Article no. 70 351 ...		1C/72 Article no. 70 351 ...	
	mm	mm	mm	mm		EUR		EUR		EUR	
GX 09-1 E2.00 N 0.20	9	2	0,2	1,5	GX 09-1	16,92	**986**	16,92	**886**	16,92	**686**
GX 09-2 E3.00 N 0.30	9	3	0,3	2,0	GX 09-2	16,92	**994**	16,92	**894**	16,92	**694**
GX 16-1 E2.00 N 0.20	16	2	0,2	2,5	GX 16-1	17,14	**902**	17,14	**802**	17,14	**602**
GX 16-2 E3.00 N 0.30	16	3	0,3	3,0	GX 16-2	17,14	**910**	17,14	**810**	17,14	**610**
GX 16-3 E4.00 N 0.40	16	4	0,4	3,5	GX 16-3	19,08	**918**	19,08	**818**	19,08	**618**
GX 16-3 E5.00 N 0.40	16	5	0,4	3,5	GX 16-3	21,02	**926**	21,02	**826**	21,02	**626**
GX 16-4 E6.00 N 0.50	16	6	0,5	4,0	GX 16-4	22,93	**930**	22,93	**830**	22,93	**630**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 103

Internal machining *External machining*





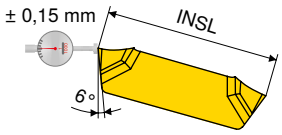

→ 40+41 → 44+45 → 38+39 → 42+43

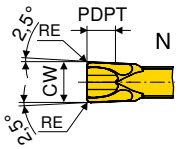
Insert GX 16

▲ Very good swarf control



F	M	R
		





-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 362 ...		1C/72 Article no. 70 362 ...		1C/72 Article no. 70 362 ...	
	mm	mm	mm	mm		EUR		EUR		EUR	
GX 16-1 E2.00 N 0.20	16	2	0,2	2,0	GX 16-1			17,14	800	17,14	600
GX 16-2 E3.00 N 0.20	16	3	0,2	2,5	GX 16-2	17,14	902	17,14	802	17,14	602
GX 16-3 E4.00 N 0.30	16	4	0,3	3,0	GX 16-3	19,08	904			19,08	604
Steel						●		●		●	
Stainless steel						○		●		●	
Cast iron						●				●	
Non ferrous metals										○	
Heat resistant alloys								○		●	
hardened materials						○					

→ v_c Page 101
→ Application recommendation on page 104

Internal machining | *External machining*



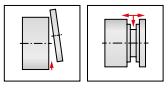



→ 40+41 | → 45 | → 38+39 | → 43

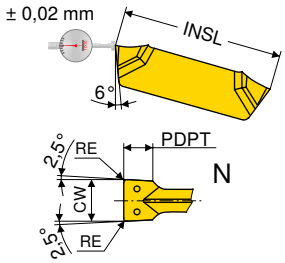
11

Insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ Ground periphery



F	M	R



-27P
H216T

-ALP
CWK26



1C/72

Designation	INSL	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	Article no. 70 350 ...	
	mm	mm	mm	mm		EUR	
GX 16-1 E2.00 N 0.20	16	2	0,2	2,5	GX 16-1	19,99	**650**
GX 16-2 E3.00 N 0.30	16	3	0,3	3,0	GX 16-2	19,99	**658**
GX 16-3 E4.00 N 0.40	16	4	0,4	3,5	GX 16-3	21,80	**670**
GX 16-4 E6.00 N 0.50	16	6	0,5	4,0	GX 16-4	22,93	**678**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 103

Internal machining



→ 40+41



→ 45

External machining



→ 38+39

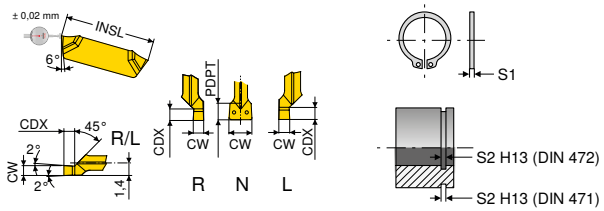


→ 43

Circlip groove insert GX 09/16 – Standard



F	M	R





Designation	IH	INSL	s_1	s_2	CW $_{+/-0,02}$	RE $_{+/-0,05}$	CDX	PDPT	for tool holder	1C/72 Article no. 70 352 ...		1C/72 Article no. 70 352 ...	
		mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
GX 09-1 S0.60 L	L	9	0,40	0,50	0,60		0,75		R/L 02-GX 09-1			25,90	**679**
GX 09-1 S0.80 L	L	9	0,60	0,70	0,80		0,94		R/L 02-GX 09-1			25,90	**681**
GX 09-1 S0.90 L	L	9	0,70	0,80	0,90		1,04		R/L 02-GX 09-1			25,90	**683**
GX 09-1 S1.00 L	L	9	0,80	0,90	1,00		1,14		R/L 02-GX 09-1			25,90	**684**
GX 09-1 S1.20 L	L	9	1,00	1,10	1,20		1,34		R/L 02-GX 09-1			25,90	**686**
GX 09-1 S1.40 L	L	9	1,20	1,30	1,40		1,53		R/L 02-GX 09-1			25,90	**688**
GX 09-1 S1.70 L	L	9	1,50	1,60	1,70		1,82		R/L 02-GX 09-1			25,90	**690**
GX 16-2 S0.60 L	L	16	0,40	0,50	0,60		0,75		R/L 03-GX 16-2			26,34	**607**
GX 16-2 S0.80 L	L	16	0,60	0,70	0,80		0,94		R/L 03-GX 16-2			26,34	**609**
GX 16-2 S0.90 L	L	16	0,70	0,80	0,90		1,04		R/L 03-GX 16-2			26,34	**611**
GX 16-2 S1.00 L	L	16	0,80	0,90	1,00		1,14		R/L 03-GX 16-2			26,34	**612**
GX 16-2 S1.20 L	L	16	1,00	1,10	1,20		1,34		R/L 03-GX 16-2			26,34	**614**
GX 16-2 S1.40 L	L	16	1,20	1,30	1,40		1,53		R/L 03-GX 16-2			26,34	**616**
GX 16-2 S1.70 L	L	16	1,50	1,60	1,70		1,82		R/L 03-GX 16-2			26,34	**618**
GX 16-2 S1.95 L	L	16	1,75	1,85	1,95		2,07		R/L 03-GX 16-2			26,34	**620**
GX 16-2 S2.25 L	L	16	2,00	2,15	2,25		2,36		R/L 03-GX 16-2			26,34	**622**
GX 09-1 S1.95 N	N	9	1,75	1,85	1,95	0,1		2,0	GX 09-1	25,90	**692**		
GX 09-1 S2.25 N	N	9	2,00	2,15	2,25	0,1		2,0	GX 09-1	25,90	**694**		
GX 09-2 S2.75 N	N	9	2,50	2,65	2,75	0,1		2,0	GX 09-2	25,90	**696**		
GX 09-2 S3.25 N	N	9	3,00	3,15	3,25	0,1		2,0	GX 09-2	25,90	**698**		
GX 16-2 S2.75 N	N	16	2,50	2,65	2,75	0,1		3,0	GX 16-2	26,34	**624**		
GX 16-2 S3.25 N	N	16	3,00	3,15	3,25	0,1		3,0	GX 16-2	26,34	**626**		
GX 16-3 S4.25 N	N	16	4,00	4,15	4,25	0,2		3,5	GX 16-3	28,84	**628**		
GX 16-4 S5.25 N	N	16	5,00	5,15	5,25	0,2		4,0	GX 16-4	30,44	**630**		
GX 09-1 S0.60 R	R	9	0,40	0,50	0,60		0,75		R/L 02-GX 09-1			25,90	**670**
GX 09-1 S0.80 R	R	9	0,60	0,70	0,80		0,94		R/L 02-GX 09-1			25,90	**672**
GX 09-1 S0.90 R	R	9	0,70	0,80	0,90		1,04		R/L 02-GX 09-1			25,90	**674**
GX 09-1 S1.00 R	R	9	0,80	0,90	1,00		1,14		R/L 02-GX 09-1			25,90	**676**
GX 09-1 S1.20 R	R	9	1,00	1,10	1,20		1,34		R/L 02-GX 09-1			25,90	**678**
GX 09-1 S1.40 R	R	9	1,20	1,30	1,40		1,53		R/L 02-GX 09-1			25,90	**680**
GX 09-1 S1.70 R	R	9	1,50	1,60	1,70		1,82		R/L 02-GX 09-1			25,90	**682**
GX 16-2 S0.60 R	R	16	0,40	0,50	0,60		0,75		R/L 03-GX 16-2			26,34	**695**
GX 16-2 S0.80 R	R	16	0,60	0,70	0,80		0,94		R/L 03-GX 16-2			26,34	**697**
GX 16-2 S0.90 R	R	16	0,70	0,80	0,90		1,04		R/L 03-GX 16-2			26,34	**699**
GX 16-2 S1.00 R	R	16	0,80	0,90	1,00		1,14		R/L 03-GX 16-2			26,34	**600**
GX 16-2 S1.20 R	R	16	1,00	1,10	1,20		1,34		R/L 03-GX 16-2			26,34	**602**
GX 16-2 S1.40 R	R	16	1,20	1,30	1,40		1,53		R/L 03-GX 16-2			26,34	**604**
GX 16-2 S1.70 R	R	16	1,50	1,60	1,70		1,82		R/L 03-GX 16-2			26,34	**606**
GX 16-2 S1.95 R	R	16	1,75	1,85	1,95		2,07		R/L 03-GX 16-2			26,34	**608**
GX 16-2 S2.25 R	R	16	2,00	2,15	2,25		2,36		R/L 03-GX 16-2			26,34	**610**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 101
→ Application recommendation on page 104

Attention – applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

Internal machining *External machining*

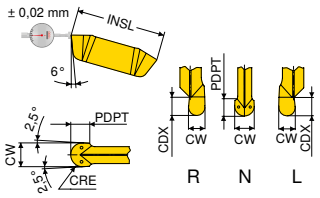


→ 40+41 → 44+45 → 38+39 → 42+43

Radius groove insert GX 09/16



F	M	R
		



CTCP325	CTCP325	CTP1340
HCR1325	HCR1325	CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	IH	INSL	CW +/-0,02	CRE	PDPT	CDX	for tool holder	1C/72 Article no. 70 354 ...		1C/72 Article no. 70 354 ...		1C/72 Article no. 70 354 ...	
		mm	mm	mm	mm	mm		EUR		EUR		EUR	
GX 09-1 R0.80 L	L	9	1,6	0,8		1,78	R/L 02-GX 09-1	31,23	**988**				
GX 16-2 R0.80 L	L	16	1,6	0,8		1,78	R/L 03-GX 16-2	32,02	**912**				
GX 16-2 R1.00 L	L	16	2,0	1,0		2,18	R/L 03-GX 16-2	32,02	**916**				
GX 16-2 R1.20 L	L	16	2,4	1,2		2,58	R/L 03-GX 16-2	32,02	**920**				
GX 09-1 R1.00 N	N	9	2,0	1,0	1,0		GX 09-1			31,23	**992**		
GX 09-1 R1.20 N	N	9	2,4	1,2	1,2		GX 09-1			31,23	**996**		
GX 16-2 R1.50 N	N	16	3,0	1,5	1,5		GX 16-2			32,02	**924**	32,02	**624**
GX 16-3 R2.00 N	N	16	4,0	2,0	2,0		GX 16-3			34,76	**928**	34,76	**628**
GX 16-3 R2.50 N	N	16	5,0	2,5	2,5		GX 16-3			34,76	**932**	34,76	**632**
GX 16-4 R3.00 N	N	16	6,0	3,0	3,0		GX 16-4			36,35	**936**	36,35	**636**
GX 09-1 R0.80 R	R	9	1,6	0,8		1,78	R/L 02-GX 09-1	31,23	**984**				
GX 16-2 R0.80 R	R	16	1,6	0,8		1,78	R/L 03-GX 16-2	32,02	**900**				
GX 16-2 R1.00 R	R	16	2,0	1,0		2,18	R/L 03-GX 16-2	32,02	**904**				
GX 16-2 R1.20 R	R	16	2,4	1,2		2,58	R/L 03-GX 16-2	32,02	**908**				

Steel	●	●	●
Stainless steel	○	○	●
Cast iron	●	●	●
Non ferrous metals			○
Heat resistant alloys			●
hardened materials	○	○	

→ v_c Page 101
→ Application recommendation on page 104

Attention – applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

Internal machining *External machining*





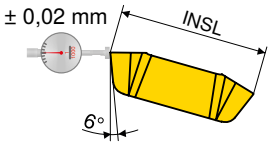

→ 40+41 → 44+45 → 38+39 → 42+43

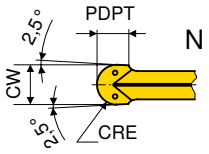
Radius groove insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ Ground periphery



F	M	R
		





-27P
H216T

-ALP
CWK26



1C/72

Designation	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	for tool holder	Article no. 70 354 ... EUR	
GX 16-2 R1.50 N	16	3	1,5	1,5	GX 16-2	24,07	**674**
GX 16-3 R2.00 N	16	4	2,0	2,0	GX 16-3	26,01	**678**
GX 16-3 R2.50 N	16	5	2,5	2,5	GX 16-3	26,01	**682**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 104

Internal machining | *External machining*


→ 40+41


→ 45

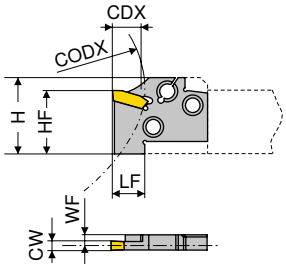

→ 38+39


→ 43

11

ModularClamp MSS – Radial grooving module GX 09/16

- For circlip grooves = 2,75 mm
- For radius grooves up to = 1,2 mm
- For external recessing



Illustrations show right-hand versions



Designation	CW	WF	LF	HF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 871 ...		Right-hand 2C/71 Article no. 70 870 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
E12 R/L 02-GX 09-1	<1,95	3,15	8	12	14,5	36	2	GX 09-1 ..R/L	84,93	**112**	84,93	**112**
E16 R/L 02-GX 09-1	<1,95	3,15	8	16	19,5	48	2	GX 09-1 ..R/L	85,88	**116**	85,88	**116**
E20 R/L 03-GX 16-2	<2,75	3,40	13	20	24,0	60	3	GX 16-2 ..R/L	85,88	**120**	85,88	**120**
E25 R/L 03-GX 16-2	<2,75	4,90	13	25	30,0	75	3	GX 16-2 ..R/L	86,51	**125**	86,51	**125**
E32 R/L 03-GX 16-2	<2,75	4,90	13	32	38,0	96	3	GX 16-2 ..R/L	87,34	**132**	87,34	**132**

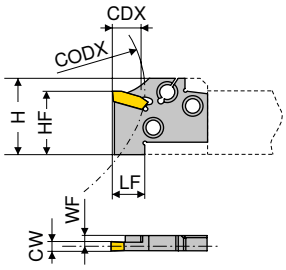




→ 30–37 → 93–95 → **Chapter 16**

ModularClamp MSS – Radial grooving module GX 09/16

- For grooving and turning
- For circlip grooves = 5,25 mm
- For radius grooves up to = 2,5 mm
- For external recessing



Illustrations show right-hand versions



Designation	CW	WF	LF	HF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 866 ...		Right-hand 2C/71 Article no. 70 865 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
E12 R/L 07-GX 09-1	2,00 - 2,75	3,15	8	12	14,5	36	7	GX 09-1 ..N	84,93	**012**	84,93	**012**
E12 R/L 07-GX 09-2	2,76 - 3,75	3,15	8	12	14,5	36	7	GX 09-2 ..N	84,93	**112**	84,93	**112**
E16 R/L 07-GX 09-1	2,00 - 2,75	3,15	8	16	19,5	48	7	GX 09-1 ..N	85,88	**016**	85,88	**016**
E16 R/L 07-GX 09-2	2,76 - 3,75	3,15	8	16	19,5	48	7	GX 09-2 ..N	85,88	**116**	85,88	**116**
E20 R/L 12-GX 16-1	2,00 - 2,75	3,75	13	20	24,0	60	12	GX 16-1 ..N	85,88	**020**	85,88	**020**
E20 R/L 12-GX 16-2	2,76 - 3,75	3,40	13	20	24,0	60	12	GX 16-2 ..N	85,88	**120**	85,88	**120**
E20 R/L 12-GX 16-3	3,76 - 5,00	2,93	13	20	24,0	60	12	GX 16-3 ..N	85,88	**220**	85,88	**220**
E25 R/L 12-GX 16-1	2,00 - 2,75	5,25	13	25	30,0	75	12	GX 16-1 ..N	86,51	**025**	86,51	**025**
E25 R/L 12-GX 16-2	2,76 - 3,75	4,90	13	25	30,0	75	12	GX 16-2 ..N	86,51	**125**	86,51	**125**
E25 R/L 12-GX 16-3	3,76 - 5,00	4,43	13	25	30,0	75	12	GX 16-3 ..N	86,51	**225**	86,51	**225**
E25 R/L 12-GX 16-4	5,01 - 6,50	3,80	13	25	30,0	75	12	GX 16-4 ..N	86,51	**325**	86,51	**325**
E32 R/L 12-GX 16-2	2,76 - 3,75	4,90	13	32	38,0	96	12	GX 16-2 ..N	87,34	**132**	87,34	**132**
E32 R/L 12-GX 16-3	3,76 - 5,00	4,43	13	32	38,0	96	12	GX 16-3 ..N	87,34	**232**	87,34	**232**
E32 R/L 12-GX 16-4	5,01 - 6,50	3,80	13	32	38,0	96	12	GX 16-4 ..N	87,34	**332**	87,34	**332**

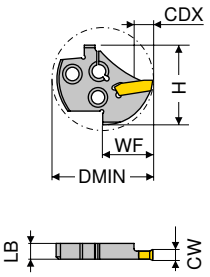




→ 30–37 → 93–95 → **Chapter 16**

ModularClamp MSS – Radial Grooving module GX 09/16 for Internal machining

- For circlip grooves = 2,75 mm
- For radius grooves up to = 1,2 mm



Illustrations show right-hand versions



Designation	CW	LB	WF	H	CDX	DMIN	for grooving inserts	Left-hand 2C/71 Article no. 70 886 ... EUR		Right-hand 2C/71 Article no. 70 885 ... EUR	
	mm	mm	mm	mm	mm	mm					
I16 R/L 02-GX 09-1	<1,95	3,8	10,0	16,4	2	20	GX 09-1 ..R/L	85,88	**016**	85,88	**016**
I20 R/L 02-GX 09-1	<1,95	3,8	12,0	20,3	2	25	GX 09-1 ..R/L	85,88	**020**	85,88	**020**
I25 R/L 02-GX 09-1	<1,95	3,8	15,5	24,9	2	32	GX 09-1 ..R/L	86,51	**025**	86,51	**025**
I32 R/L 03-GX 16-2	<2,75	5,9	20,0	32,2	3	40	GX 16-2 ..R/L	87,34	**032**	87,34	**032**
I40 R/L 03-GX 16-2	<2,75	5,9	24,5	39,6	3	50	GX 16-2 ..R/L	88,08	**040**	88,08	**040**

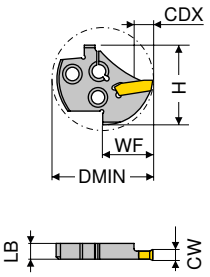
Right hand module → left hand insert only
Left hand module → right hand insert only




→ 30–37 → 96

ModularClamp MSS – Radial Grooving module 09/16 for Internal machining

- For circlip grooves = 5,25 mm
- For radius grooves up to = 2,5 mm





Illustrations show right-hand versions

Designation	CW	LB	WF	H	CDX	DMIN	for grooving inserts	Left-hand 2C/71 Article no. 70 881 ...		Right-hand 2C/71 Article no. 70 880 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
I16 R/L 04-GX 09-1	2,00 - 2,75	3,8	10,0	16,4	4	20	GX 09-1 ..N	85,88	**017**	85,88	**017**
I16 R/L 04-GX 09-2	2,76 - 3,75	3,8	10,0	16,4	4	20	GX 09-2 ..N	85,88	**117**	85,88	**117**
I20 R/L 05-GX 09-1	2,00 - 2,75	3,8	12,0	20,3	5	25	GX 09-1 ..N	85,88	**021**	85,88	**021**
I20 R/L 05-GX 09-2	2,76 - 3,75	3,8	12,0	20,3	5	25	GX 09-2 ..N	85,88	**121**	85,88	**121**
I25 R/L 06-GX 09-1	2,00 - 2,75	3,8	15,5	24,9	6	32	GX 09-1 ..N	86,51	**026**	86,51	**026**
I25 R/L 06-GX 09-2	2,76 - 3,75	3,8	15,5	24,9	6	32	GX 09-2 ..N	86,51	**126**	86,51	**126**
I32 R/L 09-GX 16-1	2,00 - 2,75	5,9	20,0	32,2	9	40	GX 16-1 ..N	87,34	**033**	87,34	**033**
I32 R/L 09-GX 16-2	2,76 - 3,75	5,9	20,0	32,2	9	40	GX 16-2 ..N	87,34	**133**	87,34	**133**
I32 R/L 09-GX 16-3	3,76 - 5,00	5,9	20,0	32,2	9	40	GX 16-3 ..N	87,34	**233**	87,34	**233**
I32 R/L 09-GX 16-4	5,01 - 6,50	5,9	20,0	32,2	9	40	GX 16-4 ..N	87,34	**333**	87,34	**333**
I40 R/L 10-GX 16-1	2,00 - 2,75	5,9	24,5	39,6	10	50	GX 16-1 ..N	88,08	**041**	88,08	**041**
I40 R/L 10-GX 16-2	2,76 - 3,75	5,9	24,5	39,6	10	50	GX 16-2 ..N	88,08	**141**	88,08	**141**
I40 R/L 10-GX 16-3	3,76 - 5,00	5,9	24,5	39,6	10	50	GX 16-3 ..N	88,08	**241**	88,08	**241**
I40 R/L 10-GX 16-4	5,01 - 6,50	5,9	24,5	39,6	10	50	GX 16-4 ..N	88,08	**341**	88,08	**341**

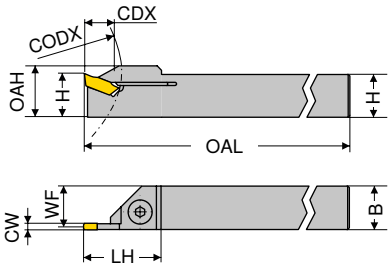




→ 30–37 → 96

11

MonoClamp – Radial Monoholder GX 09

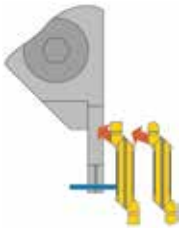




Illustrations show right-hand versions

Designation	H	B	CW	WF	OAH	OAL	LH	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 863 ... EUR		Right-hand 2C/71 Article no. 70 862 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	mm					
E10 R/L 00-1010M-GX09	10	10	2,00 - 3,50	9,35	12	150	18	30	7	GX 09 ..	123,50	**010**	123,50	**010**

When using „R“ or „L“ tools the tool must be modified at the end face to ensure cutting clerance.

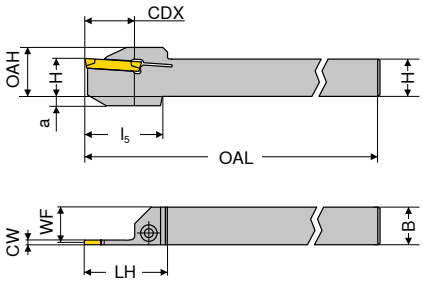


Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR	
GX 09 ..	T15	9,28	**113**	M4x11	10,34	**442**



→ 30–36

MonoClamp – Radial Monoholder GX 16

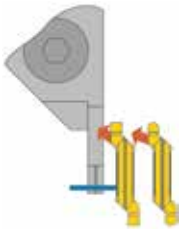




Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	a mm	CDX mm	for grooving inserts	Left-hand 2C/71 Article no. 70 889 ... EUR		Right-hand 2C/71 Article no. 70 888 ... EUR	
E12 R/L 0012-1212K-GX16-1	12	12	2,00 - 2,75	11,35	17	125	26	24	4	12	GX 16-1	91,12	**212**	91,12	**212**
E12 R/L 0012-1212K-GX16-2	12	12	2,76 - 3,75	11,00	17	125	26	24	4	12	GX 16-2	91,12	**312**	91,12	**312**
E16 R/L 0012-1616K-GX16-1	16	16	2,00 - 2,75	15,35	21	125	26	24	4	12	GX 16-1	97,30	**216**	97,30	**216**
E16 R/L 0012-1616K-GX16-2	16	16	2,76 - 3,75	15,00	21	125	26	24	4	12	GX 16-2	97,30	**316**	97,30	**316**
E16 R/L 0012-1616K-GX16-3	16	16	3,76 - 5,00	14,53	21	125	26	24	4	12	GX 16-3	97,30	**416**	97,30	**416**
E20 R/L 0012-2020K-GX16-1	20	20	2,00 - 2,75	19,35	25	125	26			12	GX 16-1	112,00	**220**	112,00	**220**
E20 R/L 0012-2020K-GX16-2	20	20	2,76 - 3,75	19,00	25	125	26			12	GX 16-2	112,00	**320**	112,00	**320**
E20 R/L 0012-2020K-GX16-3	20	20	3,76 - 5,00	18,53	25	125	26			12	GX 16-3	112,00	**420**	112,00	**420**
E25 R/L 0012-2525M-GX16-2	25	25	2,76 - 3,75	24,00	30	150	26			12	GX 16-2	119,10	**325**	119,10	**325**
E25 R/L 0012-2525M-GX16-3	25	25	3,76 - 5,00	23,53	30	150	26			12	GX 16-3	119,10	**425**	119,10	**425**

When using „R“ or „L“ tools the tool must be modified at the end face to ensure cutting clerance.



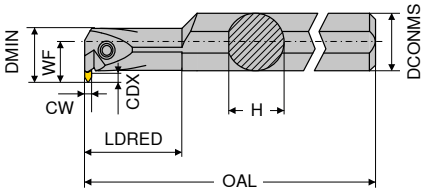
11

Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
GX 16-1	T15	9,28	**113**	M3,5x14	4,09	**160**
GX 16-2	T15	9,28	**113**	M3,5x14	4,09	**160**
GX 16-3	T15	9,28	**113**	M3,5x14	4,09	**160**



→ 30–37

MonoClamp – Radial Mono-boring bars GX 09



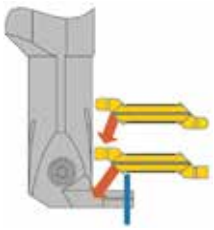


Illustrations show right-hand versions

Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 859 ... EUR		Right-hand 2C/71 Article no. 70 858 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm					
I12 R/L 90-2,5D-GX09	15,25	16	16	2,00 - 3,75	3	11	150	30	GX 09 ..	151,40	**012**	151,40	**012**

Right hand boring bar→ left hand insert only
Left hand boring bar→ right hand insert only

When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.

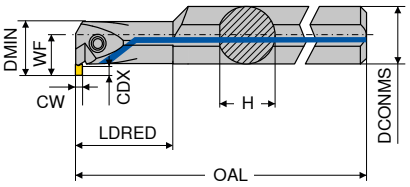


Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR	
GX 09 ..	T15	9,28	**113**	M3,5x12,5	8,97	**441**



→ 30–36

MonoClamp – Radial Mono-boring bars GX 16



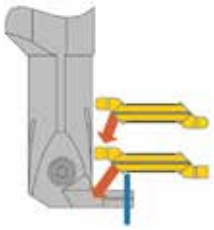


Illustrations show right-hand versions

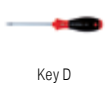
Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 893 ... EUR		Right-hand 2C/71 Article no. 70 892 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm					
I16 R/L 90-2.0D-GX16-1	15,25	16	20,5	2,00 - 2,75	5,0	13,5	150	32	GX 16-1	133,30	**516**	133,30	**516**
I16 R/L 90-2.0D-GX16-2	15,25	16	20,5	2,76 - 3,75	5,0	13,5	150	32	GX 16-2	133,30	**616**	133,30	**616**
I20 R/L 90-2.0D-GX16-2	19,00	20	25,0	2,76 - 3,75	5,5	15,5	180	40	GX 16-2	144,00	**620**	144,00	**620**
I25 R/L 90-2.0D-GX16-2	24,00	25	32,0	2,76 - 3,75	8,0	20,5	200	50	GX 16-2	167,40	**625**	167,40	**625**
I25 R/L 90-2.0D-GX16-3	24,00	25	32,0	3,76 - 5,00	10,0	22,5	200	50	GX 16-3	167,40	**725**	167,40	**725**
I32 R/L 90-2.0D-GX16-2	31,00	32	42,0	2,76 - 3,75	11,0	27,5	250	64	GX 16-2	194,60	**632**	194,60	**632**
I32 R/L 90-2.0D-GX16-3	31,00	32	42,0	3,76 - 5,00	11,0	27,5	250	64	GX 16-3	194,60	**732**	194,60	**732**

Right hand boring bar→ left hand insert only
Left hand boring bar→ right hand insert only

When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.



11


Key D

Y7


Clamping screw

2A/28

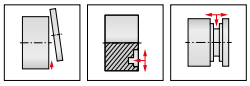
Spare parts for grooving inserts		Article no. 80 950 ... EUR			Article no. 70 950 ... EUR	
GX 16-1	T15	9,28	**113**	M4x14	8,58	**403**
GX 16-2	T15	9,28	**113**	M4x14	8,58	**403**
GX 16-3	T15	9,28	**113**	M4x14	8,58	**403**



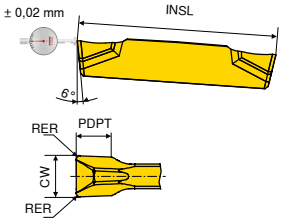
→ 30–37

Insert GX 24

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R



-F2 CTCP325	-F2 CTPP345	-F2 CTP1340
-F2 HCR1325	-F2 HCN1345	-F2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...	
	mm	mm	mm	mm		EUR		EUR		EUR	
GX 24-2 E3.00 N 0.30	24	3,0	0,3	2,5	GX 24-2	27,14	**962**	27,14	**862**	27,14	**662**
GX 24-2 E3.50 N 0.30	24	3,5	0,3	2,5	GX 24-2			27,14	**864**		
GX 24-3 E4.00 N 0.40	24	4,0	0,4	3,0	GX 24-3	29,29	**966**	29,29	**866**	29,29	**666**
GX 24-3 E5.00 N 0.40	24	5,0	0,4	3,5	GX 24-3	32,14	**970**	32,14	**870**	32,14	**671**
GX 24-4 E6.00 N 0.50	24	6,0	0,5	4,0	GX 24-4			35,32	**872**	35,32	**672**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

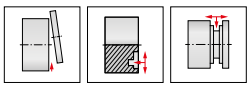
→ v_c Page 101
→ Application recommendation on page 103

Internal machining *External machining*

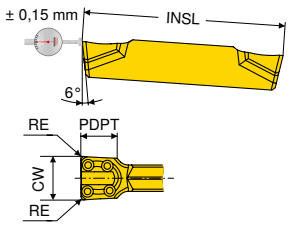


→ 54 → 59 → 53–56 → 57 → 58 → 60

Insert GX 24 -E



F	M	R
		





Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...	
	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
GX 24-2 E3.00 N 0.30	24	3	0,3	2,5	GX 24-2	18,27	**932**	18,27	**532**	18,01	**832**	18,27	**632**
GX 24-3 E4.00 N 0.40	24	4	0,4	3,0	GX 24-3	19,99	**936**	19,99	**536**	19,99	**836**	19,99	**636**
GX 24-3 E5.00 N 0.40	24	5	0,4	3,0	GX 24-3	21,80	**940**	21,80	**540**	21,80	**840**	21,80	**640**
GX 24-4 E6.00 N 0.50	24	6	0,5	3,5	GX 24-4	23,96	**944**	23,96	**544**	23,96	**844**	23,96	**644**

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 103

Internal machining *External machining*



→ 54 → 59 → 53–56 → 57 → 58 → 60

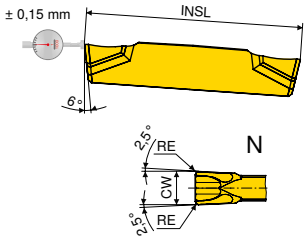
11

Insert GX 24

▲ Very good swarf control



F	M	R
		



-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL	CW +/-0,05	RE +/-0,05	for tool holder	1C/72 Article no. 70 363 ...		1C/72 Article no. 70 363 ...		1C/72 Article no. 70 363 ...	
	mm	mm	mm		EUR		EUR		EUR	
GX 24-1 E2.00 N 0.20	24	2	0,2	GX 24-1	18,27	**900**	18,27	**800**	18,27	**600**
GX 24-2 E3.00 N 0.20	24	3	0,2	GX 24-2	18,27	**902**	18,27	**802**	18,27	**602**
GX 24-3 E4.00 N 0.30	24	4	0,3	GX 24-3	19,99	**904**	19,99	**804**	19,99	**604**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 104

Internal machining *External machining*



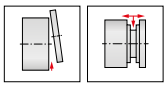




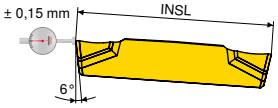

→ 54 | → 59 | → 53–56 | → 57 | → 58 | → 60

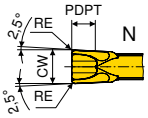
Insert GX 24

▲ Very good swarf control



F	M	R
		





-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
-M40 HCR1325	-M40 HCN1345	-M40 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 364 ...		1C/72 Article no. 70 364 ...		1C/72 Article no. 70 364 ...	
	mm	mm	mm	mm		EUR		EUR		EUR	
GX 24-2 E3.00 N 0.30	24	3	0,3	3,5	GX 24-2	18,27	**900**	18,27	**800**	18,27	**600**
GX 24-3 E4.00 N 0.40	24	4	0,4	4,0	GX 24-3	19,99	**902**	19,99	**802**	19,99	**602**
GX 24-3 E5.00 N 0.40	24	5	0,4	4,0	GX 24-3	21,80	**904**	21,80	**804**	21,80	**604**
GX 24-4 E6.00 N 0.50	24	6	0,5	4,0	GX 24-4	23,96	**906**	23,96	**806**	23,96	**606**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 103

Internal machining | *External machining*



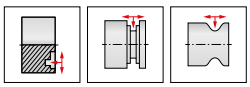




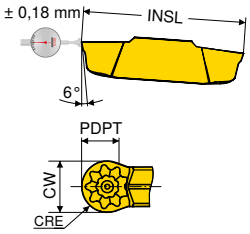

→ 54 | → 59 | → 53–56 | → 57 | → 58 | → 60

11

Radius groove insert GX 24



F	M	R



-M3 CTCP325	-M3 CTCP335
-M3 HCR1325	-M3 HCR1335
DRAGONSKIN	DRAGONSKIN




Designation	INSL mm	CW +/-0,05 mm	CRE mm	PDPT mm	for tool holder	1C/72 Article no. 70 354 ... EUR		1C/72 Article no. 70 354 ... EUR	
GX 24-2 R1.50 N	24,4	3	1,5	1,5	GX 24-2	24,30	952	24,30	552
GX 24-3 R2.00 N	24,4	4	2,0	2,5	GX 24-3	26,01	954	26,01	554
GX 24-3 R2.50 N	24,4	5	2,5	3,0	GX 24-3	27,14	956	27,14	556
GX 24-4 R3.00 N	24,4	6	3,0	4,0	GX 24-4	29,18	958	29,18	558

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys		
hardened materials	○	

→ v_c Page 101
→ Application recommendation on page 104

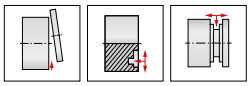
Internal machining *External machining*



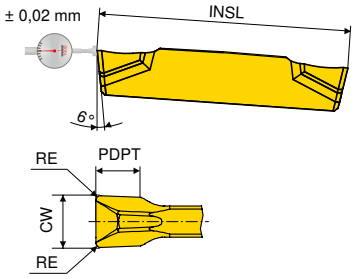
→ 54 → 59 → 53–56 → 57 → 58 → 60

Insert GX 24

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ ground periphery

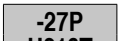


F	M	R



-27P
H216T

-ALP
CWK26





1C/72

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	Article no. 70 350 ... EUR	
GX 24-2 E3.00 N 0.30	24	3	0,3	2,5	GX 24-2	21,80	**682**
GX 24-3 E4.00 N 0.40	24	4	0,4	3,0	GX 24-3	23,96	**684**
GX 24-3 E5.00 N 0.40	24	5	0,4	3,5	GX 24-3	24,98	**686**
GX 24-4 E6.00 N 0.50	24	6	0,5	4,0	GX 24-4	25,90	**688**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 103

Internal machining *External machining*

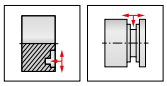


→ 54 → 59 → 53–56 → 57 → 58 → 60

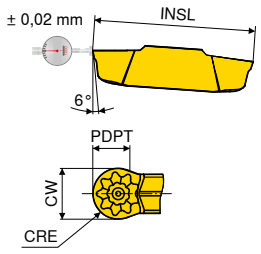
11

Radius grooving insert GX 24

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge
- ▲ Ground periphery



F	M	R



-27PF
H216T

-ALP-F
CWK26



1C/72

Designation	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	for tool holder	Article no. 70 353 ...	EUR	
GX 24-4 R3.00 N	25,4	6	3	4	GX 24-4		32,58	**500**
GX 24-5 R4.00 N	25,4	8	4	5	GX 24-5		34,40	**506**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 104

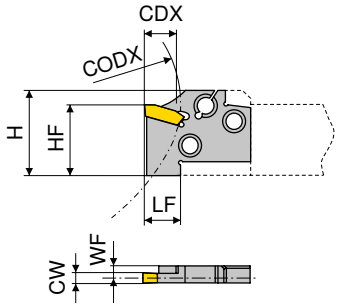
Internal machining | *External machining*



→ 54 | → 59 | → 53–56 | → 57 | → 58 | → 60

ModularClamp MSS – Radial grooving module GX 24

▲ For deep radial parting and grooving
▲ For turning





Illustrations show right-hand versions

Designation	CW	WF	LF	HF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 868 ...		Right-hand 2C/71 Article no. 70 867 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
E20 R/L 21-GX 24-1	2,00 - 2,75	3,85	22	20	24	60	21	GX 24-1	85,88	**020**	85,88	**020**
E20 R/L 21-GX 24-2	3	3,40	22	20	24	60	21	GX 24-2	85,88	**120**	85,88	**120**
E25 R/L 21-GX 24-1	2,00 - 2,75	5,10	22	25	30	75	21	GX 24-1	86,51	**025**	86,51	**025**
E25 R/L 21-GX 24-2	3	4,90	22	25	30	75	21	GX 24-2	86,51	**125**	86,51	**125**
E25 R/L 21-GX 24-3	4/5	4,43	22	25	30	75	21	GX 24-3	86,51	**225**	86,51	**225**
E25 R/L 21-GX 24-4	6	3,80	22	25	30	75	21	GX 24-4	86,51	**325**	86,51	**325**
E25 R/L 21-GX 24-5	8	2,95	22	25	30	75	21	GX 24-5	86,51	**425**	86,51	**425**
E32 R/L 21-GX 24-3	4/5	4,43	22	32	38	96	21	GX 24-3	87,34	**232**	87,34	**232**
E32 R/L 21-GX 24-4	6	3,80	22	32	38	96	21	GX 24-4	87,34	**332**	87,34	**332**



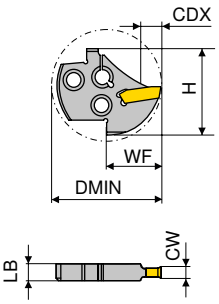


→ 46–52 → 93–95 → **Chapter 16**

11

ModularClamp MSS – Radial Grooving module GX 24 for Internal machining

▲ For grooving and turning





Neutral

Designation	CW	LB	WF	H	CDX	DMIN	for grooving inserts	2C/71 Article no. 70 880 ...	
	mm	mm	mm	mm	mm	mm		EUR	
I40 N 19-GX 24-2	2,76 - 3,75	6,2	33,5	40,7	19	60	GX 24-2 ..N	100,00	**340**
I40 N 19-GX 24-3	3,76 - 5,00	6,2	33,5	40,7	19	60	GX 24-3 ..N	100,00	**440**
I40 N 19-GX 24-4	5,01 - 6,50	6,2	33,5	40,7	19	60	GX 24-4 ..N	100,00	**540**

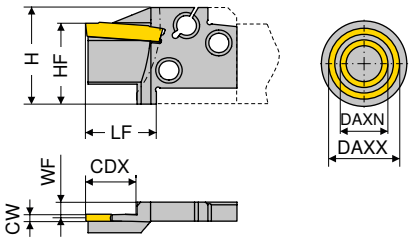




→ 46–52 → 96

ModularClamp MSS – Axial grooving module GX 24 short

- For axial grooving
- For face turning





Illustrations show right-hand versions

Designation	DAXN	DAXX	CW	WF	LF	HF	H	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 891 ... EUR		Right-hand 2C/71 Article no. 70 890 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm					
E20 R/L 14-GX 24-2 A	50	70	3	3,40	22	20	24	14	GX 24-2	111,50	**100**	111,50	**100**
E20 R/L 14-GX 24-2 A	70	100	3	3,40	22	20	24	14	GX 24-2	111,50	**102**	111,50	**102**
E20 R/L 14-GX 24-2 A	100	150	3	3,40	22	20	24	14	GX 24-2	111,50	**104**	111,50	**104**
E25 R/L 15-GX 24-2 A	50	70	3	4,90	22	25	30	15	GX 24-2	112,50	**200**	112,50	**200**
E25 R/L 15-GX 24-2 A	70	100	3	4,90	22	25	30	15	GX 24-2	112,50	**202**	112,50	**202**
E25 R/L 15-GX 24-2 A	100	150	3	4,90	22	25	30	15	GX 24-2	112,50	**204**	112,50	**204**
E25 R/L 15-GX 24-3 A	50	70	4/5	4,43	22	25	30	15	GX 24-3	112,50	**206**	112,50	**206**
E25 R/L 15-GX 24-3 A	70	100	4/5	4,43	22	25	30	15	GX 24-3	112,50	**208**	112,50	**208**
E25 R/L 15-GX 24-3 A	100	150	4/5	4,43	22	25	30	15	GX 24-3	112,50	**210**	112,50	**210**
E25 R/L 15-GX 24-3 A	150	300	4/5	4,43	22	25	30	15	GX 24-3	112,50	**212**	112,50	**212**
E25 R/L 15-GX 24-4 A	50	70	6	3,80	22	25	30	15	GX 24-4	112,50	**214**	112,50	**214**
E25 R/L 15-GX 24-4 A	70	100	6	3,80	22	25	30	15	GX 24-4	112,50	**216**	112,50	**216**
E25 R/L 15-GX 24-4 A	100	150	6	3,80	22	25	30	15	GX 24-4	112,50	**218**	112,50	**218**
E25 R/L 15-GX 24-4 A	150	300	6	3,80	22	25	30	15	GX 24-4	112,50	**220**	112,50	**220**
E32 R/L 15-GX 24-3 A	70	100	4/5	4,43	22	32	38	15	GX 24-3	113,40	**300**	113,40	**300**
E32 R/L 15-GX 24-3 A	100	150	4/5	4,43	22	32	38	15	GX 24-3	113,40	**302**	113,40	**302**
E32 R/L 15-GX 24-3 A	150	300	4/5	4,43	22	32	38	15	GX 24-3	113,40	**304**	113,40	**304**
E32 R/L 15-GX 24-4 A	70	100	6	3,80	22	32	38	15	GX 24-4	113,40	**306**	113,40	**306**
E32 R/L 15-GX 24-4 A	100	150	6	3,80	22	32	38	15	GX 24-4	113,40	**308**	113,40	**308**
E32 R/L 15-GX 24-4 A	150	300	6	3,80	22	32	38	15	GX 24-4	113,40	**310**	113,40	**310**
E32 R/L 15-GX 24-4 A	300	900	6	3,80	22	32	38	15	GX 24-4	113,40	**312**	113,40	**312**



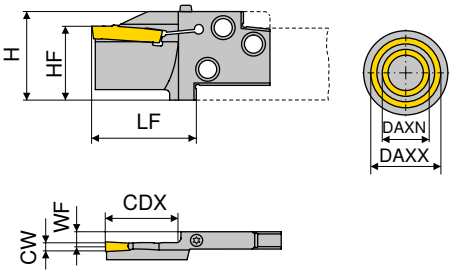


→ 46–52 → 93–95 → **Chapter 16**

11

ModularClamp MSS – Axial grooving module GX 24 long

- For axial grooving
- For face turning





Illustrations show right-hand versions

Designation	DAXN	DAXX	CW	WF	LF	HF	H	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 895 ... EUR		Right-hand 2C/71 Article no. 70 894 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm					
E25 R/L 21-GX 24-3 AS	50	70	4/5	4,53	35	25	30	21	GX 24-3	114,80	**200**	114,80	**200**
E25 R/L 21-GX 24-3 AS	70	100	4/5	4,53	35	25	30	21	GX 24-3	114,80	**202**	114,80	**202**
E25 R/L 21-GX 24-3 AS	100	150	4/5	4,53	35	25	30	21	GX 24-3	114,80	**204**	114,80	**204**
E25 R/L 21-GX 24-3 AS	150	300	4/5	4,53	35	25	30	21	GX 24-3	114,80	**206**	114,80	**206**
E25 R/L 25-GX 24-4 AS	50	70	6	3,90	35	25	30	25	GX 24-4	114,80	**210**	114,80	**210**
E25 R/L 25-GX 24-4 AS	70	100	6	3,90	35	25	30	25	GX 24-4	114,80	**212**	114,80	**212**
E25 R/L 25-GX 24-4 AS	100	150	6	3,90	35	25	30	25	GX 24-4	114,80	**214**	114,80	**214**
E25 R/L 25-GX 24-4 AS	150	300	6	3,90	35	25	30	25	GX 24-4	114,80	**216**	114,80	**216**

Axial modules version „GX 24 long“ can be clamped on both sides.


Key D


Clamping screw

Spare parts for grooving inserts		Y7 Article no. 80 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
GX 24-3	T15	9,28	**113**	M3,5x14	4,09	**160**
GX 24-4	T15	9,28	**113**	M3,5x14	4,09	**160**

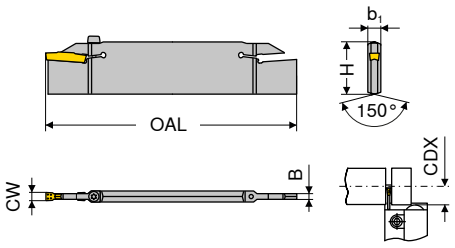


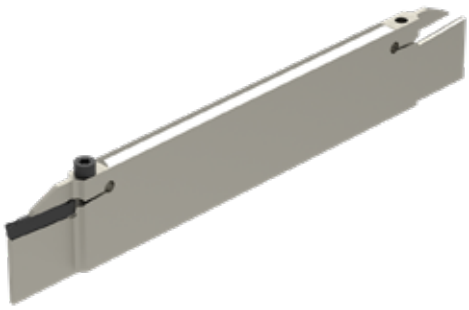


→ 46–52 → 93–95 → **Chapter 16**

MonoClamp – Radial Blade GX 24

Scope of supply:
Blade incl. clamping screw and tightening wrench





Designation	CW	H	B	b_1	OAL	CDX	for grooving inserts	2A/25 Article no. 70 834 ...	
	mm	mm	mm	mm	mm	mm		EUR	
XLCF N 3203-GX24-1S	2	32	1,05	6,2	180	21	GX 24-1	83,78	**102**
XLCF N 3203-GX24-2S	3	32	2,10	6,2	180	21	GX 24-2	85,04	**103**
XLCF N 3204-GX24-3S	4/5	32	3,05	6,2	180	21	GX 24-3	90,70	**104**
XLCF N 3206-GX24-4S	6	32	4,20	6,2	180	21	GX 24-4	107,20	**106**

Spare parts		Y7 Article no. 80 950 ...			2A/28 Article no. 70 950 ...	
		Key D			Clamping screw	
for grooving inserts		EUR			EUR	
GX 24-1	T15	9,28	**113**	M3,5x14	4,09	**160**
GX 24-2	T15	9,28	**113**	M3,5x14	4,09	**160**
GX 24-3	T15	9,28	**113**	M3,5x14	4,09	**160**
GX 24-4	T15	9,28	**113**	M3,5x14	4,09	**160**

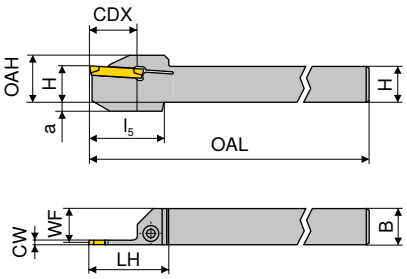




→ 46–52 → 98+99 → **Chapter 16**

11

MonoClamp – Radial Monoholder GX 24





Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	CDX mm	a mm	for grooving inserts	Left-hand 2C/71 Article no. 70 863 ... EUR		Right-hand 2C/71 Article no. 70 862 ... EUR	
E16 R/L 0021-1616K-GX24-1	16	16	2,00 - 2,75	15,20	21	125	35	32	21	4	GX 24-1	104,60	**160**	104,60	**160**
E16 R/L 0021-1616K-GX24-2	16	16	2,76 - 3,75	15,00	21	125	35	32	21	4	GX 24-2	104,60	**016**	104,60	**016**
E20 R/L 0021-2020K-GX24-1	20	20	2,00 - 2,75	19,20	25	125	35		21		GX 24-1	120,40	**200**	120,40	**200**
E20 R/L 0021-2020K-GX24-2	20	20	2,76 - 3,75	19,00	25	125	35		21		GX 24-2	120,40	**020**	120,40	**020**
E20 R/L 0021-2020K-GX24-3	20	20	3,76 - 5,00	18,53	25	125	35		21		GX 24-3	120,40	**120**	120,40	**120**
E25 R/L 0021-2525M-GX24-2	25	25	2,76 - 3,75	24,00	30	150	35		21		GX 24-2	128,70	**025**	128,70	**025**
E25 R/L 0021-2525M-GX24-3	25	25	3,76 - 5,00	23,53	30	150	35		21		GX 24-3	128,70	**125**	128,70	**125**
E25 R/L 0021-2525M-GX24-4	25	25	5,01 - 6,50	22,90	30	150	35		21		GX 24-4	128,70	**225**	128,70	**225**
E32 R/L 0021-3225P-GX24-2	32	25	2,76 - 3,75	24,00	37	170	35		21		GX 24-2	137,50	**032**	137,50	**032**
E32 R/L 0021-3225P-GX24-3	32	25	3,76 - 5,00	23,53	37	170	35		21		GX 24-3	137,50	**132**	137,50	**132**
E32 R/L 0021-3225P-GX24-4	32	25	5,01 - 6,50	22,90	37	170	35		21		GX 24-4	137,50	**232**	137,50	**232**

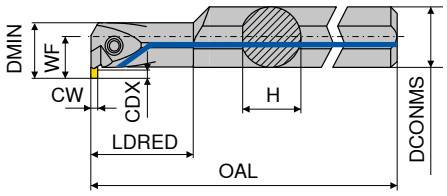
Spare parts for grooving inserts	Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...		
		EUR			EUR	
GX 24-1	T20	9,95	**114**	M4x18	4,76	**204**
GX 24-2	T20	9,95	**114**	M4x18	4,76	**204**
GX 24-3	T20	9,95	**114**	M4x18	4,76	**204**
GX 24-4	T20	9,95	**114**	M4x18	4,76	**204**



→ 46–52

MonoClamp – Radial Mono-boring bars GX 24



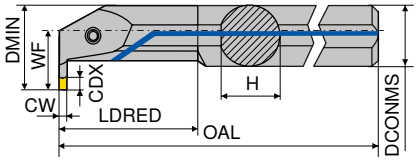




Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 895 ...		Right-hand 2C/71 Article no. 70 894 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
I32 R/L 90-2.0D-GX24-2	31,0	32	42	2,76 - 3,75	11	27,5	250	64	GX 24-2	194,60	132	194,60	132
I32 R/L 90-2.0D-GX24-3	31,0	32	42	3,76 - 5,00	11	27,5	250	64	GX 24-3	194,60	232	194,60	232
I40 R/L 90-2.0D-GX24-3	38,5	40	53	3,76 - 5,00	12	32,5	300	80	GX 24-3	241,80	240	241,80	240

MonoClamp – Radial Mono-boring bars GX 24







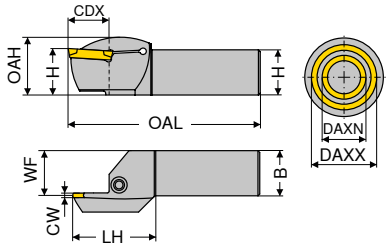
Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 895 ...		Right-hand 2C/71 Article no. 70 894 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
I32 R/L 90-2.0D-GX24-4	31,0	32	47	5,01 - 6,50	17,5	30,4	250	64	GX 24-4	194,60	332	194,60	332
I40 R/L 90-2.0D-GX24-4	38,5	40	57	5,01 - 6,50	17,5	34,4	300	80	GX 24-4	241,80	340	241,80	340

Spare parts for grooving inserts	Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
GX 24-2	9,95	114	5,72	404
GX 24-3	9,95	114	5,72	404
GX 24-4	9,95	114	5,72	404



→ 46–52

MonoClamp – Axial Monoholder GX24





Illustrations show right-hand versions

Designation	H	B	CW	WF	DAXN	DAXX	OAH	OAL	LH	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 904 ... EUR		Right-hand 2C/71 Article no. 70 903 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm					
E25 R/L 0012-2525X-GX24-2	25	25	3	24,7	40	45	32	115	45	12	GX 24-2	131,10	**200**	131,10	**200**
E25 R/L 0012-2525X-GX24-2	25	25	3	24,7	45	50	32	115	45	12	GX 24-2	131,10	**202**	131,10	**202**
E25 R/L 0016-2525X-GX24-2	25	25	3	24,7	50	60	32	115	45	16	GX 24-2	131,10	**204**	131,10	**204**
E25 R/L 0019-2525X-GX24-2	25	25	3	24,7	60	75	32	115	45	19	GX 24-2	131,10	**206**	131,10	**206**
E25 R/L 0019-2525X-GX24-2	25	25	3	24,7	75	100	32	115	45	19	GX 24-2	131,10	**208**	131,10	**208**
E25 R/L 0022-2525X-GX24-2	25	25	3	24,7	100	130	32	115	45	22	GX 24-2	131,10	**210**	131,10	**210**
E25 R/L 0022-2525X-GX24-2	25	25	3	24,7	130	180	32	115	45	22	GX 24-2	131,10	**212**	131,10	**212**
E25 R/L 0022-2525X-GX24-2	25	25	3	24,7	180	300	32	115	45	22	GX 24-2	131,10	**214**	131,10	**214**
E25 R/L 0012-2525X-GX24-3	25	25	4+5	24,2	40	45	32	115	45	12	GX 24-3	131,10	**230**	131,10	**230**
E25 R/L 0012-2525X-GX24-3	25	25	4+5	24,2	45	50	32	115	45	12	GX 24-3	131,10	**232**	131,10	**232**
E25 R/L 0020-2525X-GX24-3	25	25	4+5	24,2	50	60	32	115	45	20	GX 24-3	131,10	**234**	131,10	**234**
E25 R/L 0020-2525X-GX24-3	25	25	4+5	24,2	60	75	32	115	45	20	GX 24-3	131,10	**236**	131,10	**236**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24,2	75	100	32	115	45	22	GX 24-3	131,10	**238**	131,10	**238**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24,2	100	150	32	115	45	22	GX 24-3	131,10	**240**	131,10	**240**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24,2	150	300	32	115	45	22	GX 24-3	131,10	**242**	131,10	**242**
E25 R/L 0020-2525X-GX24-4	25	25	6	23,2	40	50	32	115	45	20	GX 24-4	131,10	**260**	131,10	**260**
E25 R/L 0022-2525X-GX24-4	25	25	6	23,2	50	70	32	115	45	22	GX 24-4	131,10	**262**	131,10	**262**
E25 R/L 0025-2525X-GX24-4	25	25	6	23,2	70	100	32	115	45	25	GX 24-4	131,10	**264**	131,10	**264**
E25 R/L 0025-2525X-GX24-4	25	25	6	23,2	100	150	32	115	45	25	GX 24-4	131,10	**266**	131,10	**266**
E25 R/L 0025-2525X-GX24-4	25	25	6	23,2	150	300	32	115	45	25	GX 24-4	131,10	**268**	131,10	**268**

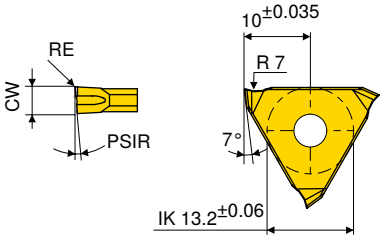
Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR	
GX 24-2	T15 - IP	11,89	**128**	M5x18	9,54	**865**
GX 24-3	T15 - IP	11,89	**128**	M5x18	9,54	**865**
GX 24-4	T15 - IP	11,89	**128**	M5x18	9,54	**865**



→ 46–52

TX Insert for parting

- ▲ Cutting depth 5.0 mm
- ▲ Cutting width 1.99–2.79 mm



CWX500



CWX500



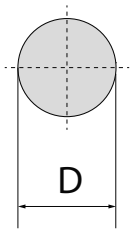
Illustrations show right-hand versions

Designation	CW -0,05	RE	PSIR	for tool holder	Left-hand Y6 Article no. 73 302 ... EUR		Right-hand Y6 Article no. 73 301 ... EUR	
	mm	mm						
TX R/L 0518.00.1	1,99	0,1	5°	R/L 207 .. . / 780 .. . 1	24,53	**204**	24,53	**204**
TX R/L 0521.00.2	2,29	0,1	5°	R/L 207 .. . / 780 .. . 2	24,53	**206**	24,53	**206**
TX R/L 0526.00.2	2,79	0,1	5°	R/L 207 .. . / 780 .. . 2	24,97	**208**	24,97	**208**

→ v_c Page 102

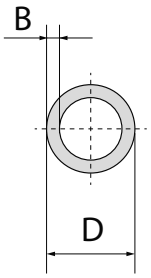
Grooving depth

Full material



max. 10 mm

Pipe



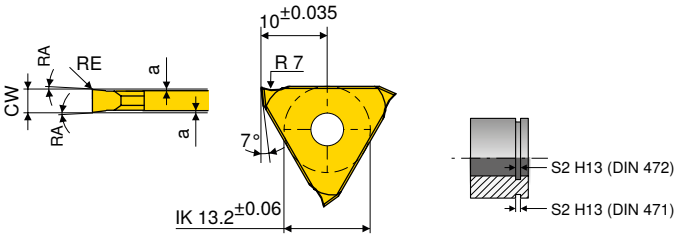
D ≥ 50 mm: Wall thickness B = approx. 5 mm
D ≤ 50 mm: Wall thickness B = approx. 4 mm

Internal machining	*External machining*
	
	→ 66–70

11

TX insert for circlip grooves

▲ For circlip grooves according to DIN 471 / 472



CWX500



Designation	s_2 mm	CW $_{-0,05}$ mm	RE mm	RA	a $_{+/-0,02}$ mm	for tool holder	Neutral Y6 Article no. 73 300 ... EUR	
TX N 0050.00.1	0,50	0,57	0,1	1	0,07	R/L .. .1	16,75	**204**
TX N 0060.00.1	0,60	0,67	0,1	1	0,07	R/L .. .1	16,75	**206**
TX N 0070.00.1	0,70	0,77	0,1	1	0,08	R/L .. .1	16,75	**208**
TX N 0080.00.1	0,80	0,87	0,1	1	0,08	R/L .. .1	16,75	**210**
TX N 0090.00.1	0,90	0,97	0,1	1	0,08	R/L .. .1	16,75	**212**
TX N 0100.00.1	1,00	1,07	0,1	1	0,09	R/L .. .1	16,75	**214**
TX N 0110.00.1	1,10	1,24	0,1	3	0,15	R/L .. .1	16,75	**216**
TX N 0130.00.1	1,30	1,44	0,1	3	0,15	R/L .. .1	16,75	**218**
TX N 0160.00.1	1,60	1,74	0,1	3	0,20	R/L .. .1	16,75	**220**
TX N 0185.00.1	1,85	1,99	0,1	3	0,20	R/L .. .1	16,75	**222**
TX N 0215.00.2	2,15	2,29	0,1	3	0,20	R/L .. .2	16,75	**224**
TX N 0265.00.2	2,65	2,79	0,1	3	0,20	R/L .. .2	16,75	**226**
TX N 0315.00.3	3,15	3,29	0,1	3	0,20	R/L .. .3	17,62	**228**
TX N 0415.00.4	4,15	4,29	0,1	3	0,20	R/L .. .4	17,72	**230**
TX N 0515.00.4	5,15	5,29	0,1	3	0,20	R/L .. .4	18,26	**232**

→ v_c Page 102

Internal machining



→ 70

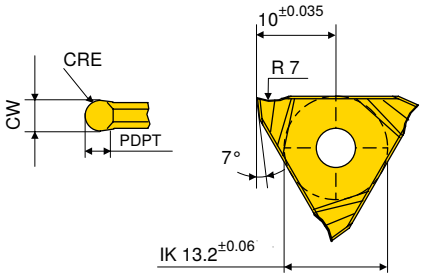
External machining



→ 66-69

Radial TX insert for corner recessing

▲ Full radius for cutting width 0.5–5.0 mm



CWX500



Neutral

Y6

Designation	CRE	CW +/-0,05	PDPT	for tool holder	Article no. 73 304 ... EUR	
	mm	mm	mm			
TX N 0002.05.1	0,25	0,5	0,20	R/L .. .1	23,14	**212**
TX N 0005.10.1	0,50	1,0	0,35	R/L .. .1	23,14	**214**
TX N 0006.12.1	0,60	1,2	0,40	R/L .. .1	23,14	**216**
TX N 0008.16.1	0,80	1,6	0,55	R/L .. .1	23,14	**218**
TX N 0010.20.2	1,00	2,0	0,70	R/L .. .2	25,62	**204**
TX N 0012.25.2	1,25	2,5	0,85	R/L .. .2	26,81	**220**
TX N 0015.30.3	1,50	3,0	1,00	R/L .. .3	27,35	**206**
TX N 0020.40.4	2,00	4,0	1,20	R/L .. .4	27,13	**208**
TX N 0025.50.4	2,50	5,0	1,50	R/L .. .4	27,56	**210**

→ v_c Page 102

Internal machining



→ 70

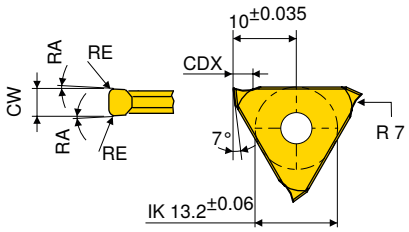
External machining



→ 66–69

TX insert for fine and copy turning

CWX500





Designation	CW +0,03 mm	RE mm	RA	for tool holder	Neutral Y6 Article no. 73 303 ... EUR	
TX N 0150.02.1	1,5	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 1	20,75	**204**
TX N 0200.02.1	2,0	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 1	20,75	**206**
TX N 0200.04.1	2,0	0,4	3	R/L 207 .. . / 738 .. . / 660 .. . 1	21,52	**208**
TX N 0300.06.2	3,0	0,6	3	R/L 207 .. . / 738 .. . / 660 .. . 2	21,83	**212**
TX N 0300.08.2	3,0	0,8	3	R/L 207 .. . / 738 .. . / 660 .. . 2	21,83	**214**
TX N 0300.02.2	3,0	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 2	21,52	**210**
TX N 0400.02.3	4,0	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 3	22,06	**216**
TX N 0400.12.3	4,0	1,2	3	R/L 207 .. . / 738 .. . / 660 .. . 3	22,06	**220**
TX N 0400.08.3	4,0	0,8	3	R/L 207 .. . / 738 .. . / 660 .. . 3	22,06	**218**

→ v_c Page 102

Internal machining



→ 70

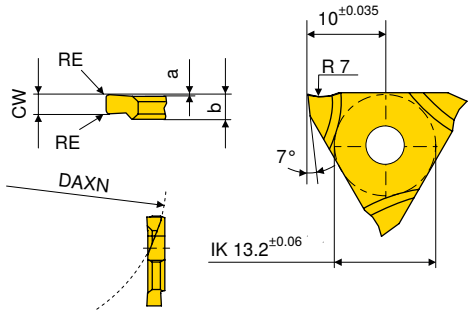
External machining



→ 66-68

TX insert for axial grooving

- Up to cutting depth 3.5 mm
- Cutting width 1.5–5.0 mm
- Groove-Ø external $D_a \geq 20$ mm



CWX500



CWX500



Illustrations show right-hand versions

Designation	CW	b	a	DAXN	RE	for tool holder	Left-hand		Right-hand	
							Y6		Y6	
							Article no. 73 306 ...		Article no. 73 305 ...	
	mm	mm	mm	mm	mm		EUR		EUR	
TX R/L 2015.2.2	1,5	2,7	0,2	20	0,2	R/L 207 .. . 2	24,43	**204**	24,43	**204**
TX R/L 3020.2.2	2,0	2,7	0,2	30	0,2	R/L 207 .. . 2	24,43	**206**	24,43	**206**
TX R/L 3030.2.3	3,0	3,7	0,2	30	0,2	R/L 207 .. . 3	24,64	**208**	24,64	**208**
TX R/L 3040.2.4	4,0	4,3	0,2	30	0,2	R/L 207 .. . 4	24,97	**210**	24,97	**210**
TX R/L 3050.2.4	5,0	5,3	0,2	30	0,2	R/L 207 .. . 4	25,07	**212**	25,07	**212**

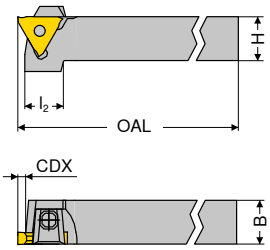
→ v_c Page 102

Internal machining	*External machining*
	
	→ 66

11

MonoClamp – Radial/Axial TX Grooving Holder 0°, 6 mm cutting depth

- For radial and axial grooving
- Cutting width 0.5–6.3 mm





Illustrations show right-hand versions

Designation	H	$B_{+/-0,1}$	OAL	l_2	CDX	for grooving inserts	Left-hand Y6 Article no. 73 501 ... EUR		Right-hand Y6 Article no. 73 500 ... EUR	
	mm	mm	mm	mm	mm					
R/L 207.1212.1	12	12	100	24	4	TX R/N/L ...1	104,80	**112**	104,80	**112**
R/L 207.1616.1	16	16	125	22	4	TX R/N/L ...1	93,42	**116**	93,42	**116**
R/L 207.2020.1	20	20	125	21	4	TX R/N/L ...1	72,45	**120**	72,45	**120**
R/L 207.2525.1	25	25	150		4	TX R/N/L ...1	76,02	**125**	76,02	**125**
R/L 207.3232.1	32	32	170		4	TX R/N/L ...1	88,71	**132**	88,71	**132**
R/L 207.1212.2	12	12	100	24	6	TX R/N/L ...2	104,80	**212**	104,80	**212**
R/L 207.1616.2	16	16	125	22	6	TX R/N/L ...2	93,42	**216**	93,42	**216**
R/L 207.2020.2	20	20	125	21	6	TX R/N/L ...2	72,45	**220**	72,45	**220**
R/L 207.2525.2	25	25	150		6	TX R/N/L ...2	76,02	**225**	76,02	**225**
R/L 207.3232.2	32	32	170		6	TX R/N/L ...2	88,71	**232**	88,71	**232**
R/L 207.1212.3	12	12	100	24	6	TX R/N/L ...3	104,80	**312**	104,80	**312**
R/L 207.1616.3	16	16	125	22	6	TX R/N/L ...3	93,42	**316**	93,42	**316**
R/L 207.2020.3	20	20	125	21	6	TX R/N/L ...3	72,45	**320**	72,45	**320**
R/L 207.2525.3	25	25	150		6	TX R/N/L ...3	76,02	**325**	76,02	**325**
R/L 207.3232.3	32	32	170		6	TX R/N/L ...3	88,71	**332**	88,71	**332**
R/L 207.1616.4	16	16	125	22	6	TX R/N/L ...4	93,42	**416**	93,42	**416**
R/L 207.2020.4	20	20	125	21	6	TX R/N/L ...4	72,45	**420**	72,45	**420**
R/L 207.2525.4	25	25	150		6	TX R/N/L ...4	76,02	**425**	76,02	**425**
R/L 207.3232.4	32	32	170		6	TX R/N/L ...4	88,71	**432**	88,71	**432**

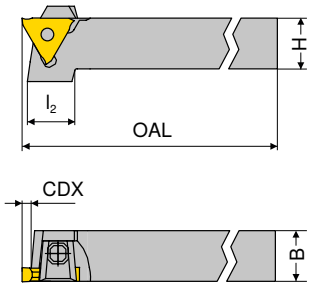
Spare parts for grooving inserts		2A/28 Key I Article no. 70 950 ... EUR		Y6 right hand Article no. 73 950 ... EUR		Y6 left hand Article no. 73 950 ... EUR			Y6 Clamping screw Article no. 73 950 ... EUR			Y6 Guide pin Article no. 73 950 ... EUR	
TX R/N/L ...1	SW03	2,45	**176**	20,97	**020**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...1	SW03	2,45	**176**			20,97	**024**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...2	SW03	2,45	**176**			20,97	**024**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...2	SW03	2,45	**176**	20,97	**020**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...3	SW03	2,45	**176**			20,97	**024**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...3	SW03	2,45	**176**	20,97	**020**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...4	SW03	2,45	**176**			23,28	**026**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...4	SW03	2,45	**176**	23,28	**022**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**



→ 61–65

MonoClamp – Radial TX Grooving holder 0°, 8 mm cutting depth

- For radial parting and grooving
- Cutting width 1.9–6.3 mm





Illustrations show right-hand versions

Designation	H	B +/-0,1	OAL	l_2	CDX	for grooving inserts	Left-hand Y6 Article no. 73 503 ...		Right-hand Y6 Article no. 73 502 ...	
	mm	mm	mm	mm	mm		EUR		EUR	
R/L 780.2020.2	20	20	125	24	8	TX R/N/L ...2	77,48	**120**	77,48	**120**
R/L 780.2525.2	25	25	150		8	TX R/N/L ...2	81,36	**125**	81,36	**125**
R/L 780.3232.2	32	32	170		8	TX R/N/L ...2	97,20	**132**	97,20	**132**
R/L 780.2020.3	20	20	125	24	8	TX R/N/L ...3	77,48	**220**	77,48	**220**
R/L 780.2525.3	25	25	150		8	TX R/N/L ...3	81,36	**225**	81,36	**225**
R/L 780.3232.3	32	32	170		8	TX R/N/L ...3	97,20	**232**	97,20	**232**
R/L 780.2020.4	20	20	125	24	8	TX R/N/L ...4	77,48	**320**	77,48	**320**
R/L 780.2525.4	25	25	150		8	TX R/N/L ...4	81,36	**325**	81,36	**325**
R/L 780.3232.4	32	32	170		8	TX R/N/L ...4	97,20	**332**	97,20	**332**

Spare parts

for grooving inserts		2A/28 Key I Article no. 70 950 ... EUR		Y6 right hand Article no. 73 950 ... EUR		Y6 left hand Article no. 73 950 ... EUR		Y6 Clamping screw Article no. 73 950 ... EUR		Y6 Guide pin Article no. 73 950 ... EUR	
TX R/N/L ...2	SW03	2,45	**176**	20,97	**020**			M6x20	4,30 **028**	Ø 4x18	0,39 **030**
TX R/N/L ...2	SW03	2,45	**176**			20,97	**024**	M6x20	4,30 **028**	Ø 4x18	0,39 **030**
TX R/N/L ...3	SW03	2,45	**176**	20,97	**020**			M6x20	4,30 **028**	Ø 4x18	0,39 **030**
TX R/N/L ...3	SW03	2,45	**176**			20,97	**024**	M6x20	4,30 **028**	Ø 4x18	0,39 **030**
TX R/N/L ...4	SW03	2,45	**176**			23,28	**026**	M6x20	4,30 **028**	Ø 4x18	0,39 **030**
TX R/N/L ...4	SW03	2,45	**176**	23,28	**022**			M6x20	4,30 **028**	Ø 4x18	0,39 **030**

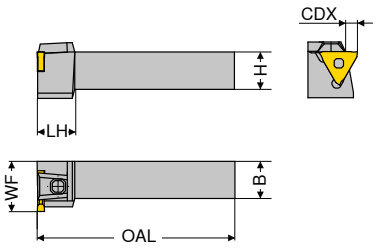


→ 61–63

11

MonoClamp – Radial TX Grooving holder 90°, 6 mm cutting depth

- For radial grooving
- Cutting width 0.5–6.3 mm





Illustrations show right-hand versions

Designation	H	B +/-0,1	OAL	LH	WF +/-0,07	CDX	for grooving inserts	Left-hand Y6 Article no. 73 505 ... EUR		Right-hand Y6 Article no. 73 504 ... EUR	
	mm	mm	mm	mm	mm	mm					
R/L 738.2020.1	20	20	150	20	27	4	TX R/N/L ...1	90,28	**120**	90,28	**120**
R/L 738.2525.1	25	25	150		32	4	TX R/N/L ...1	93,42	**125**	93,42	**125**
R/L 738.2020.2	20	20	150	20	27	6	TX R/N/L ...2	90,28	**220**	90,28	**220**
R/L 738.2525.2	25	25	150		32	6	TX R/N/L ...2	93,42	**225**	93,42	**225**
R/L 738.2020.3	20	20	150	20	27	6	TX R/N/L ...3	90,28	**320**	90,28	**320**
R/L 738.2525.3	25	25	150		32	6	TX R/N/L ...3	93,42	**325**	93,42	**325**
R/L 738.2020.4	20	20	150	20	27	6	TX R/N/L ...4	90,28	**420**	90,28	**420**
R/L 738.2525.4	25	25	150		32	6	TX R/N/L ...4	93,42	**425**	93,42	**425**


Key I


right hand


left hand


Clamping screw


Guide pin

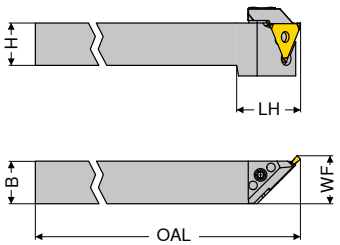
Spare parts for grooving inserts		2A/28 Article no. 70 950 ... EUR		Y6 Article no. 73 950 ... EUR		Y6 Article no. 73 950 ... EUR			Y6 Article no. 73 950 ... EUR			Y6 Article no. 73 950 ... EUR	
TX R/N/L ...1	SW03	2,45	**176**	20,97	**020**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...1	SW03	2,45	**176**			20,97	**024**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...2	SW03	2,45	**176**			20,97	**024**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...2	SW03	2,45	**176**	20,97	**020**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...3	SW03	2,45	**176**			20,97	**024**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...3	SW03	2,45	**176**	20,97	**020**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...4	SW03	2,45	**176**			23,28	**026**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...4	SW03	2,45	**176**	23,28	**022**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**

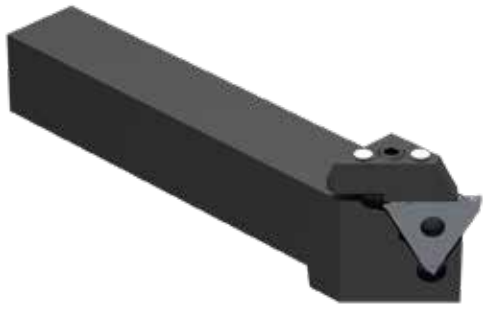


→ 62–64

MonoClamp – Tool holder TX 45°

- For recessing
- Cutting width 1.9–6.3 mm





Illustrations show right-hand versions

Designation	H	B +/-0,1	OAL	LH	for grooving inserts	Left-hand Y6 Article no. 73 507 ... EUR		Right-hand Y6 Article no. 73 506 ... EUR	
	mm	mm	mm	mm					
R/L 618.2020.2	20	20	125	30	TX R/N/L ...2	104,80	**120**	104,80	**120**
R/L 618.2525.2	25	25	150		TX R/N/L ...2	109,10	**125**	109,10	**125**
R/L 618.3232.2	32	32	170		TX R/N/L ...2	122,70	**132**	122,70	**132**
R/L 618.2020.3	20	20	125	30	TX R/N/L ...3	104,80	**220**	104,80	**220**
R/L 618.2525.3	25	25	150		TX R/N/L ...3	109,10	**225**	109,10	**225**
R/L 618.3232.3	32	32	170		TX R/N/L ...3	122,70	**232**	122,70	**232**
R/L 618.2020.4	20	20	125	30	TX R/N/L ...4	104,80	**320**	104,80	**320**
R/L 618.2525.4	25	25	150		TX R/N/L ...4	109,10	**325**	109,10	**325**
R/L 618.3232.4	32	32	170		TX R/N/L ...4	122,70	**332**	122,70	**332**

Spare parts

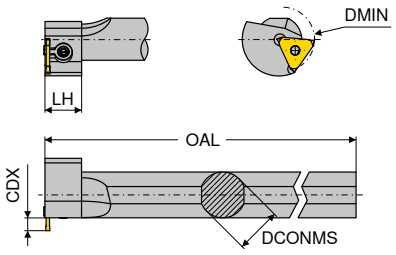
for grooving inserts		2A/28 Key I Article no. 70 950 ... EUR		Y6 right hand Article no. 73 950 ... EUR		Y6 left hand Article no. 73 950 ... EUR			Y6 Clamping screw Article no. 73 950 ... EUR			Y6 Guide pin Article no. 73 950 ... EUR	
TX R/N/L ...2	SW03	2,45	**176**	30,41	**001**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...2	SW03	2,45	**176**			30,41	**005**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...3	SW03	2,45	**176**	30,41	**001**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...3	SW03	2,45	**176**			30,41	**005**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...4	SW03	2,45	**176**			30,41	**007**	M6x20	4,30	**028**	Ø 4x18	0,39	**030**
TX R/N/L ...4	SW03	2,45	**176**	30,41	**002**			M6x20	4,30	**028**	Ø 4x18	0,39	**030**



→ 62+63

MonoClamp – Radial Boring bar TX

- For radial internal grooving
- Cutting width 0,5–6,3 mm





Illustrations show right-hand versions

Designation	DCONMS $_{g7}$	DMIN	OAL	LH	CDX	for grooving inserts	Left-hand Y6 Article no. 73 511 ... EUR		Right-hand Y6 Article no. 73 510 ... EUR	
	mm	mm	mm	mm	mm					
R/L 660.0025.1	25	46	170	20	2	TX R/N/L ...1	123,70	**125**	123,70	**125**
R/L 660.0032.1	32	46	200	20	2	TX R/N/L ...1	152,10	**132**	152,10	**132**
R/L 660.0040.1	40	46	250		2	TX R/N/L ...1	153,10	**140**	153,10	**140**
R/L 660.0025.2	25	46	170	20	2	TX R/N/L ...2	123,70	**225**	123,70	**225**
R/L 660.0032.2	32	46	200	20	2	TX R/N/L ...2	152,10	**232**	152,10	**232**
R/L 660.0040.2	40	46	250		2	TX R/N/L ...2	153,10	**240**	153,10	**240**
R/L 660.0025.3	25	46	170	20	2	TX R/N/L ...3	123,70	**325**	123,70	**325**
R/L 660.0032.3	32	46	200	20	2	TX R/N/L ...3	152,10	**332**	152,10	**332**
R/L 660.0040.3	40	46	250		2	TX R/N/L ...3	153,10	**340**	153,10	**340**
R/L 660.0025.4	25	46	170	20	2	TX R/N/L ...4	123,70	**425**	123,70	**425**
R/L 660.0032.4	32	46	200	20	2	TX R/N/L ...4	152,10	**432**	152,10	**432**
R/L 660.0040.4	40	46	250		2	TX R/N/L ...4	153,10	**440**	153,10	**440**

Bore-Ø$_{min.}$ in mm	46	50	60	80	100	for grooving insert
$T_{max.}$ (mm)	2	3	4	4,5	5	TX R/N/L ...1
	2	3	4	4,5	5	TX R/N/L ...2
	2	3	4	4,5	5	TX R/N/L ...3
	2	3	4	4,5	5	TX R/N/L ...4

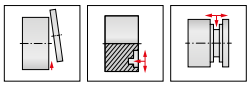
Spare parts for grooving inserts	Y6  Clamping element Article no. 73 950 ... EUR		2A/28  Key I Article no. 70 950 ... EUR		Y6  Clamping screw Article no. 73 950 ... EUR	
TX R/N/L ...1	25,90	**011**	SW03	2,45 **176**	M6x30	4,30 **009**
TX R/N/L ...2	25,90	**011**	SW03	2,45 **176**	M6x30	4,30 **009**
TX R/N/L ...3	25,90	**011**	SW03	2,45 **176**	M6x30	4,30 **009**
TX R/N/L ...4	25,90	**011**	SW03	2,45 **176**	M6x30	4,30 **009**



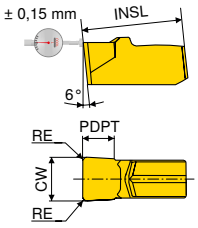
→ 62–64

Insert LX

- Grooving width 8 and 10 mm
- Axial grooving from Ø 500 mm onwards
- Internal grooving and turning, from Ø 200 mm onwards



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTP1340
-M2 HCR1325	-M2 HCR1335	-M2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL	CW -/+0,08	RE +/-0,1	PDPT	for tool holder	1A/15 Article no. 70 337 ...		1A/15 Article no. 70 337 ...		1A/15 Article no. 70 337 ...	
	mm	mm	mm	mm		EUR		EUR		EUR	
LXE 8.00N0.80-M2	19	8	0,8	5	E32 N ..-LX	18,79	**928**	18,79	**578**	18,79	**682**
LXE 10.00N0.80-M2	19	10	0,8	5	E32 N ..-LX	25,05	**932**	25,05	**582**	25,05	**678**

Steel	●	●	●
Stainless steel	○	○	●
Cast iron	●	●	●
Non ferrous metals			○
Heat resistant alloys			●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 108

Internal machining



→ 73

External machining



→ 73

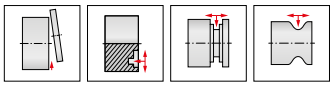


→ 74

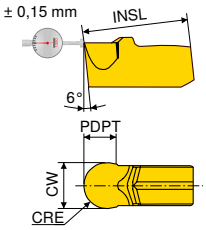
11

Radial Grooving Insert LX

- Grooving width 8 mm
- Axial grooving from Ø 500 mm
- Internal grooving and turning, from Ø 200 mm



F	M	R



-M3 CTCP325	-M3 CTCP335	-M3 CTP1340
-M3 HCR1325	-M3 HCR1335	-M3 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL	CW -/+0,08	CRE	PDPT	for tool holder	1A/15 Article no. 70 337 ...	EUR	1A/15 Article no. 70 337 ...	EUR	1A/15 Article no. 70 337 ...	EUR
	mm	mm	mm	mm							
LXR 4.00N-M3	19	8	4	5	E32 N ..-LX		20,03 **908**		20,03 **518**		20,03 **618**
Steel							●		●		●
Stainless steel							○		○		●
Cast iron							●		●		●
Non ferrous metals											○
Heat resistant alloys											●
hardened materials							○				

→ v_c Page 101
→ Application recommendation on page 108

Internal machining



→ 73

External machining



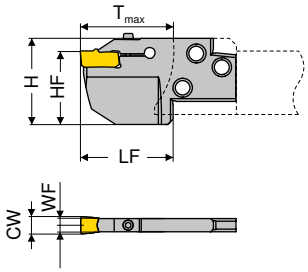
→ 73



→ 74

ModularClamp MSS – Axial and radial grooving module LX

- Grooving width 8 and 10 mm
- Axial grooving from Ø 500 mm onwards
- Internal grooving and turning, from Ø 200 mm onwards

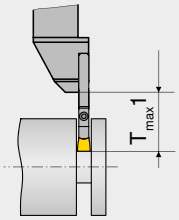




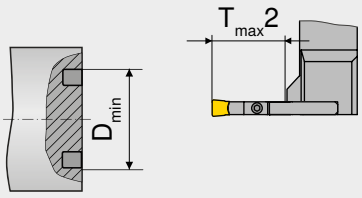
Neutral

Designation	CW	WF	LF	HF	H	T max. 1	T max. 2	T max. 3	for grooving inserts	2C/71 Article no. 70 835 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm			
E32 N 25-LX	8 / 10	3,4	27	32	44	25	19	14	LX ..	95,84	**032**
E32 N 32-LX	8 / 10	3,4	37	32	44	32	26	21	LX ..	95,84	**132**
E32 N 45-LX	8 / 10	3,4	47	32	44	45	39	34	LX ..	95,84	**232**

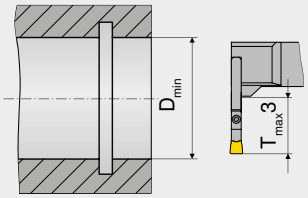
Radial grooving



Axial grooving D_{min} > 500 mm



Internal grooving D_{min} > 200 mm



Spare parts		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
for grooving inserts					
LX ..	T20	9,95	**114**	M4x18	4,76 **204**



Key D



Clamping screw

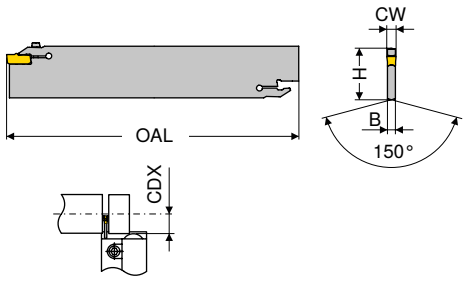


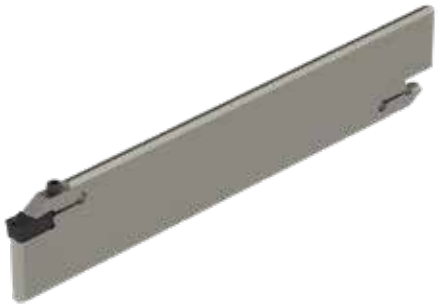
→ 71+72 → 93-95

11

MonoClamp – Blade LX

Scope of supply:
Blade incl. clamping screw and tightening wrench





Designation	H	B	OAL	CW	CDX	for grooving inserts	2A/25 Article no. 70 833 ... EUR	
	mm	mm	mm	mm	mm			
XLCEN 4608-LX	46	6,8	250	8/10	80	LX ..	251,30	**108**

Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR	
LX ..	T20	9,95	**114**	M4x18	4,76	**204**

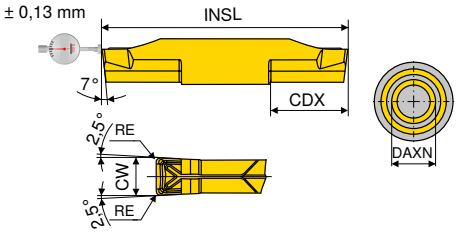


→ 71+72 → 98+99 → **Chapter 16**

Grooving insert AX

- Very good chip control
- DAXN minimum groove diameter refers to the outside diameter

F	M	R
		



-F50
CTP1340

-F50
CCN1340

DRAGONSKIN



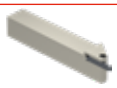
1C/72

Designation	IH	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	CDX mm	DAXN mm	for tool holder	Article no. 70 327 ... EUR	
AX 05 E3.00 N 0.30	N	24	3	0,3	5	10	E.. R/L.. -AX 05	27,49	**005**
AX 10 E3.00 N 0.30	N	34	3	0,3	10	20	E.. R/L.. -AX 10	28,51	**010**
AX 15 E3.00 N 0.30	N	44	3	0,3	15	30	E.. R/L.. -AX 15	29,98	**015**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 101
→ Application recommendation on page 109

Internal machining *External machining*

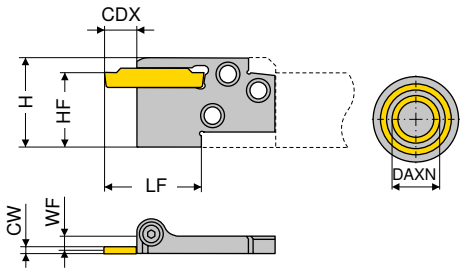




→ 76 → 77 → 78

11

ModularClamp MSS – Axial grooving module AX

▲ For axial grooving and turning



Illustrations show right-hand versions



Designation	HF	CW	WF	LF	H	DAXN	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 827 ...	EUR	Right-hand 2C/71 Article no. 70 828 ...	EUR
	mm	mm	mm	mm	mm	mm	mm					
E16 R/L 05-AX 05	16	3	2,5	24,0	20,5	10	5	AX05	016	94,37	016	94,37
E20 R/L 05-AX 05	20	3	3,1	28,0	25,0	10	5	AX05	020	94,37	020	94,37
E25 R/L 05-AX 05	25	3	4,6	27,5	30,0	10	5	AX05	025	95,42	025	95,42
E20 R/L 10-AX 10	20	3	3,1	33,0	25,0	20	10	AX10	120	94,37	120	94,37
E25 R/L 10-AX 10	25	3	4,6	32,5	30,0	20	10	AX10	125	95,42	125	95,42
E20 R/L 15-AX 15	20	3	3,1	44,0	25,0	30	15	AX15	220	94,37	220	94,37
E25 R/L 15-AX 15	25	3	4,6	43,5	30,0	30	15	AX15	225	95,42	225	95,42

Spare parts

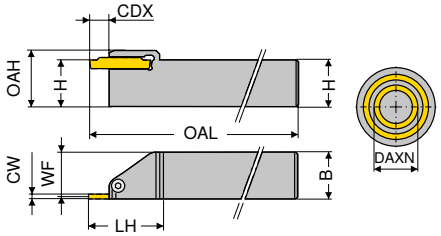
for Article no.		Y7 Key D Article no. 80 950 ...	EUR		2A/28 Clamping screw Article no. 70 950 ...	EUR	
70 827 016 / 70 828 016	T15	113	9,28		M3,5x12,5	441	8,97
70 827 020 / 70 828 020	T15	113	9,28		M4x14	403	8,58
70 827 025 / 70 828 025	T20	114	9,95		M5x18	404	5,72
70 827 120 / 70 828 120	T15	113	9,28		M4x14	403	8,58
70 827 125 / 70 828 125	T20	114	9,95		M5x18	404	5,72
70 827 220 / 70 828 220	T15	113	9,28		M4x14	403	8,58
70 827 225 / 70 828 225	T20	114	9,95		M5x18	404	5,72





→ 75 → 93–95 → **Chapter 16**

MonoClamp – Axial AX Grooving Holder 0°, up to 15 mm groove depth





Illustrations show right-hand versions

Designation	H	B	OAL	LH	OAH	CDX	CW	WF	DAXN	for grooving inserts	Left-hand NEW 2C/71 Article no. 70 823 ...		Right-hand NEW 2C/71 Article no. 70 824 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
E20 R/L 0005-2020-AX 05	20	20	140	28	25	5	3	18,7	10	AX05	132,10	**02000**	132,10	**02000**
E20 R/L 0010-2020-AX 10	20	20	140	38	25	10	3	18,7	20	AX10	132,10	**12000**	132,10	**12000**
E20 R/L 0015-2020-AX 15	20	20	140	49	25	15	3	18,7	30	AX15	132,10	**22000**	132,10	**22000**
E25 R/L 0005-2525-AX 05	25	25	160	28	30	5	3	23,7	10	AX05	141,50	**02500**	141,50	**02500**
E25 R/L 0010-2525-AX 10	25	25	160	38	30	10	3	23,7	20	AX10	141,50	**12500**	141,50	**12500**
E25 R/L 0015-2525-AX 15	25	25	160	49	30	15	3	23,7	30	AX15	141,50	**22500**	141,50	**22500**

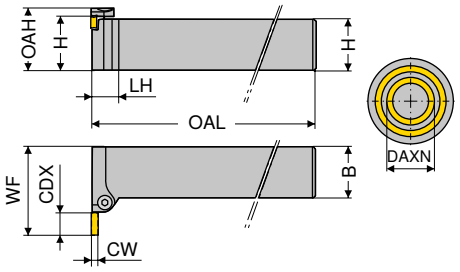
Spare parts

for Article no.	Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...	
		EUR		EUR
70 824 02000 / 70 823 02000	T20	7,52 **106**	M5x18	5,72 **404**
70 824 12000 / 70 823 12000	T20	7,52 **106**	M5x18	5,72 **404**
70 824 22000 / 70 823 22000	T20	7,52 **106**	M5x18	5,72 **404**
70 824 02500 / 70 823 02500	T20	7,52 **106**	M5x18	5,72 **404**
70 824 12500 / 70 823 12500	T20	7,52 **106**	M5x18	5,72 **404**
70 824 22500 / 70 823 22500	T20	7,52 **106**	M5x18	5,72 **404**



→ 75

MonoClamp – Axial AX Grooving Holder 90°, up to 15 mm groove depth





Illustrations show right-hand versions

Designation	H	B	WF	OAH	OAL	LH	CDX	DAXN	CW	Left-hand NEW 2C/71 Article no. 70 825 ...		Right-hand NEW 2C/71 Article no. 70 826 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
E20 R/L 9005-2020-AX 05	20	20	28	25	110	12	5	10	3	132,10	**02000**	132,10	**02000**
E20 R/L 9010-2020-AX 10	20	20	38	25	110	13	10	20	3	132,10	**12000**	132,10	**12000**
E20 R/L 9015-2020-AX 15	20	20	49	25	110	13	15	30	3	132,10	**22000**	132,10	**22000**
E25 R/L 9005-2525-AX 05	25	25	33	30	140	12	5	10	3	141,50	**02500**	141,50	**02500**
E25 R/L 9010-2525-AX 10	25	25	43	30	110	13	10	20	3	141,50	**12500**	141,50	**12500**
E25 R/L 9015-2525-AX 15	25	25	49	30	140	13	15	30	3	141,50	**22500**	141,50	**22500**

Spare parts for Article no.		Y7 Article no. 80 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
		 Key D			 Clamping screw	
70 825 22000 / 70 826 22000	T20	7,52	**106**	M5x18	5,72	**404**
70 825 12000 / 70 826 12000	T20	7,52	**106**	M5x18	5,72	**404**
70 825 02000 / 70 826 02000	T15	7,05	**105**	M4x14	8,58	**403**
70 825 22500 / 70 826 22500	T20	7,52	**106**	M5x18	5,72	**404**
70 825 12500 / 70 826 12500	T20	7,52	**106**	M5x18	5,72	**404**
70 825 02500 / 70 826 02500	T15	7,05	**105**	M4x14	8,58	**403**

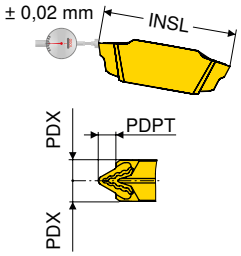


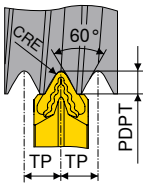
→ 75

Threading inserts TC full profile – External thread 60°



F	M	R





CTPP520	CTPP535	-27P H216T
DPX1520	DPX1535	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	



Designation	Size	TP	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 357 ... EUR		1C/84 Article no. 70 357 ... EUR		1C/84 Article no. 70 357 ... EUR	
		mm	mm	mm	mm	mm							
TC 16-1 E 0.5 ISO	TC 16-1 ...	0,50	16	0,32	1,05	0,06	E.. R/L TC 16-1	21,80	**010**	21,80	**110**	17,60	**610**
TC 16-1 E 0.75 ISO	TC 16-1 ...	0,75	16	0,48	1,05	0,09	E.. R/L TC 16-1	21,80	**012**	21,80	**112**	17,60	**612**
TC 16-1 E 1.0 ISO	TC 16-1 ...	1,00	16	0,64	1,05	0,12	E.. R/L TC 16-1	21,80	**014**	21,80	**114**	17,60	**614**
TC 16-1 E 1.25 ISO	TC 16-1 ...	1,25	16	0,80	1,05	0,15	E.. R/L TC 16-1	21,80	**016**	21,80	**116**	17,60	**616**
TC 16-1 E 1.5 ISO	TC 16-1 ...	1,50	16	0,95	1,05	0,18	E.. R/L TC 16-1	21,80	**018**	21,80	**118**	17,60	**618**
TC 16-2 E 1.75 ISO	TC 16-2 ...	1,75	16	1,10	2,15	0,22	E.. R/L/N TC 16-2	21,80	**030**	21,80	**130**	17,60	**630**
TC 16-2 E 2.0 ISO	TC 16-2 ...	2,00	16	1,26	2,15	0,25	E.. R/L/N TC 16-2	21,80	**032**	21,80	**132**	17,60	**632**
TC 16-2 E 2.5 ISO	TC 16-2 ...	2,50	16	1,58	2,15	0,32	E.. R/L/N TC 16-2	21,80	**034**	21,80	**134**	17,60	**634**
TC 16-2 E 3.0 ISO	TC 16-2 ...	3,00	16	1,89	2,15	0,38	E.. R/L/N TC 16-2	21,80	**036**	21,80	**136**	17,60	**636**
TC 16-3 E 3.5 ISO	TC 16-3 ...	3,50	16	2,21	3,10	0,44	E25 N TC 16-3	21,80	**050**	21,80	**150**		
TC 16-3 E 4.0 ISO	TC 16-3 ...	4,00	16	2,53	3,10	0,50	E25 N TC 16-3	21,80	**052**	21,80	**152**		
TC 16-3 E 5.0 ISO	TC 16-3 ...	5,00	16	3,16	3,10	0,63	E25 N TC 16-3	21,80	**056**	21,80	**156**		

Steel	●	●	
Stainless steel	●	●	
Cast iron	●		●
Non ferrous metals	○	○	●
Heat resistant alloys	○	●	
hardened materials			

→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*



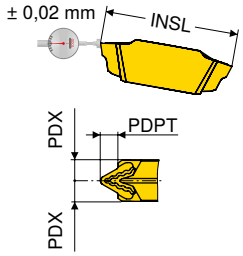
→ 84 → 85

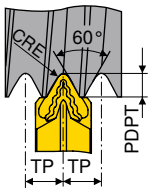
11

Threading inserts TC full profile – Internal thread 60°



F	M	R





CTPP535	CTPP520	-27P H216T
DPX1535	DPX1520	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	





Designation	Size	TP	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 358 ...		1C/84 Article no. 70 358 ...		1C/84 Article no. 70 358 ...	
		mm	mm	mm	mm	mm		EUR		EUR		EUR	
TC 16-1 I 1.0 ISO	TC 16-1 ...	1,00	16	0,59	1,05	0,06	I32 R/L TC 16-1	21,80	**114**	21,80	**014**	17,60	**614**
TC 16-1 I 1.25 ISO	TC 16-1 ...	1,25	16	0,74	1,05	0,07	I32 R/L TC 16-1			21,80	**016**		
TC 16-1 I 1.5 ISO	TC 16-1 ...	1,50	16	0,89	1,05	0,09	I32 R/L TC 16-1	21,80	**118**	21,80	**018**	17,60	**618**
TC 16-2 I 1.75 ISO	TC 16-2 ...	1,75	16	1,02	2,15	0,11	I32 R/L TC 16-2			21,80	**030**		
TC 16-2 I 2.0 ISO	TC 16-2 ...	2,00	16	1,17	2,15	0,13	I32 R/L TC 16-2	21,80	**132**	21,80	**032**	17,60	**632**
TC 16-2 I 3.0 ISO	TC 16-2 ...	3,00	16	1,76	2,15	0,19	I32 R/L TC 16-2	21,80	**136**	21,80	**036**	17,60	**636**

Steel	●	●	
Stainless steel	●	●	
Cast iron		●	●
Non ferrous metals	○	○	●
Heat resistant alloys	●	○	
hardened materials			

→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*

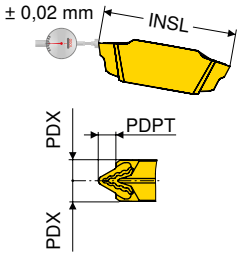



→ 86 → 87

Threading inserts TC partial profile 60°



F	M	R
		



CTPP535	CTPP520	-27P H216T
DPX1535	DPX1520	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	



Designation	Size	TP	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 355 ... EUR		1C/84 Article no. 70 355 ... EUR		1C/84 Article no. 70 355 ... EUR	
		mm	mm	mm	mm	mm							
TC 16-1 EI A 60	TC 16-1 ...	0,5 - 1,5	16	1,27	1,05	0,03	E/I.. R/L TC 16-1	21,80	**110**	21,80	**010**	17,60	**610**
TC 16-2 EI G 60	TC 16-2 ...	1,75 - 3,0	16	2,49	2,15	0,11	E/I.. R/L/N TC 16-2	21,80	**130**	21,80	**030**	17,60	**630**
TC 16-2 EI AG 60	TC 16-2 ...	0,5 - 3,0	16	2,57	2,15	0,03	E/I.. R/L/N TC 16-2	21,80	**132**	21,80	**032**	17,60	**632**
TC 16-3 EI N 60	TC 16-3 ...	3,5 - 5,0	16	4,11	3,10	0,22	E/I.. N TC 16-3	21,80	**150**	21,80	**050**	17,60	**650**

Steel			●		●	
Stainless steel			●		●	
Cast iron					●	●
Non ferrous metals			○		○	●
Heat resistant alloys			●		○	
hardened materials						

→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*





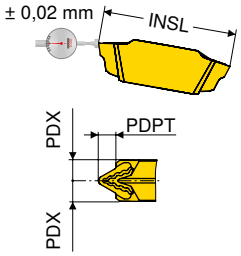

→ 86 → 87 → 84 → 85

11

Threading inserts TC full profile 55°



F	M	R
		



CTPP520	CTPP535	-27P H216T
DPX1520	DPX1535	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	
		

Designation	Size	TPI	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 359 ... EUR		1C/84 Article no. 70 359 ... EUR		1C/84 Article no. 70 359 ... EUR	
		1/"	mm	mm	mm	mm							
TC 16-1 EI 28 W	TC 16-1 ...	28	16	0,60	1,05	0,12	E/I.. R/L TC 16-1	21,80	**010**	21,80	**110**		
TC 16-1 EI 20 W	TC 16-1 ...	20	16	0,84	1,05	0,17	E/I.. R/L TC 16-1	21,80	**016**				
TC 16-1 EI 19 W	TC 16-1 ...	19	16	0,88	1,05	0,17	E/I.. R/L TC 16-1	21,80	**018**	21,80	**118**	17,60	**618**
TC 16-1 EI 16 W	TC 16-1 ...	16	16	1,05	1,05	0,21	E/I.. R/L TC 16-1	21,80	**022**				
TC 16-2 EI 14 W	TC 16-2 ...	14	16	1,20	2,15	0,23	E/I.. R/L/N TC 16-2	21,80	**030**	21,80	**130**	17,60	**630**
TC 16-2 EI 12 W	TC 16-2 ...	12	16	1,40	2,15	0,27	E/I.. R/L/N TC 16-2			21,80	**132**		
TC 16-2 EI 11 W	TC 16-2 ...	11	16	1,53	2,15	0,30	E/I.. R/L/N TC 16-2	21,80	**034**	21,80	**134**	17,60	**634**

Steel	●	●	
Stainless steel	●	●	
Cast iron	●		●
Non ferrous metals	○	○	●
Heat resistant alloys	○	●	
hardened materials			

→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*



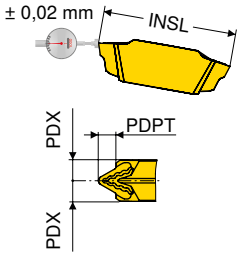



→ 86 → 87 → 84 → 85

Threading inserts TC partial profile 55°



F	M	R
		





Designation	Size	TPI	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 356 ... EUR		1C/84 Article no. 70 356 ... EUR	
		1/"	mm	mm	mm	mm					
TC 16-1 EI A 55	TC 16-1 ...	28 - 16	16	1,39	1,05	0,12	E/I.. R/L TC 16-1	21,80	**110**	21,80	**010**
TC 16-2 EI AG 55	TC 16-2 ...	28 - 8	16	2,91	2,15	0,12	E/I.. R/L/N TC 16-2	21,80	**132**	21,80	**032**
TC 16-2 EI G 55	TC 16-2 ...	14 - 8	16	2,78	2,15	0,23	E/I.. R/L/N TC 16-2	21,80	**130**	21,80	**030**
TC 16-3 EI N 55	TC 16-3 ...	7 - 5	16	4,34	3,10	0,46	E/I.. N TC 16-3	21,80	**150**	21,80	**050**

Steel	●	●
Stainless steel	●	●
Cast iron		●
Non ferrous metals	○	○
Heat resistant alloys	●	○
hardened materials		

→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*

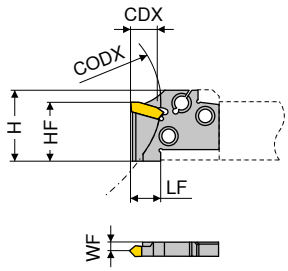





→ 86 → 87 → 84 → 85

11

ModularClamp MSS – Threading module TC for external threads





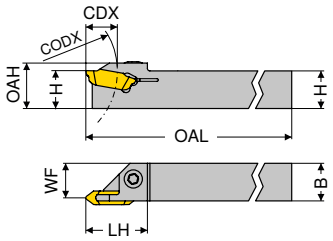
Designation	TP	TPI	WF	HF	LF	H	CODX	CDX	for grooving inserts	Left-hand 2C/82 Article no. 70 872 ... EUR		Neutral 2C/82 Article no. 70 872 ... EUR		Right-hand 2C/82 Article no. 70 872 ... EUR	
	mm	1/"	mm	mm	mm	mm	mm	mm							
E20 R/L TC 16-1	0,5 - 1,5	28 - 16	3,45	13	20	24	60	8	TC 16-1 ...	85,88	**120**			85,88	**020**
E20 N TC 16-2	1,75 - 3,0	14 - 8	2,20	13	20	24		12	TC 16-2 ...			85,88	**220**		
E25 R/L TC 16-1	0,5 - 1,5	28 - 16	5,20	13	25	30	75	8	TC 16-1 ...	86,51	**125**			86,51	**025**
E25 R/L TC 16-2	1,75 - 3,0	14 - 8	4,10	13	25	30	75	10	TC 16-2 ...	86,51	**325**			86,51	**225**
E25 N TC 16-3	3,5 - 5,0	7 - 5	3,10	13	25	30		12	TC 16-3 ...			86,51	**425**		





→ 79–83 → 93–95 → **Chapter 16**

MonoClamp – Monobloc tool TC for external thread cutting





Illustrations show right-hand versions

Designation	TP	TPI	H	B	OAL	LH	OAH	WF	CODX	for grooving inserts	Left-hand 2C/83 Article no. 70 883 ... EUR		Right-hand 2C/83 Article no. 70 882 ... EUR	
	mm	1/"	mm	mm	mm	mm	mm	mm	mm					
E12 R/L 00-1212 TC16	0,5 - 3	28 - 8	12	12	150	20	14,5	11	30	TC16-1/2..	127,40	**012**	127,40	**012**





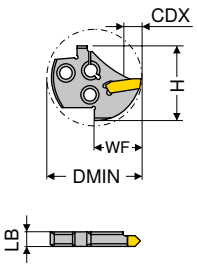
Spare parts for grooving inserts		Y7 Article no. 80 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
TC16-1/2..	T15	9,28	**113**	M4x11	10,34	**442**



→ 79–83

11

ModularClamp MSS – Threading module TC for internal threads





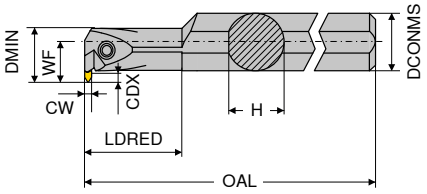
Designation	TP	TPI	LB	WF	H	DMIN	CDX	for grooving inserts	Left-hand 2C/82 Article no. 70 887 ...		Neutral 2C/82 Article no. 70 887 ...		Right-hand 2C/82 Article no. 70 887 ...	
	mm	1/"	mm	mm	mm	mm	mm		EUR		EUR		EUR	
I32 R/L TC 16-1	0,5 - 1,5	28 - 16	6,2	5,2	32,2	40	7	TC 16-1 ...	87,34	**132**			87,34	**032**
I32 R/L TC 16-2	1,75 - 3,0	14 - 8	6,2	4,1	32,2	40	7	TC 16-2 ...	87,34	**332**			87,34	**232**
I32 N TC 16-3	3,5 - 5,0	7 - 5	6,2	3,1	32,2	40	7	TC 16-3 ...			87,34	**432**		





→ 79–83 → 96

MonoClamp – Monobloc Boring bar TC for internal thread cutting





Illustrations show right-hand versions

Designation	WF	DCONMS	H	OAL	LDRED	CDX	DMIN	for grooving inserts	Left-hand 2C/83 Article no. 70 857 ... EUR		Right-hand 2C/83 Article no. 70 856 ... EUR	
	mm	mm	mm	mm	mm	mm	mm					
I16 R/L 90-2D TC16	14,0	20	18	180	32	4	20	TC16-1/2..	138,70	**016**	138,70	**016**
I20 R/L 90-2D TC16	17,5	25	23	200	40	5	25	TC16-..	152,80	**020**	152,80	**020**
I25 R/L 90-2D TC16	22,0	32	30	250	50	6	32	TC16-..	172,90	**025**	172,90	**025**

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 857 016 / 70 856 016	T15	9,28	**113**	M4x14	8,58	**403**
70 857 020 / 70 856 020	T20	9,95	**114**	M5x18	5,72	**404**
70 857 025 / 70 856 025	T25	10,22	**115**	M6x20	4,23	**405**



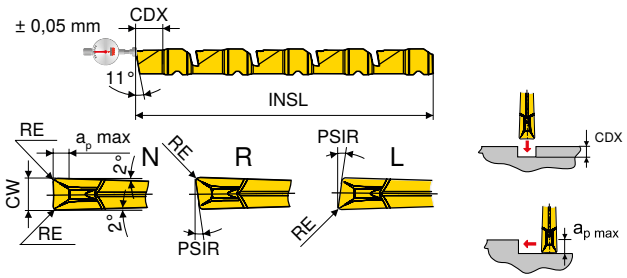
→ 79–83

11

MaxiClick – Insert – Cutting depth 5 mm

▲ 5 cutting edges

F	M	R
		



-F2 CTP1340

-F2 CCN1340

DRAGONSKIN



1C/72

Designation	IH	CW mm	RE mm	PSIR	INSL mm	$a_{p\,max}$ mm	CDX mm	for tool holder	Article no. 70 338 ... EUR	
MC 05-5-1.00 L 07-F2	L	1,0	0,1	7°	59,2		5	MC 05 R/L	34,80	**250**
MC 05-5-1.50 L 07-F2	L	1,5	0,1	7°	59,2		5	MC 05 R/L	34,80	**260**
MC 05-5-1.00 N 0.10-F2	N	1,0	0,1		59,2	0,5	5	MC 05 R/L	34,80	**210**
MC 05-5-1.50 N 0.10-F2	N	1,5	0,1		59,2	1,0	5	MC 05 R/L	34,80	**220**
MC 05-5-1.00 R 07-F2	R	1,0	0,1	7°	59,2		5	MC 05 R/L	34,80	**230**
MC 05-5-1.50 R 07-F2	R	1,5	0,1	7°	59,2		5	MC 05 R/L	34,80	**240**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

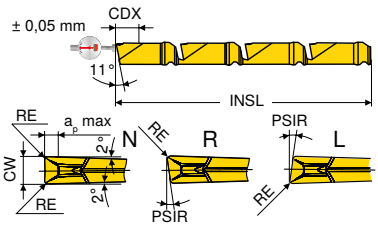
→ v_c Page 106

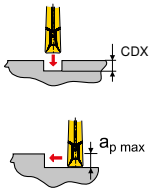
Internal machining	*External machining*
	
	→ 91

MaxiClick insert – Cutting depth 10 mm

▲ 4 cutting edges

F	M	R





-F2
CTP1340

-F2
CCN1340

DRAGONSKIN



1C/72

Designation	IH	CW mm	RE mm	PSIR	INSL mm	$a_{p\,max}$ mm	CDX mm	for tool holder	Article no. 70 339 ... EUR	
MC 10-4-1.50 L 07-F2	L	1,5	0,1	7°	59,2		10	MC 10 R/L	28,64	**270**
MC 10-4-2.00 L 07-F2	L	2,0	0,1	7°	59,2		10	MC 10 R/L	28,64	**280**
MC 10-4-2.50 L 07-F2	L	2,5	0,1	7°	59,2		10	MC 10 R/L	28,64	**290**
MC 10-4-1.50 N 0.10-F2	N	1,5	0,1		59,2	1,0	10	MC 10 R/L	28,64	**210**
MC 10-4-2.00 N 0.10-F2	N	2,0	0,1		59,2	1,5	10	MC 10 R/L	28,64	**220**
MC 10-4-2.50 N 0.10-F2	N	2,5	0,1		59,2	2,0	10	MC 10 R/L	28,64	**230**
MC 10-4-1.50 R 07-F2	R	1,5	0,1	7°	59,2		10	MC 10 R/L	28,64	**240**
MC 10-4-2.00 R 07-F2	R	2,0	0,1	7°	59,2		10	MC 10 R/L	28,64	**250**
MC 10-4-2.50 R 07-F2	R	2,5	0,1	7°	59,2		10	MC 10 R/L	28,64	**260**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 106

11

Internal machining *External machining*

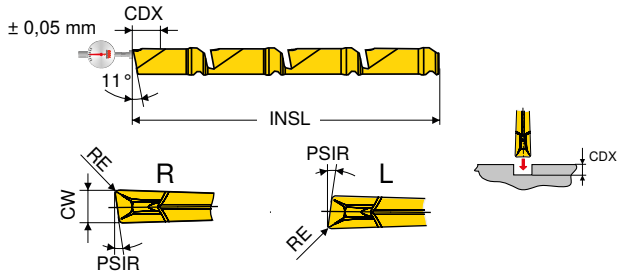


→ 92

MaxiClick insert – Cutting depth 10 mm

▲ 4 cutting edges

F	M	R
		



-F3 CTP1340

-F3 CCN1340

DRAGONSKIN



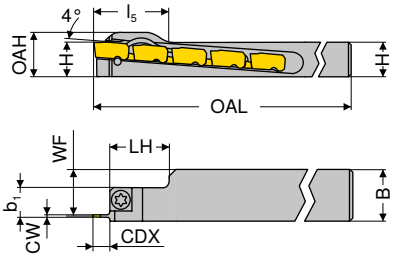
Designation	IH	CW mm	RE mm	PSIR	INSL mm	CDX mm	for tool holder	1C/72 Article no. 70 340 ... EUR	
MC 10-4-1.50 L 12-F3	L	1,5	0,1	12°	59,2	10	MC 10 R/L	28,64	**270**
MC 10-4-2.00 L 12-F3	L	2,0	0,1	12°	59,2	10	MC 10 R/L	28,64	**280**
MC 10-4-2.50 L 12-F3	L	2,5	0,1	12°	59,2	10	MC 10 R/L	28,64	**290**
MC 10-4-1.50 R 12-F3	R	1,5	0,1	12°	59,2	10	MC 10 R/L	28,64	**240**
MC 10-4-2.00 R 12-F3	R	2,0	0,1	12°	59,2	10	MC 10 R/L	28,64	**250**
MC 10-4-2.50 R 12-F3	R	2,5	0,1	12°	59,2	10	MC 10 R/L	28,64	**260**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 106

Internal machining	*External machining*
	
	→ 92

MaxiClick – Toolholder – Cutting depth 5 mm





Illustrations show right-hand versions

Designation	H mm	OAH mm	B mm	b_1 mm	CW mm	CDX mm	WF mm	OAL mm	LH mm	l_5 mm	for grooving inserts	Left-hand 2C/71 Article no. 70 873 ...	EUR	Right-hand 2C/71 Article no. 70 873 ...	EUR
MC 05 R/L -1010K	10	13	10	10	1,00 - 1,50	5	8,5	125	23	27	MC 05	88,61	**210**	88,61	**110**
MC 05 R/L -1212K	12	15	12	12	1,00 - 1,50	5	10,5	125	23	27	MC 05	88,61	**212**	88,61	**112**
MC 05 R/L -1616K	16	19	16	12	1,00 - 1,50	5	14,5	125	23	20	MC 05	88,61	**216**	88,61	**116**
MC 05 R/L -2020K	20	23	20	12	1,00 - 1,50	5	18,8	125	23	20	MC 05	103,00	**220**	103,00	**120**
MC 05 R/L -2525M	25	28	25	12	1,00 - 1,50	5	23,5	150	23	21	MC 05	109,70	**225**	109,70	**125**

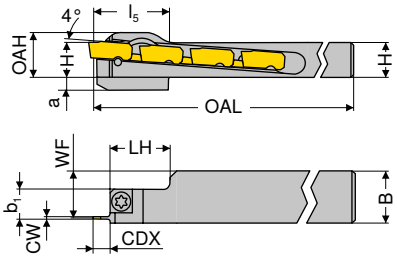
Spare parts for grooving inserts		2A/28 Article no. 70 950 ...	EUR		2A/28 Article no. 70 950 ...	EUR	
		 Key-T			 Clamping screw		
MC 05	T15		6,41	**738**	M4x11	3,40	**174**

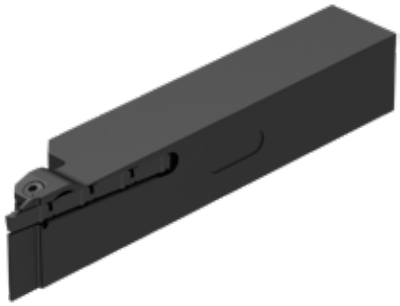


→ 88

11

MaxiClick – Toolholder – Cutting depth 10 mm





Illustrations show right-hand versions

Designation	H	OAH	B	b_1	a	CW	CDX	WF	OAL	LH	l_5	for grooving inserts	Left-hand 2C/71 Article no. 70 874 ...		Right-hand 2C/71 Article no. 70 874 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
MC 10 R/L -1010K	10	13	10	10		1,50 - 2,50	10	8,5	125	28		MC 10	88,61	**210**	88,61	**110**
MC 10 R/L -1010K-S	10	13	10	10	6	1,50 - 2,50	10	8,5	125	28	27	MC 10	88,61	**410** 1)	88,61	**310** 1)
MC 10 R/L -1212K	12	15	12	12		1,50 - 2,50	10	10,5	125	28		MC 10	88,61	**212**	88,61	**112**
MC 10 R/L -1212K-S	12	15	12	12	4	1,50 - 2,50	10	10,5	125	28	27	MC 10	88,61	**412** 1)	88,61	**312** 1)
MC 10 R/L -1616K	16	19	16	12		1,50 - 2,50	10	14,5	125	28	20	MC 10	88,61	**216**	88,61	**116**
MC 10 R/L -2020K	20	23	20	12		1,50 - 2,50	10	18,8	125	28	20	MC 10	103,00	**220**	103,00	**120**
MC 10 R/L -2525M	25	28	25	12		1,50 - 2,50	10	23,5	150	28	21	MC 10	109,70	**225**	109,70	**125**

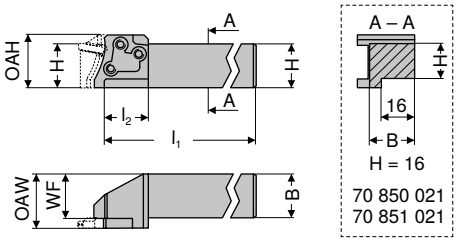
1) -S = strengthened variant

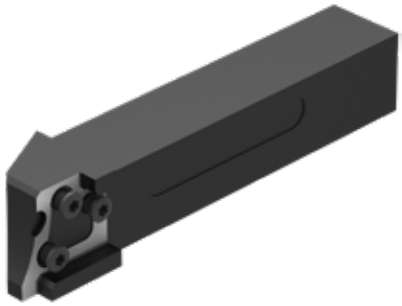
Spare parts for grooving inserts		2A/28 Key-T Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR	
MC 10	T15	6,41	**738**	M4x11	3,40	**174**



→ 89+90

ModularClamp MSS – Tool holder 0°





Illustrations show right-hand versions

Designation	H	B	OAW	OAH	WF	l_1	l_2	for modules	Left-hand 2C/71 Article no. 70 851 ... EUR		Right-hand 2C/71 Article no. 70 850 ... EUR	
	mm	mm	mm	mm	mm	mm	mm					
E12 R/L 00-1212E	12	12	15,25	14,5	11,75	70	12	E12 R/L ...	131,20	**012**	131,20	**012**
E16 R/L 00-1616G	16	16	19,25	19,5	15,75	90	16	E16 R/L ...	132,50	**016**	132,50	**016**
E20 R/L 00-1620G	16	20	24,25	24,0	20,15	90	20	E20 R/L ...	133,70	**021** 1)	133,70	**021** 1)
E20 R/L 00-2020J	20	20	24,25	24,0	20,15	110	20	E20 R/L ...	133,70	**020**	133,70	**020**
E25 R/L 00-2525L	25	25	31,00	30,0	25,50	140	25	E25 R/L ...	136,50	**025**	136,50	**025**
E32 R/L 00-3225N	32	25	31,00	38,0	25,50	160	32	E32 R/L ...	140,20	**032**	140,20	**032**

1) see view A-A

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 851 012 / 70 850 012	T08	7,80	**110**	M2,5x10	7,09	**440**
70 851 016 / 70 850 016	T15	9,28	**113**	M3,5x12,5	8,97	**441**
70 851 021 / 70 850 021	T15	9,28	**113**	M4x14	8,58	**403**
70 851 020 / 70 850 020	T15	9,28	**113**	M4x14	8,58	**403**
70 851 025 / 70 850 025	T20	9,95	**114**	M5x18	5,72	**404**
70 851 032 / 70 850 032	T25	10,22	**115**	M6x20	4,23	**405**

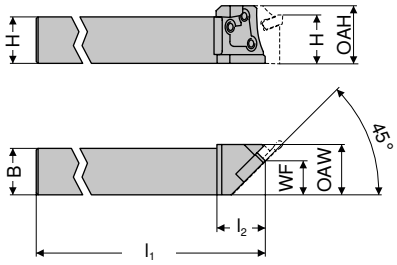
Module Overview

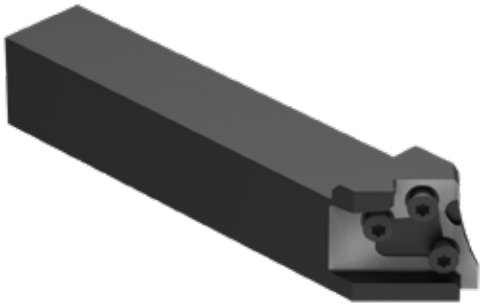


→ 4+5

ModularClamp Holder with HSK-T interface can be found in → **Chapter 16.**

ModularClamp MSS – Tool holder 45°





Illustrations show right-hand versions

Designation	H mm	B mm	OAW mm	OAH mm	WF mm	l_1 mm	l_2 mm	for modules	Left-hand 2C/71 Article no. 70 853 ... EUR		Right-hand 2C/71 Article no. 70 852 ... EUR	
E20 R/L 45-2020J	20	20	21,5	24	14,5	110	20	E20 R/L ...	133,70	**020**	133,70	**020**
E25 R/L 45-2525L	25	25	26,0	30	18,0	140	25	E25 R/L ...	136,50	**025**	136,50	**025**

For right hand holder → left hand module only
For left hand holder → right hand module only

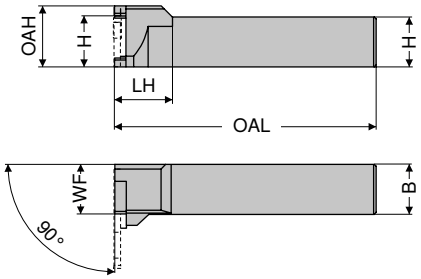
Spare parts for Article no.		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
70 853 020 / 70 852 020	T15	9,28	**113**	M4x11	10,34	**442**	M4x14	8,58	**403**
70 853 025 / 70 852 025	T20	9,95	**114**	M5x13,5	10,75	**513**	M5x18	5,72	**404**

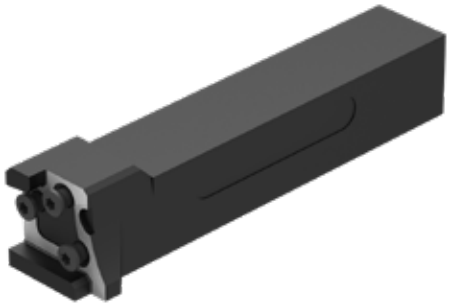
Module Overview



→ 4+5

ModularClamp MSS – Tool holder 90°





Illustrations show right-hand versions

Designation	H	B	OAH	WF	OAL	LH	for modules	Left-hand 2C/71 Article no. 70 855 ...		Right-hand 2C/71 Article no. 70 854 ...	
	mm	mm	mm	mm	mm	mm		EUR		EUR	
E20 R/L 90-2020J	20	20	24	20	110	20	E20 R/L ...	133,70	**020**	133,70	**020**
E25 R/L 90-2525L	25	25	30	25	140	28	E25 R/L ...	136,50	**025**	136,50	**025**
E32 R/L 90-3225N	32	25	38	32	160	34	E32 R/L ...	140,20	**032**	140,20	**032**

For right hand holder → left hand module only
For left hand holder → right hand module only



Key D



Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
70 855 020 / 70 854 020	T15	9,28	**113**	M4x14	8,58	**403**
70 855 025 / 70 854 025	T20	9,95	**114**	M5x18	5,72	**404**
70 855 032 / 70 854 032	T25	10,22	**115**	M6x20	4,23	**405**

Module Overview



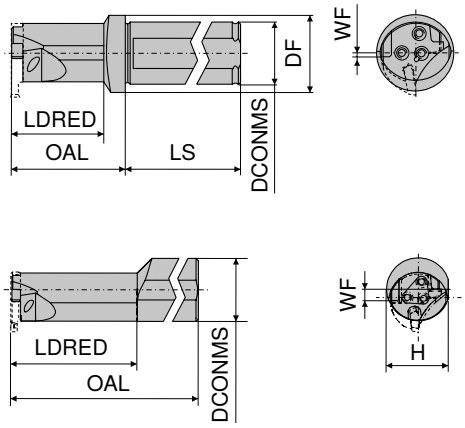
→ 4+5

ModularClamp Holder with HSK-T interface can be found in → **Chapter 16.**

11

ModularClamp MSS – Boring bars GX / TC

▲ With internal coolant supply





Illustrations show right-hand versions

	Designation	DCONMS	DF	WF	H	OAL	LDRED	LS	for modules	Left-hand 2C/71 Article no. 70 861 ... EUR		Right-hand 2C/71 Article no. 70 860 ... EUR	
		mm	mm	mm	mm	mm	mm	mm					
≤ 1,5xD	I16 R/L 90-1,5 D-N	20	25	1,0		32	24	50	I 16 R/L	146,40	017	146,40	017
	I20 R/L 90-1,5 D-N	20	25	1,0		37	30	50	I 20 R/L	179,40	021	179,40	021
	I25 R/L 90-1,5 D-N	25	32	1,5		46	38	56	I 25 R/L	205,60	026	205,60	026
	I32 R/L 90-1,5 D-N	32	40	2,0		59	48	60	I 32 R/L	265,10	033 1)	265,10	033 1)
	I40 R/L 90-1,5 D-N	40	50	2,5		72	60	70	I 40 R/L/N	330,60	041	330,60	041
≤ 2,5xD	I16 R/L 90-2,5 D-N	20		4,5	19,0	180	40		I 16 R/L	157,80	117	157,80	117
	I20 R/L 90-2,5 D-N	25		6,0	24,0	200	50		I 20 R/L	191,90	121	191,90	121
	I25 R/L 90-2,5 D-N	32		7,0	31,0	250	63		I 25 R/L	219,60	126	219,60	126
	I32 R/L 90-2,5 D-N	40		9,5	38,0	300	80		I 32 R/L	286,40	133 1)	286,40	133 1)
	I40 R/L 90-2,5 D-N	50		11,5	48,5	350	100		I 40 R/L/N	364,70	141	364,70	141

1) with 2 clamping surfaces

Spare parts

for modules		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
I 16 R/L	T08	7,80	110	M2,5x10	7,09	440
I 20 R/L	T10	9,14	112	M3x11	7,35	444
I 25 R/L	T15	9,28	113	M3,5x12,5	8,97	441
I 32 R/L	T20	9,95	114	M4,5x17	8,16	445
I 40 R/L/N	T20	9,95	114	M5x18	5,72	404

Module Overview



→ 6+7

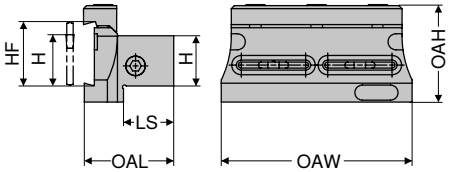
ModularClamp Holder with HSK-T interface can be found in → **Chapter 16.**

Split clamping block for blades DC

Scope of supply:

Complete clamping block, but without blade







Designation	H	HF	OAH	LS	OAL	OAW	for blades	2A/25 Article no. 70 829 ... EUR	
	mm	mm	mm	mm	mm	mm			
SBN 2020-26-DC	20	26	43,0	20	40,0	82	XLC.. 26..	239,00	**020**
SBN 2020-32-DC	20	32	43,0	20	40,0	95	XLC.. 32..	239,00	**120**
SBN 2525-32-DC	25	32	48,5	25	44,5	95	XLC.. 32..	246,50	**025**
SBN 3232-32-DC	32	32	52,0	32	51,0	95	XLC.. 32..	258,00	**032**



Coolant screw plug



Clamping rail



Clamping screw

Spare parts for Article no.		2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
70 829 020	G 1/8"	3,56	**294**	CU70	32,30	**290**	M6x12	2,22	**861**
70 829 120	G 1/8"	3,56	**294**	CU85	32,30	**291**	M6x12	2,22	**861**
70 829 025	G 1/8"	3,56	**294**	CU85	32,30	**291**	M6x12	2,22	**861**
70 829 032	G 1/8"	3,56	**294**	CU85	32,30	**291**	M6x12	2,22	**861**



Key I



O-Ring



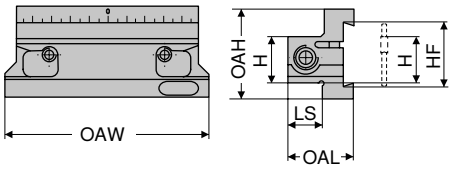
O-Ring

for Article no.		2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR			2A/28 Article no. 70 950 ... EUR	
70 829 020	SW5	3,68	**265**	19x2,5	4,30	**293**			
70 829 120	SW5	3,68	**265**	19x2,5	4,30	**293**	23x2,5	4,30	**292**
70 829 025	SW5	3,68	**265**				23x2,5	4,30	**292**
70 829 032	SW5	3,68	**265**				23x2,5	4,30	**292**

11

Clamping block for blades GX/LX/FX/SX

Scope of supply:
Clamping block complete, but without blade and coolant set





Designation	H	HF	OAH	LS	OAL	OAW	for blades	2A/25 Article no. 70 830 ... EUR	
	mm	mm	mm	mm	mm	mm			
SBN 2020-26-K	20	26	39	20	33,0	90	XLC.. 26..	164,10	**020**
SBN 2520-32-K	25	32	48	20	36,0	110	XLC.. 32..	164,10	**025**
SBN 3229-32-K	32	32	48	29	44,5	120	XLC.. 32..	167,70	**032**
SBN 3229-46-K	32	46	70	29	52,0	150	XLC.. 46..	277,60	**132**
SBN 4037-46-K	40	46	70	37	60,0	150	XLC.. 46..	337,00	**140**

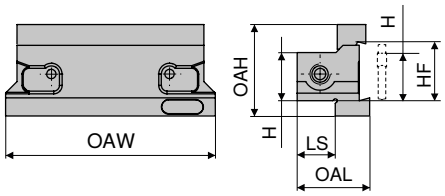
Spare parts		2A/28  Key I Article no. 70 950 ... EUR		2A/28  Cooling agent set Article no. 70 950 ... EUR			2A/28  clamping screw Article no. 70 950 ... EUR	
for blades								
XLC.. 26..	SW5	3,68	**265**	41,79	**278**	M6x25	2,06	**269**
XLC.. 32..	SW5	3,68	**265**	41,79	**278**	M6x25	2,06	**269**
XLC.. 46..	SW6	5,17	**266**	40,70	**279**	M8x35	2,06	**282**

Clamping Block for Blades with HSK-T interface can be found in → **Chapter 16.**

Split clamping block for blades GX/LX/FX/SX

Scope of supply:

Clamping block complete, but without blade and coolant set





Designation	H	HF	OAH	LS	OAL	OAW	for blades	2A/25 Article no. 70 831 ...	EUR	
	mm	mm	mm	mm	mm	mm				
SBN 2020-26-KS	20	26	39	20	35,0	90	XLC.. 26..		199,40	**020**
SBN 2520-32-KS	25	32	48	20	38,0	110	XLC.. 32..		205,60	**025**
SBN 3229-32-KS	32	32	48	29	46,5	120	XLC.. 32..		213,30	**032**

Spare parts		2A/28  Key l Article no. 70 950 ...	EUR		2A/28  Cooling agent set Article no. 70 950 ...	EUR		2A/28  clamping screw Article no. 70 950 ...	EUR	
for blades										
XLC.. 26..	SW5		3,68	**265**		41,79	**278**	M6x25	2,06	**269**
XLC.. 32..	SW5		3,68	**265**		41,79	**278**	M6x25	2,06	**269**

Clamping Block for Blades with HSK-T interface can be found in → **Chapter 16.**

11

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data values for grooving inserts GX/LX/FX/SX/AX/TC/MaxiClick

	DRAGONSKIN CTCP325 (HCR1325)	DRAGONSKIN CTCP335 (HCR1335)	DRAGONSKIN CTPP345 (HCN1345)	DRAGONSKIN CTPP520 (DPX1520)	DRAGONSKIN CTPP535 (DPX1535)	DRAGONSKIN CTP1340 (CCN1340)	H216T (CWK26)
Index	v_c in m/min.						
1.1	**130–260**	**110–190**	**80–150**	**150–200**	**80–150**	**80–180**	
1.2	**150–300**	**130–250**	**110–190**	**150–240**	**110–170**	**120–250**	
1.3	**130–260**	**110–190**	**80–150**	**100–200**	**80–150**	**60–150**	
1.4	**140–240**	**80– 170**	**70–140**	**130–180**	**70–130**	**120–200**	
1.5	**150–300**	**70–170**	**70–140**	**140–220**	**70–130**	**80–180**	
1.6	**130–200**	**70–170**	**60–180**	**100–160**	**60–170**	**60–150**	
1.7	**150–230**	**110–220**	**70–130**	**140–190**	**70–130**	**80–180**	
1.8	**100–180**	**90–210**	**60–110**	**100–150**	**60–110**	**50–120**	
1.9	**120–180**	**90–180**	**70–130**	**120–170**	**60–100**	**80–150**	
1.10	**120–180**	**70–160**	**60–110**	**120–170**	**70–120**	**50–120**	
1.11	**100–160**	**70–160**	**60–110**	**100–150**	**60–110**	**50–120**	
1.12	**100–160**	**70–160**	**60–110**	**100–150**	**60–110**	**50–120**	
1.13	**60–110**				**60–110**		
1.14	**60–110**						
1.15	**60–110**	**70–160**	**60–100**	**60–100**	**60–100**	**50–120**	
1.16	**60–110**	**70–160**	**60–100**	**60–100**	**60–100**	**50–120**	
2.1	140–230	120–200	**100–180**	**110–180**	**50–150**	**50–200**	
2.2	140–230	120–190	**100–180**	**110–180**	**50–140**	**50–180**	
2.3	120–210	120–170	**80–150**	**70–140**	**50–130**	**50–180**	
2.4	60–110	60–90	**60–90**	**70–100**	**50–80**	**50–80**	
2.5	80–140	70–110	**70–110**	**70–100**	**50–90**	**50–100**	
2.6	80–140	70–110	**70–110**	**70–100**	**50–90**	**50–100**	
2.7	60–110	60–90	**60–90**		**50–80**	**50–80**	
3.1	**120–210**	**90–180**		**180–220**		**100–200**	**110–180**
3.2	**100–170**	**80–150**		**140–180**		**80–160**	**90–150**
3.3	**130–210**	**100–160**		**160–200**		**90–190**	**110–180**
3.4	**100–170**	**70–140**		**120–180**		**70–160**	**80–140**
3.5	**120–250**	**100–200**		**180–240**		**110–230**	**100–200**
3.6	**90–190**	**80–150**		**160–200**		**80–160**	**70–160**
3.7	**120–240**	**100–200**		**180–240**		**110–230**	**100–200**
3.8	**90–190**	**80–150**		**160–200**		**80–160**	**70–160**
4.1				100–1000	100–500	100–500	**100–800**
4.2				100–800	100–500	100–500	**80–800**
4.3				100–500	100–500	100–500	**50–500**
4.4				100–500	100–300	100–300	
4.5				100–350	100–300	100–200	
4.6					100–300	100–300	**80–300**
4.7					100–300	100–300	**200–600**
4.8					100–300	100–300	**150–400**
4.9					100–300	100–300	**150–400**
4.10					100–300	100–300	**150–400**
4.11				80–250	100–500	100–500	**200–600**
4.12					100–370	100–370	**200–600**
4.13							
4.14				80–500	80–180	80–180	**80–500**
4.15				80–200	60–150	60–150	**60–150**
4.16							
4.17							
4.18							
4.19							
5.1				25–45			
5.2			20–40	20–40	**20–35**	**20–35**	
5.3			20–30	15–25	**20–40**	**20–40**	
5.4			20–30	15–25	**20–40**	**20–40**	
5.5				10–20	**15–25**	**15–25**	
5.6				10–20	**15–25**	**15–25**	
5.7				10–20	**10–20**	**10–20**	
5.8				10–20	**10–20**	**10–20**	
5.9					**50–120**	**50–120**	
5.10					**30–50**	**30–50**	
5.11					**30–50**	**30–50**	
6.1	10–20						
6.2	10–20						
6.3							
6.4							
6.5							

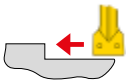
Cutting data values for TX grooving inserts

	CWX 500		
Index	v_c m/min.	f mm/rev.	Coolant
1.1	**80–200**	0,03–0,1	Emulsion
1.2	**80–200**	0,03–0,1	Emulsion
1.3	**80–200**	0,03–0,1	Emulsion
1.4	**80–160**	0,03–0,1	Emulsion
1.5	**80–160**	0,03–0,1	Emulsion
1.6	**80–160**	0,03–0,1	Emulsion
1.7	**80–160**	0,03–0,1	Emulsion
1.8	**80–150**	0,03–0,1	Emulsion
1.9	**80–200**	0,03–0,1	Emulsion
1.10	**70–140**	0,03–0,07	Emulsion
1.11	**70–140**	0,03–0,07	Emulsion
1.12	**70–140**	0,03–0,07	Emulsion
1.13	**40–60**	0,03–0,07	Emulsion
1.14	**40–60**	0,03–0,07	Emulsion
1.15	**40–60**	0,03–0,07	Emulsion
1.16	**40–60**	0,03–0,07	Emulsion
2.1	**80–160**	0,02–0,06	Emulsion
2.2	**80–160**	0,02–0,06	Emulsion
2.3	**80–160**	0,02–0,06	Emulsion
2.4	**20–85**	0,02–0,06	Emulsion
2.5	**20–75**	0,02–0,06	Emulsion
2.6	**20–65**	0,02–0,06	Emulsion
2.7	**20–65**	0,02–0,06	Emulsion
3.1	**30–180**	0,03–0,1	Emulsion
3.2	**30–150**	0,03–0,1	Emulsion
3.3	**30–180**	0,03–0,1	Emulsion
3.4	**30–120**	0,03–0,1	Emulsion
3.5	**30–90**	0,03–0,1	Emulsion
3.6	**20–80**	0,03–0,1	Emulsion
3.7	**30–90**	0,03–0,1	Emulsion
3.8	**20–80**	0,03–0,1	Emulsion
4.1	**120–600**	0,05–0,12	Petroleum
4.2	**120–600**	0,05–0,12	Petroleum
4.3	**100–450**	0,05–0,12	Petroleum
4.4	**70–300**	0,05–0,12	Petroleum
4.5	**60–150**	0,05–0,12	Petroleum
4.6	**60–150**	0,05–0,12	Petroleum
4.7	**100–180**	0,05–0,12	Petroleum
4.8	**90–180**	0,05–0,12	Petroleum
4.9	**80–180**	0,05–0,12	Emulsion
4.10	**80–180**	0,05–0,12	Emulsion
4.11	**120–220**	0,05–0,12	Emulsion
4.12	**70–150**	0,05–0,12	Emulsion
4.13	**80–180**	0,05–0,12	Emulsion
4.14	**80–180**	0,05–0,12	Emulsion
4.15	**80–180**	0,05–0,12	Emulsion
4.16	**80–180**	0,05–0,12	Emulsion
4.17	**80–180**	0,05–0,12	Emulsion
4.18	**80–180**	0,05–0,12	Emulsion
4.19	**80–180**	0,05–0,12	Emulsion
5.1	**30–80**	0,01–0,04	Emulsion
5.2	**18–75**	0,01–0,04	Emulsion
5.3	**18–75**	0,01–0,04	Emulsion
5.4	**18–40**	0,01–0,04	Emulsion
5.5	**18–40**	0,01–0,04	Emulsion
5.6	**18–40**	0,01–0,04	Emulsion
5.7	**15–30**	0,01–0,04	Emulsion
5.8	**15–30**	0,01–0,04	Emulsion
5.9	**15–30**	0,01–0,04	Emulsion
5.10	**100–150**	0,01–0,04	Emulsion
5.11	**100–150**	0,01–0,04	Emulsion
6.1			
6.2			
6.3			
6.4			
6.5			

GX – Speeds and Feeds

GX Standard / GX-E

Turning



Parting / Grooving

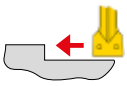


	Depth of Cut a_p in mm							
GX Standard / GX-E	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**GX Standard / GX-E**
Cutting width in mm	Feed rate f in mm/rev.							Feed rate f in mm/rev.
2	0,10–0,15	0,05–0,15	0,05–0,12	0,05–0,10				0,05–0,20
3	0,10–0,17	0,05–0,17	0,05–0,17	0,05–0,15	0,05–0,12			0,10–0,25
4	0,10–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,17	0,07–0,15		0,10–0,25
5	0,10–0,25	0,10–0,25	0,07–0,25	0,07–0,25	0,07–0,22	0,07–0,20		0,10–0,30
6	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,25	0,15–0,22	0,15–0,35

When axial grooving reduce feed by 40 %.

GX-F2

Turning



Parting / Grooving

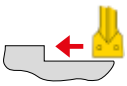


	Depth of Cut a_p in mm								
GX-F2	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**	**GX-F2**
Cutting width in mm	Feed rate f in mm/rev.									Feed rate f in mm/rev.
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10						0,05–0,15
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12				0,075–0,20
4	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,17	0,05–0,15			0,10–0,25
5	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,17	0,07–0,15		0,10–0,30
6	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,19	0,10–0,15	0,15–0,325

When axial grooving reduce feed by 40 %.

GX-M40

Turning



Parting / Grooving

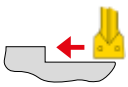


	Depth of Cut a_p in mm								
GX-M40	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**GX-M40**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,10–0,20	0,05–0,20	0,05–0,17	0,05–0,15					0,05–0,15
3	0,10–0,22	0,10–0,22	0,10–0,21	0,10–0,20	0,10–0,17				0,075–0,20
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,17			0,10–0,25
5	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,27	0,10–0,23	0,10–0,20		0,10–0,30
6	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,32	0,10–0,27	0,10–0,23	0,10–0,20	0,15–0,325

When axial grooving reduce feed by 40 %.

GX-27P

Turning



Parting / Grooving



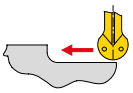
	Depth of Cut a_p in mm								
GX-27P	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**GX-27P**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,05–0,23	0,05–0,23	0,05–0,23	0,05–0,20					0,05–0,20
3	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,20				0,05–0,25
4	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,25			0,05–0,30
5	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,32	0,10–0,30		0,10–0,35
6	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,36	0,10–0,33	0,10–0,30	0,10–0,40

When axial grooving reduce feed by 40 %.

GX – Depths of cut and feed rates

GX-M3

Turning



Parting / Grooving

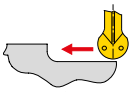


	Depth of Cut a_p in mm							
GX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,15–0,35	0,15–0,35	0,15–0,30					
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30				
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35			
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50	0,20–0,40		

GX-M3
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,35

GX-27P Full Radius

Turning



Parting / Grooving



	Depth of Cut a_p in mm							
GX-27P Full Radius	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,10–0,45	0,05–0,45	0,05–0,40					
2	0,15–0,50	0,10–0,50	0,10–0,50	0,10–0,40				
2,5	0,15–0,60	0,10–0,60	0,10–0,60	0,10–0,50	0,10–0,45			
3	0,25–0,70	0,20–0,70	0,15–0,70	0,15–0,70	0,15–0,65	0,15–0,60	0,15–0,55	
4	0,25–0,80	0,20–0,80	0,15–0,80	0,15–0,80	0,15–0,80	0,15–0,80	0,15–0,75	0,15–0,70

GX-27P Full Radius
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,35

GX-M1

Parting / Grooving



GX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,15
3	0,10–0,20
4	0,10–0,25

GX Radius grooving inserts

Parting / Grooving



GX Radius grooving insert	
Radius RE in mm	Feed rate f in mm/rev.
0,80	0,05–0,10
1,00	0,05–0,15
1,20	0,05–0,15

GX circlip grooving

Grooving

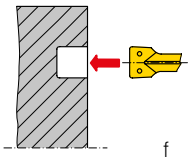
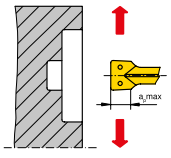


GX circlip grooves	
Cutting width in mm	Feed rate f in mm/rev.
0,60–1,70	0,02–0,09
1,95–2,25	0,05–0,10
2,75–3,25	0,05–0,12

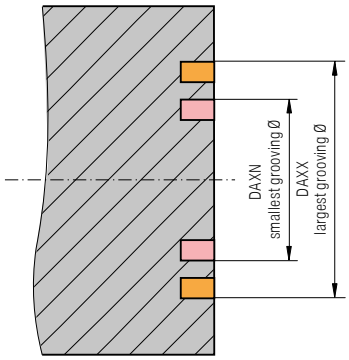
Feed guide and machining instructions for axial grooving and face turning with GX 24 axial

Approximate feed rates

GX

Designation	 f in mm/rev.	 f in mm/rev.	a_p max mm
GX 24-2 E 3.00 ..	0,05–0,15	0,05–0,20	2,5
GX 24-3 E 4.00 ..	0,05–0,15	0,05–0,25	3,0
GX 24-3 E 5.00 ..	0,05–0,15	0,10–0,25	3,0
GX 24-4 E 6.00 ..	0,05–0,20	0,10–0,30	3,5

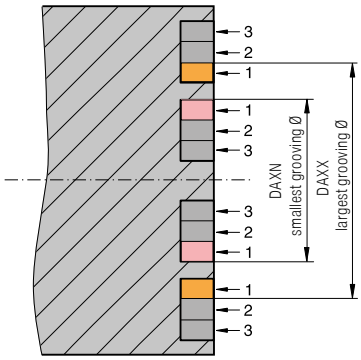
Axial grooving



It is only possible to plunge within the fixed diameter range of the axial grooving module or monoholder (e.g. 50–70 mm).

Important: The indicated diameter range is always valid for the external diameter of the groove!

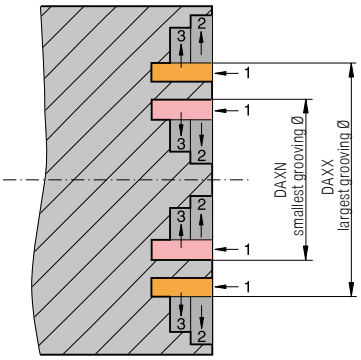
Axial grooving – Groove widening



In case of face turning it is possible to widen the groove above and below the diameter range indicated on the Axial grooving module or monoholder.

Important: Only the first groove must lie within the diameter range of the axial grooving module or axial monoholder. The depth of the widening groove must not be larger than the depth of the original groove.

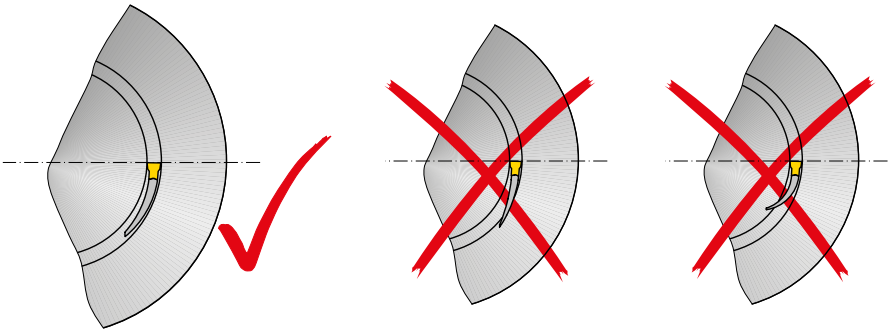
Axial grooving and face turning



Groove widening by face turning in the diameter range above and below the values specified for the Axial grooving module and Axial monoholder are possible.

Important: Only the first groove must lie within the diameter range of the module.

Attention: The diameter of face grooves must lie within the diameter range indicated on the axial grooving module and axial monoholder. Not following this range will result in the tool being damaged or destroyed.



Correct Axial mono holder

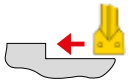
Incorrect Axial mono holder

11

MaxiClick – Depths of cut and feed rates

MaxiClick 05

Turning



	Depth of Cut a_p in mm		
MaxiClick 05	**0,25**	**0,50**	**0,75**
Cutting width in mm	Feed rate f in mm/rev.		
1	0,02–0,15	0,02–0,10	
1,5	0,02–0,20	0,02–0,20	0,02–0,14

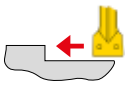
Parting / Grooving



MaxiClick 05
Feed rate f in mm/rev.
0,03–0,10
0,03–0,11

MaxiClick 10

Turning



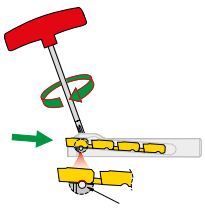
	Depth of Cut a_p in mm				
MaxiClick 10	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**
Cutting width in mm	Feed rate f in mm/rev.				
1,5	0,02–0,20	0,02–0,15	0,02–0,10		
2	0,02–0,20	0,02–0,20	0,02–0,14	0,02–0,10	
2,5	0,02–0,20	0,02–0,20	0,02–0,17	0,02–0,13	0,02–0,10

Parting / Grooving

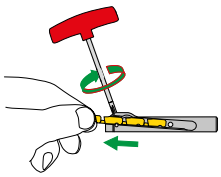


MaxiClick 10
Feed rate f in mm/rev.
0,03–0,11
0,03–0,12
0,03–0,15

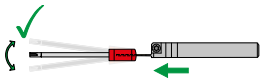
MaxiClick – System function

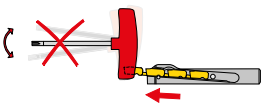


correct insert location in the seat

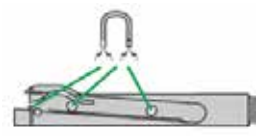


Withdraw cutting insert





Worn-out cutting edge is broken off towards the left or right side

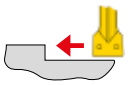


Magnets prevent the cutting insert from falling out of the tool holder during positioning

SX – Depths of cut and feed rates

SX-F2

Turning



Parting / Grooving

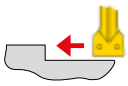


	Depth of Cut a_p in mm								
SX-F2	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**
Cutting width in mm	Feed rate f in mm/rev.								
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10					
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12			
4	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,17	0,05–0,15		

SX-F2
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25

SX-M2

Turning



Parting / Grooving

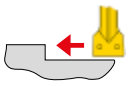


	Depth of Cut a_p in mm							
SX-M2	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Cutting width in mm	Feed rate f in mm/rev.							
2	0,05–0,17	0,05–0,13	0,05–0,10					
3	0,07–0,20	0,07–0,20	0,07–0,18	0,07–0,15				
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,18			
5	0,12–0,27	0,12–0,27	0,12–0,27	0,12–0,25	0,12–0,22			
6	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,25	0,15–0,20		

SX-M2
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,35

SX-27P

Turning



Parting / Grooving



	Depth of Cut a_p in mm							
SX-27P	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Cutting width in mm	Feed rate f in mm/rev.							
2	0,05–0,23	0,05–0,23	0,05–0,23	0,05–0,20				
3	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,20			
4	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,25		

SX-27P
Feed rate f in mm/rev.
0,05–0,20
0,05–0,25
0,05–0,30

SX/LX – Depths of cut and feed rates

SX-M1

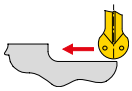
Parting / Grooving



SX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,15
3	0,10–0,20
4	0,10–0,25
5	0,15–0,30
6	0,15–0,35

SX-M3

Turning



Parting / Grooving

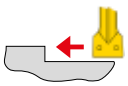


	Depth of Cut a_p in mm							
SX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius in mm	Feed rate f in mm/rev.							
1,5	0,15–0,35	0,15–0,35	0,15–0,30					
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30				
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35			
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50	0,20–0,40		

SX-M3
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,35

LX-M2

Turning



Parting / Grooving

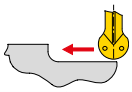


	Depth of Cut a_p in mm							
LX-M2	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Cutting width in mm	Feed rate f in mm/rev.							
8	0,17–0,45	0,17–0,45	0,17–0,45	0,17–0,45	0,17–0,40	0,17–0,37	0,17–0,35	
10	0,20–0,50	0,20–0,50	0,20–0,50	0,20–0,50	0,20–0,46	0,20–0,42	0,20–0,38	0,20–0,35

LX-M2
Feed rate f in mm/rev.
0,20–0,50
0,20–0,50

LX-M3

Turning



Parting / Grooving



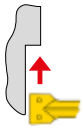
	Depth of Cut a_p in mm							
LX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius in mm	Feed rate f in mm/rev.							
4	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,70	0,25–0,60	0,25–0,50

LX-M3
Feed rate f in mm/rev.
0,15–0,35

AX/FX – Depths of cut and feed rates

AX-F50

Face turning



	Depth of Cut a_p in mm			
AX-F50	**0,5**	**1,0**	**1,5**	**2,3**
Size	Feed rate f in mm/rev.			
AX 05	0,03–0,10	0,03–0,10		
AX 10	0,03–0,13	0,03–0,13	0,03–0,135	
AX 15	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,15

Axial grooving



1. Plunging	
Feed rate f in mm/rev.	Feed rate f in mm/rev.
0,025–0,080	0,025–0,20
0,025–0,065	0,05–0,25
0,025–0,050	0,05–0,30

FX-F1

Parting / Grooving



FX-F1	
Cutting width in mm	Feed rate f in mm/rev.
2,2	0,025–0,10
3,1	0,05–0,15
4,1	0,05–0,20

FX-M1

Parting / Grooving



FX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2,20	0,05–0,15
3,10	0,08–0,18
4,10	0,10–0,20
5,10	0,15–0,28
6,50	0,15–0,33
8,20	0,20–0,40
9,70	0,20–0,40

FX-27P

Parting / Grooving



FX-27P	
Cutting width in mm	Feed rate f in mm/rev.
2,20	0,01–0,10
3,10	0,015–0,125
4,10	0,05–0,15

FX-R2

Grooving



FX-R2	
Cutting width in mm	Feed rate f in mm/rev.
3,10	0,10–0,275
4,10	0,15–0,35

11

TC – Reference values for profile depth and number of passes

All listed values are guide values for steel machining

Metric ISO 60° external thread

Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	4–8	5–9	6–10	7–11	8–12	9–14	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,32	0,48	0,64	0,8	0,95	1,10	1,26	1,58	1,89	2,21	2,53	2,84	3,16

Metric ISO 60° internal thread

Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	4–8	5–9	6–10	7–11	8–12	9–14	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,30	0,45	0,59	0,74	0,89	1,02	1,17	1,46	1,76	2,02	2,35	2,64	2,93

Whitworth 55° external and internal thread

TPI	28	26	24	20	19	18	16	14	12	11	10	9	8	7	6	5
Number/cuts	5–8	5–8	5–9	5–9	6–10	6–10	7–11	8–12	9–14	9–14	10–17	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,60	0,65	0,70	0,84	0,88	0,93	1,05	1,20	1,40	1,53	1,68	1,87	2,11	2,41	2,81	3,37

Partial profile 60° external and internal thread

External	TC 16-2EI-AG60																
	TC 16-1EI-A60									TC 16-2EI-G60				TC 16-3EI-N60			
Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	5–9	6–10	7–11	8–12	9–14	10–15	12–19	8–12	9–14	10–15	12–20	12–20	13–21	14–22	14–22
Thread profile depth in mm	0,33	0,52	0,71	0,90	1,09	1,28	1,47	1,84	2,22	1,23	1,42	1,79	2,17	2,45	2,83	3,21	3,59

Internal	TC 16-2EI-AG60																
	TC 16-1EI-A60									TC 16-2EI-G60				TC 16-3EI-N60			
Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	5–9	6–10	7–11	8–12	9–14	10–15	12–19	8–12	9–14	10–15	12–20	12–20	13–21	14–22	14–22
Thread profile depth in mm	0,27	0,44	0,60	0,76	0,92	1,09	1,25	1,57	1,90	1,04	1,20	1,52	1,85	2,07	2,40	2,72	3,05

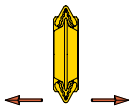
Partial profile 55° external and internal thread

External	TC 16-2EI-AG55												
	TC 16-1EI-A55												
TPI	28	26	24	20	19	18	16	14	12	11	10	9	8
Number/cuts	5–8	5–8	6–9	6–9	7–12	7–12	8–14	9–14	10–16	10–16	11–18	12–20	12–20
Thread profile depth in mm	0,66	0,72	0,79	0,95	1,01	1,07	1,21	1,39	1,63	1,79	1,97	2,20	2,48

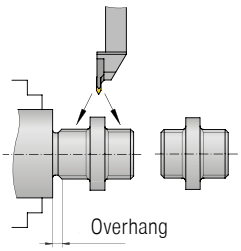
Internal	TC 16-2EI-G55						TC 16-3EI-N55		
TPI	14	12	11	10	9	8	7	6	5
Number/cuts	8–12	9–14	10–15	11–18	12–20	12–20	12–20	12–20	14–22
Thread profile depth in mm	1,22	1,46	1,56	1,80	2,03	2,31	2,40	2,89	3,56

Comparison threading system with TC and conventional

TC

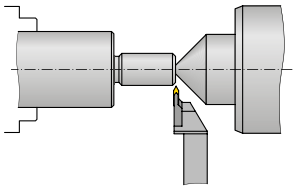


- Neutral configuration of insert makes operation in both directions possible
- Only one threading insert per pitch for partial profile and Whitworth thread; only two threading inserts (internal - external) per pitch for ISO threads
- Reduced stock holding
- good chip formation due to chip breaker with rake angle + 10°

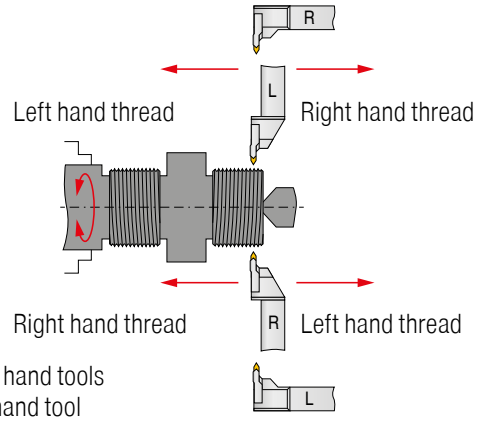


Greater efficiency through:

- shorter operating time
- Less tool changing
- High stability wih small overhang
- Material saving
- Thread turning between shoulders
- Fewer tools and indexable inserts



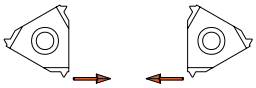
- Very good access to workpiece, therefore use of tailstock also possible with small thread diameters



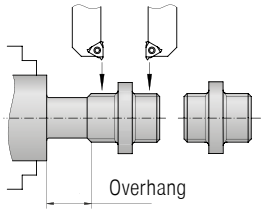
R = Right hand tools
L = Left hand tool

- ease of use, as the tools have no pitch angle correction they can be used in both directions

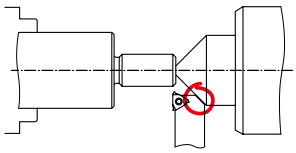
Conventional



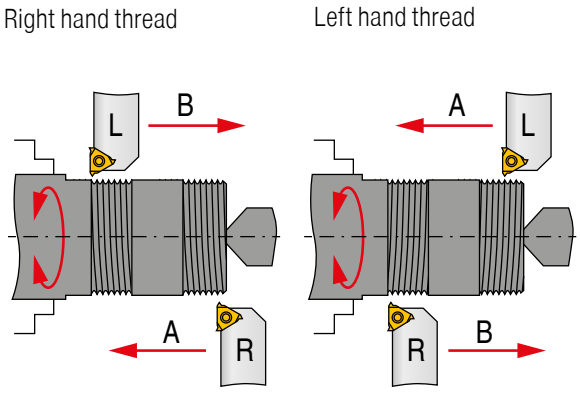
- Right-hand and left-hand version of indexable insert, therefore operation only in one direction
- For every pitch 4 threading inserts are necessary (right – left, internal – external)



- For this machining method 2 tools are required
- additional material and stability loss with large overhang



- poor accessibility
- Collision danger

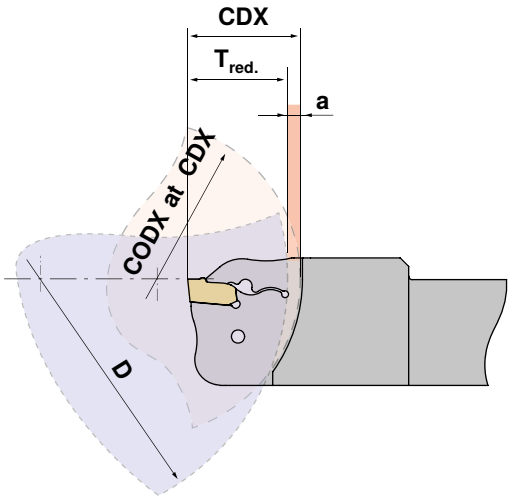


- With conventional thread turning the correction of the helix angle is necessary, therefore a high degree of application know-how is required
- Can only be operated in one direction

11

ModularClamp

GX | SX | LX | FX



The ModularClamp grooving modules are matched according to size on a particular workpiece diameter CODX. If the diameter of the workpiece is greater than CODX of the grooving Modules, this reduces the achievable penetration depth by the dimension „a“. The extent of reduction can be determined with the following table.

CDX	maximum plunge depth in mm
CDOX	maximum workpiece Ø with full penetration depth in mm
a	Reduction amount in mm

$T_{red.} = CDX - a$

Grooving depth reduction

	Reduction a (mm) of the maximum grooving depth (CDX)																
Size		0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0
E12	35	40	45	60	75	115	>250										
E16	50	55	60	70	80	100	130	200	>420								
E20	60	65	70	75	85	95	110	130	165	220	>330						
E25	75	80	85	90	100	110	125	140	160	190	240	320	>500				
E32	95	100	105	110	120	125	135	145	160	180	200	225	270	320	400	530	>800
	Workpiece diameter D (mm)																

Maximum workpiece diameter (CODX) with full penetration depth (CDX) in mm

Calculation example:

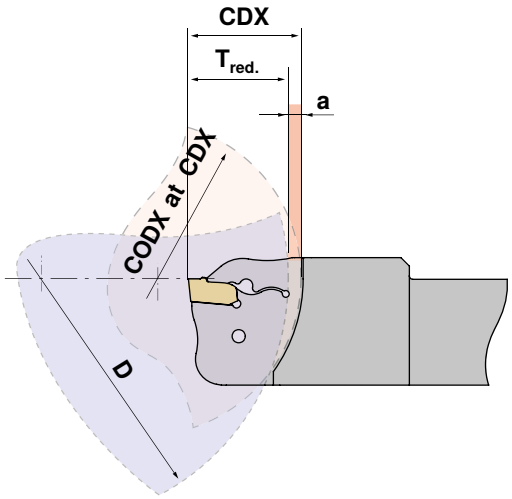
E25R**21**-GX24-3

Size 25 — CDX = 21 mm, Ø 75 mm

D = Ø 100 mm — CDX–a = $T_{red.}$ 21–2 = 19 mm

MonoClamp

SX



Depending on the groove width and shank size, the MonoClamp tools are designed for use with a specific workpiece diameter CDOX. If the workpiece diameter is larger than the CDOX of the grooving module, the achievable groove depth is reduced by the dimension „a“. The extent of the reduction is determined using the following table.

CDX maximum plunge depth in mm
CDOX maximum workpiece Ø with full penetration depth in mm
a Reduction amount in mm

$T_{red.} = CDX - a$

Grooving depth reduction

	Reduction a (mm) of the maximum grooving depth (CDX)																
Shank	0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
E12R/L0022...	44	70	80	95	115	150	225	>450									
E16R/L0026...	52	90	105	125	155	210	305	>600									
E20R/L0026...	52	110	125	140	160	195	240	320	475	>950							
E20R/L0033...	66	110	125	140	160	195	240	320	475	>950							
E25R/L0026...	52	140	160	190	235	310	465	>930									
E25R/L0033...	66	155	175	200	230	275	340	450	675	>1350							
E25R/L0040...	80	155	175	200	230	275	340	450	675	>1350							
	Workpiece diameter D (mm)																

Maximum workpiece diameter (CODX) with full penetration depth (CDX) in mm

Calculation example:

E25R0033...

CDX = 33 mm, Ø 66 mm

D = Ø 200 mm	CDX–a = $T_{red.}$ 33–1,5 = 31,5 mm

Clamping Method – SX-System

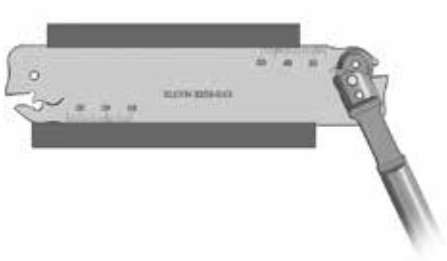
System function – inserting and removing the cutting inserts

Precision system for internal and external grooving.

The key has been designed in such a way that it will not stress the material beyond its 'elastic limit'.

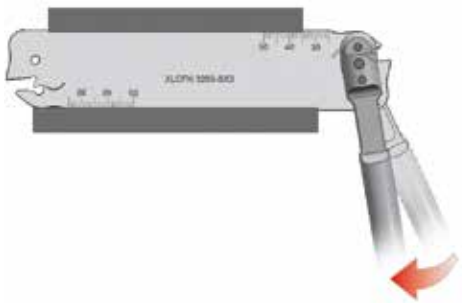
With this alternate system the material always remains in its flexible range and provides a substantial increase in tool life.

1



Locate wrench into blade with pins located in two holes

2



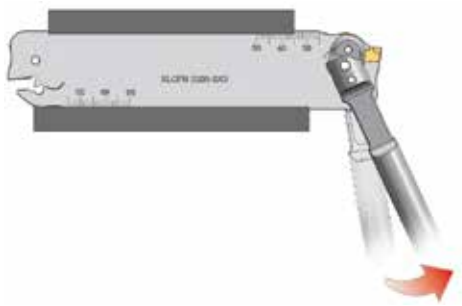
Movement of the fitting key in the direction of the insert seat opens the tool.

3



Load the grooving insert into position and press against the seat.

4



Moving the key forward causes the insert seat to close and clamp the insert.

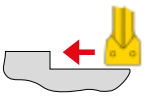
When changing the inserts, always maintain tension on the key!

The clamp is designed so that the wrench can be inserted from both sides of the blade according to the accessibility.



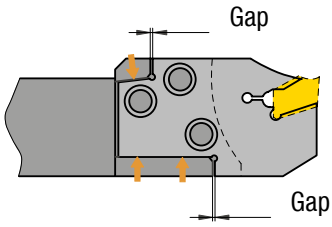
Maximum blade projection when turning

Blade	max. overhang
SX 2 – SX 3	25 mm
SX 4 – SX 5	30 mm
SX 6	35 mm



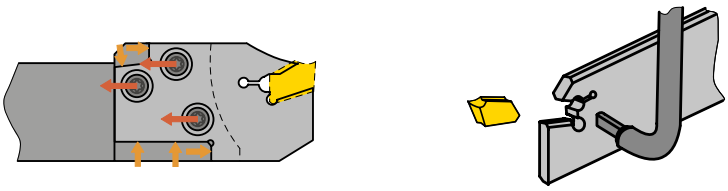
Clamping function – ModularClamp-Module

Module unclamped



- Gap between module and support face for axial clamping

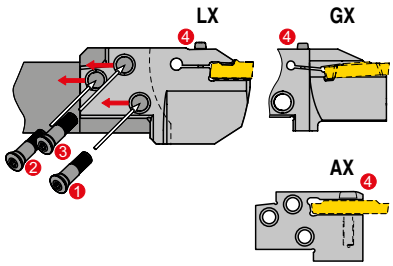
Module clamped



- Axial clamping with support face
- Connection free from play, therefore maximum stability

GX LX AX

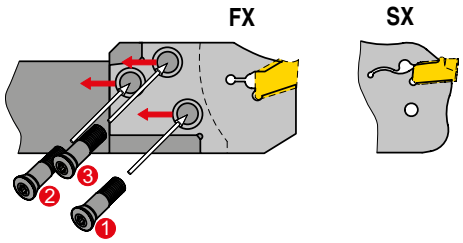
Active insert clamping



Clamping screws 1, 2 and 3 are used to clamp the modules.
The insert is clamped in the module via the additional screw 4.

FX SX

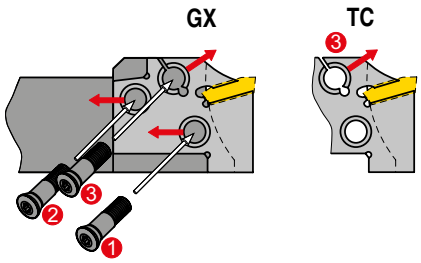
Self clamping of the insert



Clamping screws 1, 2 and 3 are used for clamping the module.
The insert is self-clamping.

GX TC

Active insert clamping

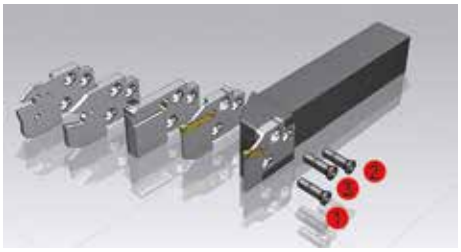


Clamping screws 1 and 2 are used for clamping the module.
Important: first tighten clamp screws 1 and 2.
Then clamp the insert with screw 3.

11

Torque Moment ModularClamp Module Screws

ModularClamp – Tool holder



Order for the pre-and tightening of the screws!

ModularClamp – Tool holder	Screw	Torx	Torque	
			Nm	in.lbs
E12..	M2,5x10	T08	1,2	10,6
E16..	M3,5x12,5	T15	3,2	28,3
E20..	M4x14	T15	4,0	35,4
E25..	M5x18	T20	5,0	44,3
E32..	M6x20	T25	6,0	53,1

ModularClamp – Boring bar



Order for the pre-and tightening of the screws!

ModularClamp – Boring bar	Screw	Torx	Torque	
			Nm	in.lbs
I16..	M2,5x10	T08	1,2	10,6
I20..	M3x11	T10	2,0	17,7
I25..	M3,5x12,5	T15	3,2	28,3
I32..	M4,5x17	T20	4,0	35,4
I40..	M5x18	T20	5,0	44,3

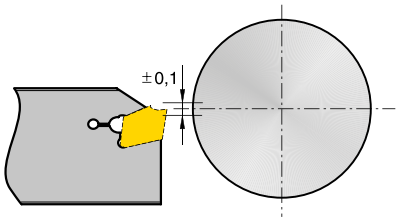
Tightening torque for the insert clamping

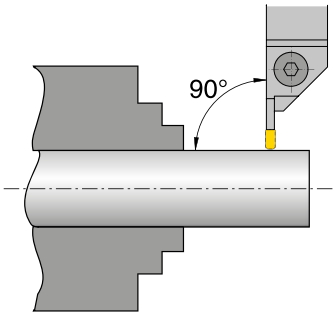
Recommended tightening torque

Grooving systems	Screw	Torx	Torque	
			Nm	in.lbs
GX / AX / LX	M3,5	T15	3,2	28,3
	M4,0	T15/T20	4,0	35,4
	M5,0	T20	5,0	44,3

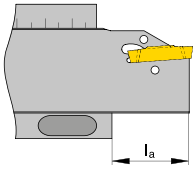
General references

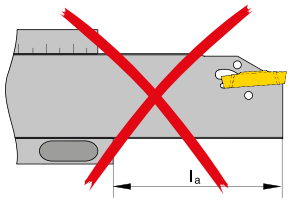
Tool position

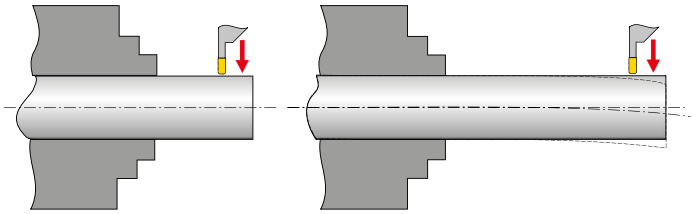




Tool overhang

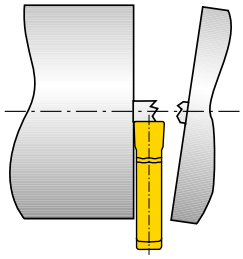




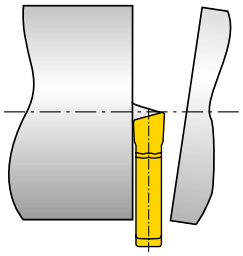


As a rule of thumb: Overhang l_a should not be greater than 8xs (Groove width).

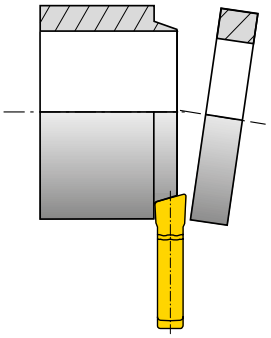
References for Parting off



From Ø 5 mm on, reduce feed „f“ by approx. 50 %. No parting across centre (risk of breakage).

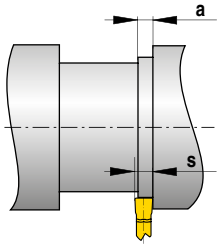


For parting pip-free, use R or L inserts. In order to minimize lateral deflection reduce feed by approx. 20–50 %.

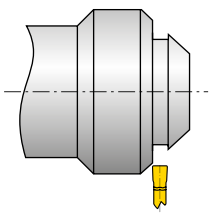


In order to prevent ring formation, use R or L inserts. Reduce feed „f“ because of lateral deflection by approx. 20–50 %.

References for grooving

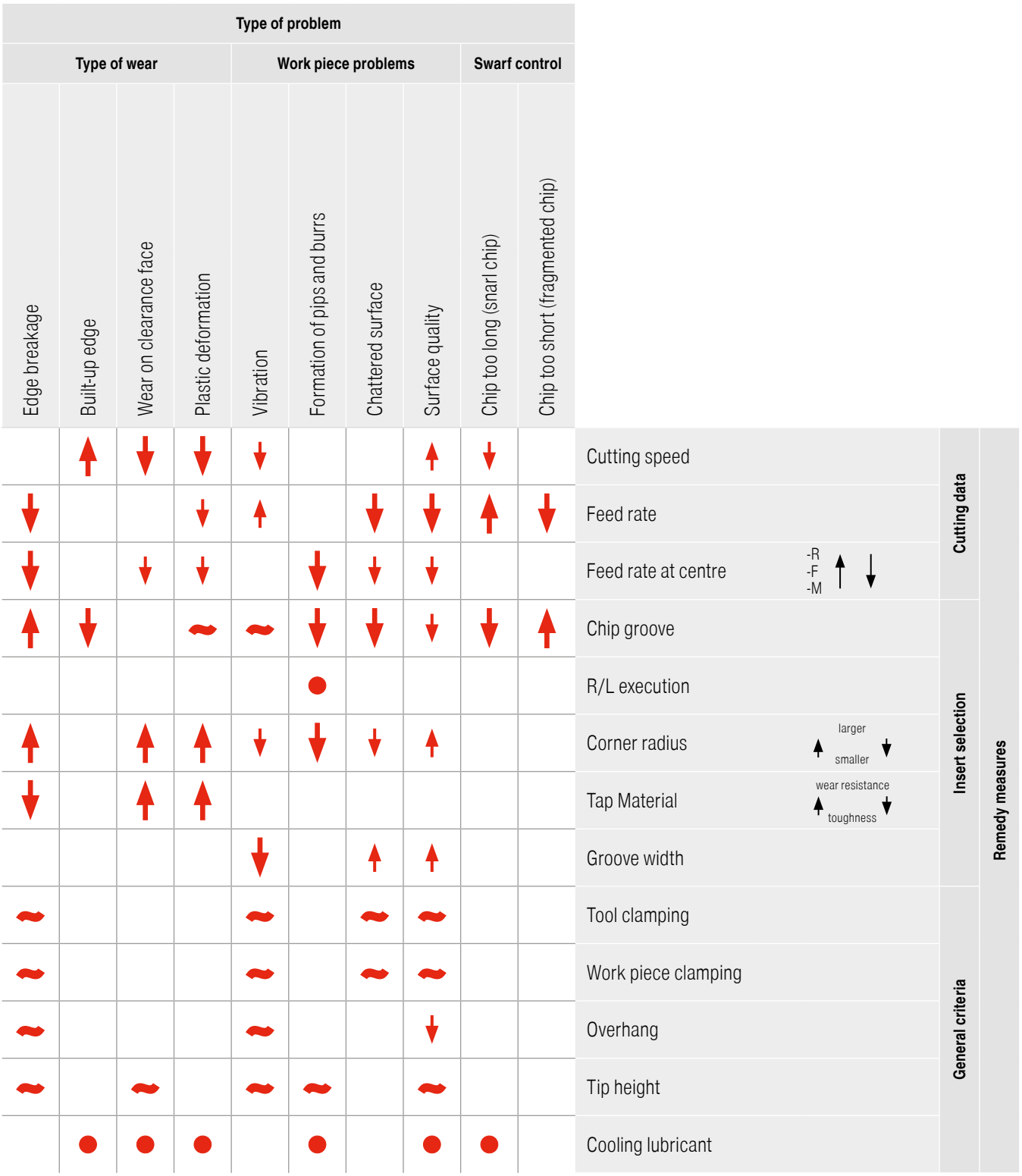


When grooving with an axial displacement the width **„a“** should amount to at least 70 % of the grooving width **„s“**.



When grooving oblique surfaces the feed should be reduced by approx. 20–50 % until fully engaged.

Trouble shooting guide for grooving FX/SX/GX/LX



raise, increase large influence

raise, increase small influence

avoid, reduce large influence

avoid, reduce small influence

check, optimise

use

Trouble shooting guide for TC threading

Type of problem												
Type of wear				Workpiece				Swarf control				
Wear on clearance face	Break out cut	Plastic deformation	Built-up edge	Formation of a shoulder at the external thread Ø	Profile	Surface quality	Chatter marks, vibrations	Chip too thick	Chip too thin	Chip shape (snarl chip)		
↓		↓	↑			↑	↓				Cutting speed	Cutting data
a, b	a, b		a, b	a, b		a, b	a, b	a, b		a, b	Feed (a – over the flanks; b – Alternating flanks)	Cutting data
↑	↓	↓		↓	↓	↓	↓	↓	↑	~	Feed (Cutting depth)	Cutting data
↓	↑	↑		~	~	↑	~	↑	↓	↓	Number of passes	Cutting data
				●	●	●					Spring cut (Air cut)	Cutting data
			●			●	●			●	Chip groove	Indexable insert selection
↑	↓	↑									Tap Material (wear resistance ↑ ↓ toughness)	Indexable insert selection
				●	●	●					Full profile	Indexable insert selection
											Partial profile	Indexable insert selection
	~					~	~				Stable tool holder / insert	Various criteria
	~					~	~				Stable workpiece	Various criteria
	↓					↓	↓				Overhang	Various criteria
~	~	~			~	~	~				Tip height	Various criteria
●	●	●	●	●		●					Cooling lubricant	Various criteria

Remedy measures

11

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ check, optimise
● use

Wear causes

Wear on clearance face



Abrasion on the flank, normal wear after a given operation time.

Cause

- cutting speed too high
- grade with too low wear resistance
- insufficient coolant

Remedy

- Reduce the cutting speed
- select a more wear resistant grade
- Improve/check coolant feed

Edge chipping



Excessive mechanical stress on the cutting edge causing carbide particles to break out.

Cause

- too hard grade
- vibration
- too high feed and depth of cut
- chip impact

Remedy

- use tougher grade
- use negative geometry with chip breaker
- reduce overhang, check center height
- stabilize the cutting edge

Cratering



The outgoing hot chip causes cratering of the insert on the clamping surface.

Cause

- too high cutting speed, feed, or both
- too low rake angle
- grade with too low wear resistance
- incorrectly supplied cooling

Remedy

- Reduce cutting speed and / or feed
- Check coolant flow and / or increase pressure
- Use harder grade

Plastic deformation



Large mechanical load produces high temperature machining, this can lead to plastic deformation.

Cause

- too high operating temperature, thus softening the base material
- unsuitable grade
- inadequate coolant supply

Remedy

- Reduce the cutting speed
- select a more wear resistant grade
- use coolant

Built-up edge



Weld deposits of material on the cutting edge occurs when the chip does not flow caused by low average temperature.

Cause

- too low cutting speed
- too low rake angle
- Incorrect grade
- lack of cooling / lubrication

Remedy

- Increase the cutting speed
- Increase rake angle
- Use TiN coating
- increase coolant strength

Notch wear



Contraction at maximum cutting depth.

Cause

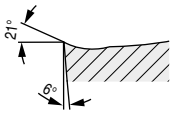
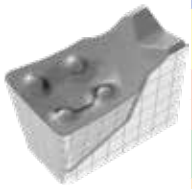
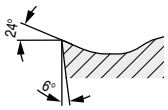
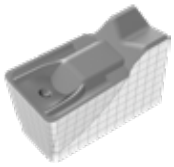
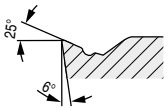
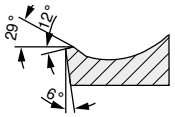
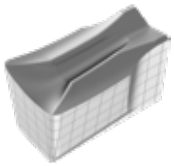
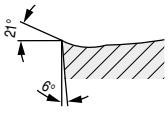
- Oxidation at the cutting edge
- Too high a temperature at the edge

Remedy

- Use different cutting depths
- Reduce cutting speed
- Improve/check coolant feed

Chip breakers / Applications

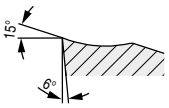
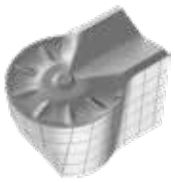
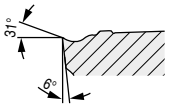
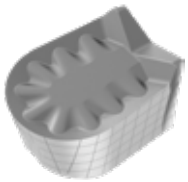
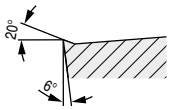
System GX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** CTP1340 (CCN1340) CTP1340 (CCN1340)	**CTPP345 (HCN1345)** **CTPP345 (HCN1345)** CTPP345 (HCN1345)		0,05–0,15
-Standard / -E ▲ positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ universal application ▲ first choice for axial grooving		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** **CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340)	CTPP345 (HCN1345) CTPP345 (HCN1345) **CTP1340 (CCN1340)** CTPP345 (HCN1345)		0,05–0,17
-M40 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325 (HCR1325)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345) **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTP1340 (CCN1340)** CTPP345 (HCN1345)		0,075–0,20
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325 (HCR1325)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345) **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTP1340 (CCN1340)** CTPP345 (HCN1345)		0,1–0,20
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 H216T (CWK26) 	 H216T (CWK26) 	 H216T (CWK26) 		0,05–0,25

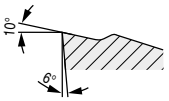
11

Chip breakers / Applications

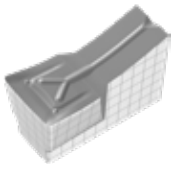
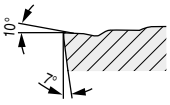
System GX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
Standard – Radius ▲ positive geometry ▲ honed cutting edge ▲ low-medium feed rates ▲ low cutting forces ▲ Radius grooving/copy turning		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP325/CTP1340 (HCR1325/CCN1340)** **CTP1340 (CCN1340)** **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340 (CCN1340) **CTP1340 (CCN1340)**		0,05–0,20
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325 (HCR1325)** CTCP335 (HCR1335) **CTCP325 (HCR1325)**	**CTCP325/CTCP335 HCR1325/HCR1335** CTCP335 (HCR1335) **CTCP325/CTCP335 (HCR1325/HCR1335)**	**CTCP335 (HCR1335)** **CTCP335 (HCR1335)**		0,07–0,20
-27P – Radius ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		**H216T (CWK26)**	**H216T (CWK26)**	**H216T (CWK26)**		0,05–0,30

Circlip grooving

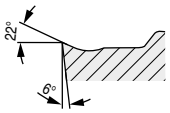
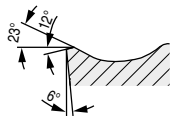
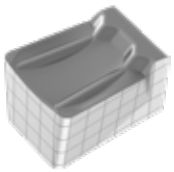
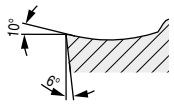
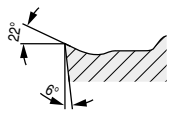
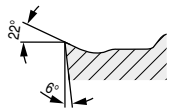
Standard ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CCN1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)			0,05–0,30

System AX

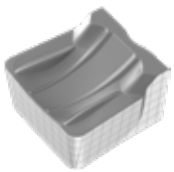
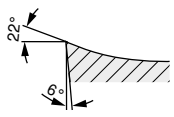
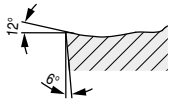
-F50 ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CCN1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CCN1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)			0,025–0,125

Chip breakers / Applications

System SX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** CTP1340 (CCN1340) CTP1340/CTPP345 (CCN1340/HCN1345)	**CTPP345 (HCN1345)** **CTPP345 (HCN1345)**		0,05–0,15
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325 (HCR1325)** CTCP335 (HCR1335) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTCP325 (HCR1325)** CTPP345 (HCN1345)		0,10–0,20
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325 (HCR1325)** CTCP335 (HCR1335) CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340) CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) CTCP335 (HCR1335) CTPP345 (HCN1345)		0,075–0,20
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		H216T (CWK26)	H216T (CWK26)	H216T (CWK26)		0,05–0,25
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving / Copy turning		**CTCP335 (HCR1335)** **CTCP335 (HCR1335)** **CTCP335 (HCR1335)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340)		0,05–0,20

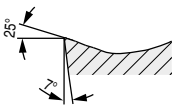
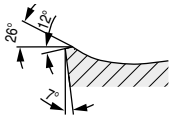
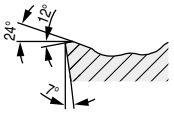
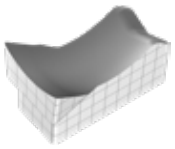
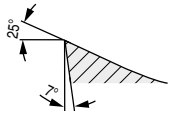
System LX

-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325 (HCR1325)** CTCP335 (HCR1335) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335 (HCR1335)** CTP1340 (CCN1340) **CTCP335 (HCR1335)** CTP1340 (CCN1340)		0,20–0,50
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325 (HCR1325)** **CTCP335 (HCR1335)** **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340)		0,15–0,35

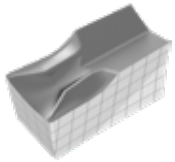
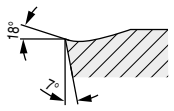
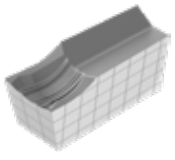
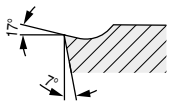
11

Chip breakers / Applications

System FX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F1 ▲ very positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ good chip control ▲ low cutting edge build up		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** CTCP325/CTP1340 (HCR1325/CCN1340) CTP1340/CTPP345 (CCN1340/HCN1345)	**CTPP345 (HCN1345)** **CTPP345 (HCN1345)** CTPP345 (HCN1345)		0,05–0,15
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325 (HCR1325)** **CTCP335 (HCR1335)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTP1340 (CCN1340)** **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTCP325 (HCR1325)** CTPP345 (HCN1345)		0,08–0,20
-R2 ▲ very stable cutting edge ▲ high feed rates ▲ good chip control		**CTCP325 (HCR1325)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345) **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) CTPP345 (HCN1345)		0,10–0,27
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T (CWK26)** 	 **H216T (CWK26)** 	 **H216T (CWK26)** 		0,03–0,13

System MC

-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) 		0,05–0,10
-F3 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ reduced burrs / edge build up		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	 		0,02–0,06

Example of Coding Grooving Tools

Grooving insert

GX	16	2	E	3.00	N	0.50
Grooving system (GX)	Insert length (16 mm)	Width class of the holder / module or support surface (2 mm)	Type of insert, application	Groove width (3.0 mm)	Insert seat N = Neutral L = Left Handed R = Right Handed	Corner radius size (0.5 mm)

Module

E	25	R	12	GX	16	2
Application E = external I = internal	Size (25 mm)	Module version R = Right Handed L = Left Handed	Maximum groove depth (12 mm)	Grooving system (GX)	Insert size (16 mm)	Width class 2

Basic holder

E	25	R	00	2525	L
Application E = external I = internal	Size (25 mm)	Holder version R = Right Handed L = Left Handed	Approach angle 0°	Shank type 25x25mm	Shank length L = (sh. ISO)

Monobloc tool holder

E	25	R	00	33	2525	M	K	DC	SX3
Application E = external I = internal	Size (25 mm)	Holder version R = Right Handed L = Left Handed	Approach angle 0°	Groove depth (33 mm)	Shank type 25x25mm	Shank length M = (sh. ISO)	Insert clamping K = Key	Cooling system DC = DirectCooling	Grooving system/ width (3.0 mm)

Compilation

Basic holder	Module	Grooving insert
E25 R 00 - 2525L	E25 R 12 - GX 16-2	GX 16-2 E3.00 N 0.50

Grades Overview

CTCP325 / HCR1325
- ▲ Carbide, TiCN-Al_2O_3-coated
- ▲ ISO | **P25 I K30** | M20
- ▲ The wear-resistant solution for steel and cast iron materials at high cutting speeds

CTCP335 / HCR1335
- ▲ Carbide, TiCN-Al_2O_3-coated
- ▲ ISO | **P35** | M30 | **K35**
- ▲ The reliable choice for machining steel and cast iron materials

CTPP345 / HCN1345
- ▲ Carbide, TiAlTaN-coated
- ▲ ISO | **P45** | **M40** | S40
- ▲ The reliable solution for steel materials and austenitic steels under unstable conditions

CTP1340 / CCN1340
- ▲ Carbide, TiAlTaN-coated
- ▲ ISO | **P30** | **M25** | **K30** | **S30** | N30
- ▲ The universal high-performance grade for steel materials, austenitic steel, cast iron materials and heat-resistant alloys

CTPP520 / DPX1520
- ▲ Carbide, TiAlTaN-coated
- ▲ ISO | **P20** | **M15** | **K25** | N25 | S25
- ▲ The wear-resistant grade for wet machining of steels

CTPP535 / DPX1535
- ▲ Carbide, AlTiN-coated
- ▲ ISO | **P35** | **M30** | **S30** | N30
- ▲ The tough thread turning grade for universal application

H216T / CWK26
- ▲ Carbide, uncoated
- ▲ ISO | **K15** | **N15**
- ▲ The uncoated carbide grade for machining aluminium and other non-ferrous metals
- ▲ Also highly suitable for HSC machining

CWX500
- ▲ Carbide, TiAlN-coated
- ▲ ISO | **K30**
- ▲ The universal carbide grade for almost all materials

Application

Grade designation		Standard designation	ISO application range (01 05 10 15 20 25 30 35 40 45 50)	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S
Grooving								
CTCP325 (HCR1325)	DRAGONSKIN	HC-P25		●				
		HC-M20			○			
		HC-K30				●		
CTCP335 (HCR1335)	DRAGONSKIN	HC-P35		●				
		HC-K35			●			
		HC-M30				○		
CTPP345 (HCN1345)	DRAGONSKIN	HC-P45		●				
		HC-M40			●			
		HC-S40						○
CTP1340 (CCN1340)	DRAGONSKIN	HC-P30		●				
		HC-M25			●			
		HC-K30				●		
		HC-N30					○	
		HC-S30						●
H216T (CWK26)		HW-K15				●		
		HW-N15					●	
TC thread								
CTPP520 (DPX1520)	DRAGONSKIN	HC-P20		●				
		HC-M15			●			
		HC-K25				●		
		HC-N25					○	
		HC-S25						○
CTPP535 (DPX1535)	DRAGONSKIN	HC-P35		●				
		HC-M30			●			
		HC-N30					○	
		HC-S30						●
H216T (CWK26)		HW-K15				●		
		HW-N15					●	

● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c− tough

11





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools 12

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

System overview	3
Toolfinder	2+3
Product programme	
UltraMini	4–35
MiniCut	36–54
UltraMini + MiniCut Hard Turning	8+37
SlotCut – Broaching	55–58
Technical Information	
Coatings and thread types	59–61
Broaching – Recommendations for Correct Use	62
Cutting Data	63

WNT \ Performance

Premium quality tools for high performance.

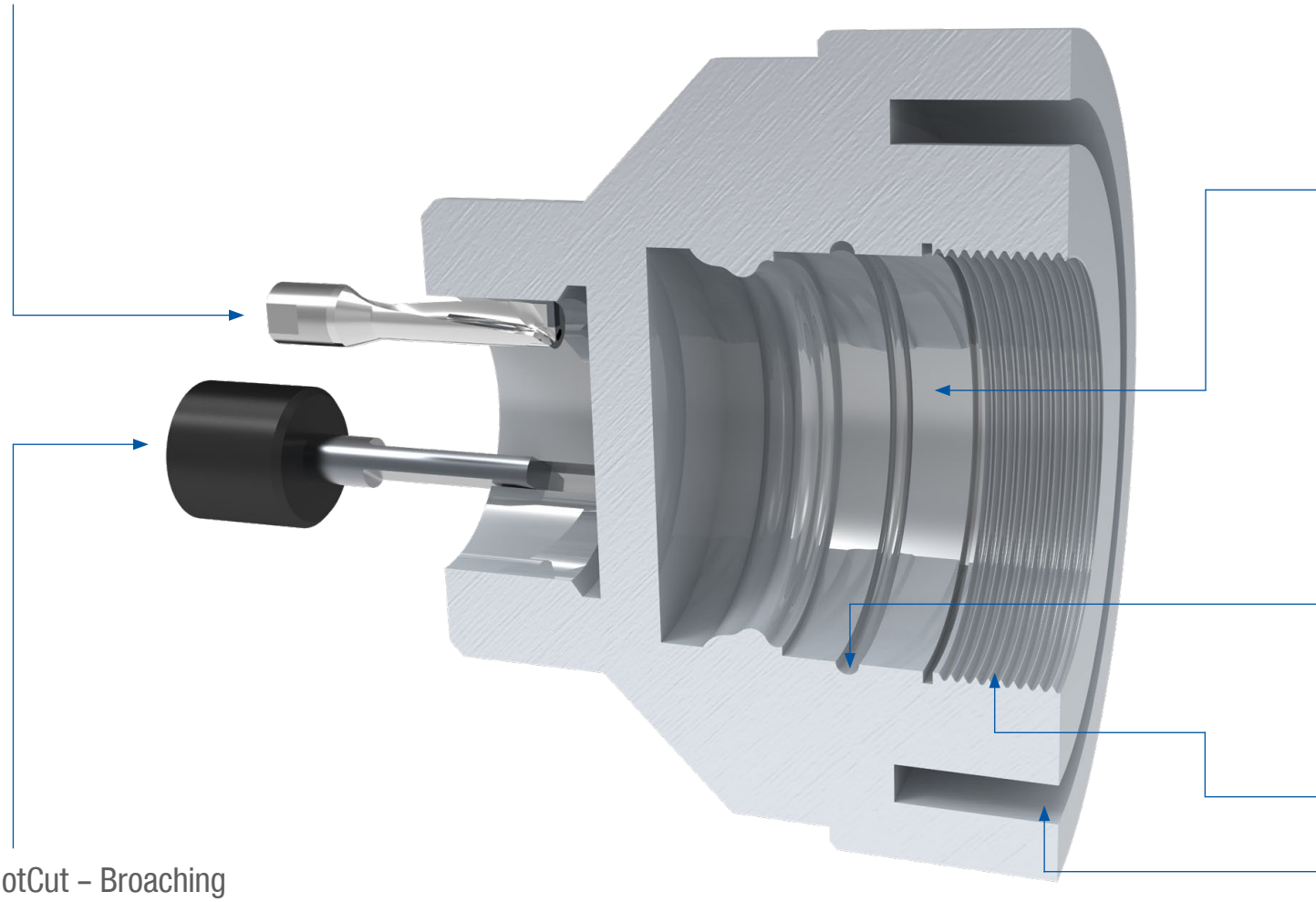
The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Toolfinder

EcoCut Mini

From Ø 2 mm

Inserts and tool holders can be found in → **Chapter 10 – EcoCut**



SlotCut – Broaching

Inserts + Holder DIN138 55–58

System overview

UltraMini



- from Ø 0.5 mm
- flexible system
- ground inserts
- high repeatability
- coolant supply to the cutting edge

MiniCut



- from Ø 7.8 mm
- stable three-rib interface
- easy handling
- coolant supply to the cutting edge
- precise cutting edge position

SlotCut

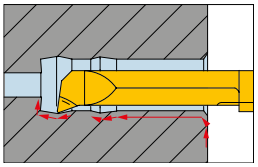


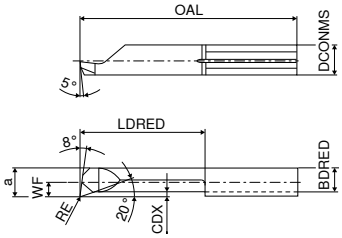
- broaching directly on the machine
- usable from Ø 6 mm
- low machine load
- variety of tolerance classes

Hole diameter in mm		UltraMini										MiniCut					
			≥ 0,5	≥ 2	≥ 2,4	≥ 2,8	≥ 3	≥ 4	≥ 5	≥ 6	≥ 8	≥ 16		≥ 8	≥ 9	≥ 11	≥ 14	≥ 16
Internal turning and profiling			4–7	4–7	4–7	4–7		4–7	4–7	4–7				36	36	36	36	36
Internal turning and profiling – hard turning				8		8		8	8	8				37		37	37	37
High-feed turning				10			10	10	10	10								
Turning and profile turning – super alloys				9		9		9	9	9								
Internal turning						11		11	11					38	38	38	38	38
Back boring							12	12	12	12				39	39	39	39	
Turning and chamfering									13	13				39	39	39	39	
Pre-parting and chamfering								13	13	13				40	40	40	40	40
Groove turning				14–16			14–16	14–16	14–16	14–16				41+42	40	40	40	40
Internal Undercuts				17		17		17	17	17				43	43	43	43	43
Groove and profile turning								18	18	18				44	44	44	44	44
Internal thread turning					19–22			19–22	19–22	19–22				45–48	45–48	45–48	45–48	45–48
Axial grooving									23–28	23–28	23–28	23–28		49+50	49+50	49+50	49+50	49+50
Suitable holder								31–35								51–54		
Sets								29+30								50		

12

UltraMini – Inserts for internal turning and profiling













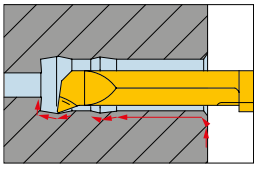
Illustrations show right-hand versions

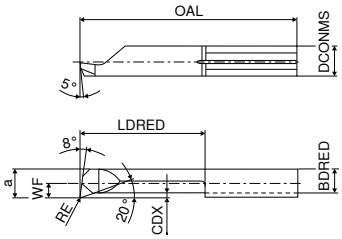
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 005 ...		Right-hand Y5 Article no. 73 004 ...		Left-hand Y5 Article no. 73 005 ...		Right-hand Y5 Article no. 73 004 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
R/L 050.05-2	4		0,5	0,4	20	2	0,03	0,32	0,02	645.00..-D	30,41	500	30,41	500				
R/L 050.06-2	4		0,6	0,5	20	2	0,05	0,40	0,04	645.00..-D	30,41	510	30,41	510				
R/L 050.06-3	4		0,6	0,5	20	3	0,05	0,40	0,04	645.00..-D	31,30	511	31,30	511				
R/L 050.08-4	4		0,8	0,7	20	4	0,05	0,60	0,04	645.00..-D					31,64	812	31,64	812
R/L 050.1-8	4		1,0	0,9	22	8	0,10	0,75	0,05	645.00..-D					31,30	813	31,30	813
R/L 050.15-5	4		1,5	1,3	19	5	0,10	1,15	0,05	645.00..-D	28,98	515	28,98	515				
R/L 050.15-10	4		1,5	1,3	24	10	0,10	1,15	0,05	645.00..-D	29,65	516	29,65	516				
R/L 050.15-12	4		1,5	1,3	26	12	0,10	1,15	0,05	645.00..-D					31,30	818	31,30	818
R/L 050.2-5	4		2,0	1,7	19	5	0,10	1,50	0,05	645.00..-D	26,33	520	26,33	520				
R/L 050.2-10	4		2,0	1,7	24	10	0,10	1,50	0,05	645.00..-D	26,88	521	26,88	521				
R/L 050.2-15	4		2,0	1,7	29	15	0,10	1,50	0,05	645.00..-D	28,43	522	28,43	522				
R/L 050.3-10	4	0,6	2,8	2,6	24	10	0,20	2,30	0,10	645.00..-D	28,33	531	28,33	531				
R/L 050.3-16	4	0,6	2,8	2,6	30	16	0,20	2,30	0,10	645.00..-D	28,77	530	28,77	530				
R/L 050.3-20	4	0,6	2,8	2,6	34	20	0,20	2,30	0,10	645.00..-D	30,31	532	30,31	532				
R/L 050.35-10	4	1,1	3,5	3,1	24	10	0,25	2,80	0,10	645.00..-D					24,80	835	24,80	835
R/L 050.35-16	4	1,1	3,5	3,1	30	16	0,25	2,80	0,10	645.00..-D					26,12	836	26,12	836
R/L 050.35-20	4	1,1	3,5	3,1	34	20	0,25	2,80	0,10	645.00..-D					31,41	837	31,41	837
R/L 050.35-24	4	1,1	3,5	3,1	38	24	0,25	2,80	0,10	645.00..-D					34,38	838	34,38	838
R/L 050.4-10	4	1,5	4,0	3,5	24	10	0,30	3,00	0,10	645.00..-D	28,55	541	28,55	541	28,55	841	28,55	841
R/L 050.4-16	4	1,5	4,0	3,5	30	16	0,30	3,00	0,10	645.00..-D	28,98	540	28,98	540	28,98	840	28,98	840
R/L 050.4-20	4	1,5	4,0	3,5	34	20	0,30	3,00	0,10	645.00..-D	30,41	542	30,41	542	30,41	842	30,41	842
R/L 050.4-24	4	1,5	4,0	3,5	38	24	0,30	3,00	0,10	645.00..-D	32,96	545	32,96	545	32,96	845	32,96	845
R/L 050.4-28	4	1,5	4,0	3,5	42	28	0,30	3,00	0,10	645.00..-D	36,70	546	36,70	546	36,70	846	36,70	846
R/L 050.5-10	5	1,9	5,0	4,4	25	10	0,50	3,80	0,15	645.00..-D	26,78	551	26,78	551	26,78	851	26,78	851
R/L 050.5-15	5	1,9	5,0	4,4	30	15	0,50	3,80	0,15	645.00..-D	29,10	552	29,10	552	29,10	852	29,10	852
R/L 050.5-20	5	1,9	5,0	4,4	35	20	0,50	3,80	0,15	645.00..-D	29,86	550	29,86	550	29,86	850	29,86	850
R/L 050.5-25	5	1,9	5,0	4,4	40	25	0,50	3,80	0,15	645.00..-D	33,83	553	33,83	553	33,83	853	33,83	853
R/L 050.5-30	5	1,9	5,0	4,4	45	30	0,50	3,80	0,15	645.00..-D	36,70	554	36,70	554	36,70	854	36,70	854
R/L 050.5-35	5	1,9	5,0	4,4	50	35	0,50	3,80	0,15	645.00..-D	40,01	556	40,01	556	40,01	856	40,01	856
R/L 050.5-40	5	1,9	5,0	4,4	55	40	0,50	3,80	0,15	645.00..-D					44,97	857	44,97	857
R/L 050.6-15	6	2,3	6,0	5,3	30	15	0,50	4,50	0,15	676.00..-D	29,43	561	29,43	561	29,43	861	29,43	861
R/L 050.6-22	6	2,3	6,0	5,3	37	22	0,50	4,50	0,15	676.00..-D	30,64	560	30,64	560	30,64	860	30,64	860
R/L 050.6-25	6	2,3	6,0	5,3	40	25	0,50	4,50	0,15	676.00..-D	33,96	562	33,96	562	33,96	862	33,96	862
R/L 050.6-30	6	2,3	6,0	5,3	45	30	0,50	4,50	0,15	676.00..-D	37,25	563	37,25	563	37,25	863	37,25	863
R/L 050.6-35	6	2,3	6,0	5,3	50	35	0,50	4,50	0,15	676.00..-D	40,01	564	40,01	564	40,01	864	40,01	864
R/L 050.6-42	6	2,3	6,0	5,3	57	42	0,50	4,50	0,15	676.00..-D	44,64	565	44,64	565	44,64	865	44,64	865
R/L 050.7-20	7	2,8	6,8	6,3	35	20	0,60	5,50	0,15	676.00..-D	30,75	572	30,75	572	30,75	872	30,75	872
R/L 050.7-25	7	2,8	6,8	6,3	40	25	0,60	5,50	0,15	676.00..-D	38,58	573	38,58	573	38,58	873	38,58	873
R/L 050.7-30	7	2,8	6,8	6,3	45	30	0,60	5,50	0,15	676.00..-D	39,24	574	39,24	574	39,24	874	39,24	874
R/L 050.7-35	7	2,8	7,0	6,3	50	35	0,60	5,50	0,15	676.00..-D	40,66	575	40,66	575	40,66	875	40,66	875
R/L 050.7-40	7	2,8	7,0	6,3	55	40	0,60	5,50	0,15	676.00..-D	45,19	576	45,19	576	45,19	876	45,19	876
R/L 050.7-45	7	2,8	7,0	6,3	60	45	0,60	5,50	0,15	676.00..-D	47,94	577	47,94	577	47,94	877	47,94	877
R/L 050.7-50	7	2,8	7,0	6,3	65	50	0,60	5,50	0,15	676.00..-D	51,69	578	51,69	578	51,69	878	51,69	878

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

→ v_c Page 60

UltraMini – Inserts for internal turning and profiling









Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 005 ... EUR		Right-hand Y5 Article no. 73 004 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	mm					
R/L 050.2-5	4		2,0	1,7	19	5	0,1	1,5	0,05	645.00..-D	21,70	020	21,70	020
R/L 050.2-10	4		2,0	1,7	24	10	0,1	1,5	0,05	645.00..-D	22,26	021	22,26	021
R/L 050.2-15	4		2,0	1,7	29	15	0,1	1,5	0,05	645.00..-D	23,91	022	23,91	022
R/L 050.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,10	645.00..-D	21,93	031	21,93	031
R/L 050.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,10	645.00..-D	23,81	030	23,81	030
R/L 050.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,10	645.00..-D	26,12	032	26,12	032
R/L 050.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,10	645.00..-D	22,15	041	22,15	041
R/L 050.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,10	645.00..-D	23,91	040	23,91	040
R/L 050.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,10	645.00..-D	25,02	042	25,02	042
R/L 050.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,15	645.00..-D	22,26	051	22,26	051
R/L 050.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,15	645.00..-D	24,14	052	24,14	052
R/L 050.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,15	645.00..-D	25,24	050	25,24	050
R/L 050.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	0,15	645.00..-D	29,32	053	29,32	053
R 050.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,05	645.00..-D			31,19	054
L 050.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,15	645.00..-D	31,19	054		
R/L 050.6-15	6	2,3	6,0	5,3	30	15	0,5	4,5	0,15	676.00..-D	24,25	061	24,25	061
R/L 050.6-22	6	2,3	6,0	5,3	37	22	0,5	4,5	0,15	676.00..-D	25,78	060	25,78	060
R/L 050.6-25	6	2,3	6,0	5,3	40	25	0,5	4,5	0,15	676.00..-D	29,75	062	29,75	062
R/L 050.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	0,15	676.00..-D	32,07	063	32,07	063
R/L 050.7-20	7	2,8	6,8	6,3	35	20	0,6	5,5	0,15	676.00..-D	25,91	072	25,91	072
R/L 050.7-25	7	2,8	6,8	6,3	40	25	0,6	5,5	0,15	676.00..-D	30,31	073	30,31	073
R/L 050.7-30	7	2,8	6,8	6,3	45	30	0,6	5,5	0,15	676.00..-D	34,61	074	34,61	074

Steel	○	○
Stainless steel		
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

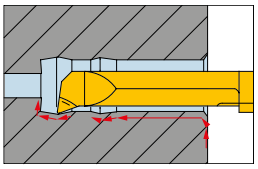
→ v_c Page 60

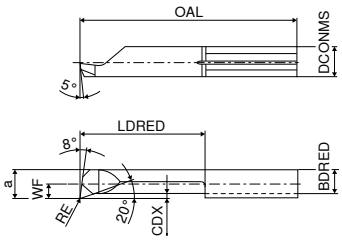
12

UltraMini – Inserts for internal turning and profiling

▲ with corner radius ≤ 0.05 mm









Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 021 ...		Right-hand Y5 Article no. 73 020 ...		Left-hand Y5 Article no. 73 023 ...		Right-hand Y5 Article no. 73 022 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
R/L 053.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,03	645.00..-D	30,20	**310**	30,20	**310**				
R/L 053.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,03	645.00..-D	31,74	**316**	31,74	**316**				
R/L 053.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,03	645.00..-D	37,48	**320**	37,48	**320**				
R/L 053.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,03	645.00..-D	30,20	**410**	30,20	**410**				
R/L 053.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,03	645.00..-D	31,74	**416**	31,74	**416**				
R/L 053.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,03	645.00..-D	35,82	**420**	35,82	**420**				
R/L 053.4-24	4	1,5	4,0	3,5	38	24	0,3	3,0	0,03	645.00..-D	39,68	**424**	39,68	**424**				
R/L 053.4-28	4	1,5	4,0	3,5	42	28	0,3	3,0	0,03	645.00..-D	43,87	**428**	43,87	**428**				
R/L 055.2-10	4		2,0	1,7	24	10	0,1	1,5	0,05	645.00..-D					30,97	**210**	30,97	**210**
R/L 055.2-15	4		2,0	1,7	29	15	0,1	1,5	0,05	645.00..-D					32,41	**215**	32,41	**215**
R/L 055.2-5	4		2,0	1,7	19	5	0,1	1,5	0,05	645.00..-D					30,31	**205**	30,31	**205**
R/L 055.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,05	645.00..-D					30,20	**310**	30,20	**310**
R/L 055.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,05	645.00..-D					31,74	**316**	31,74	**316**
R/L 055.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,05	645.00..-D					37,48	**320**	37,48	**320**
R/L 055.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,05	645.00..-D					30,20	**410**	30,20	**410**
R/L 055.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,05	645.00..-D					31,74	**416**	31,74	**416**
R/L 055.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,05	645.00..-D					35,82	**420**	35,82	**420**
R/L 055.4-24	4	1,5	4,0	3,5	38	24	0,3	3,0	0,05	645.00..-D					39,68	**424**	39,68	**424**
R/L 055.4-28	4	1,5	4,0	3,5	42	28	0,3	3,0	0,05	645.00..-D					43,87	**428**	43,87	**428**
R/L 055.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,05	645.00..-D					28,33	**510**	28,33	**510**
R/L 055.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,05	645.00..-D					30,20	**515**	30,20	**515**
R/L 055.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,05	645.00..-D					34,28	**520**	34,28	**520**
R/L 055.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	0,05	645.00..-D					38,58	**525**	38,58	**525**
R/L 055.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,05	645.00..-D					43,20	**530**	43,20	**530**
R/L 055.5-35	5	1,9	5,0	4,4	50	35	0,5	3,8	0,05	645.00..-D					47,61	**535**	47,61	**535**
R/L 055.6-15	6	2,3	6,0	5,3	30	15	0,5	4,5	0,05	676.00..-D					30,20	**615**	30,20	**615**
R/L 055.6-22	6	2,3	6,0	5,3	37	22	0,5	4,5	0,05	676.00..-D					34,28	**622**	34,28	**622**
R/L 055.6-25	6	2,3	6,0	5,3	40	25	0,5	4,5	0,05	676.00..-D					38,58	**625**	38,58	**625**
R/L 055.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	0,05	676.00..-D					43,20	**630**	43,20	**630**
R/L 055.6-35	6	2,3	6,0	5,3	50	35	0,5	4,5	0,05	676.00..-D					47,61	**635**	47,61	**635**
R/L 055.6-42	6	2,3	6,0	5,3	57	42	0,5	4,5	0,05	676.00..-D					52,90	**642**	52,90	**642**

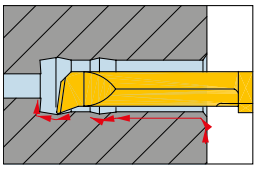
Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	●	●	●	●
Non ferrous metals	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened materials				

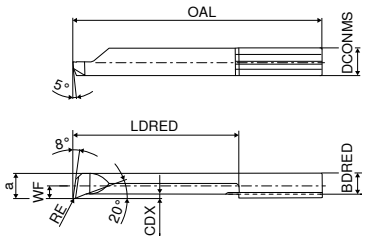
→ v_c Page 60

UltraMini – Inserts for internal turning and profiling

▲ with chip former

TiAlN TiAlN









Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 017 ... EUR		Right-hand Y5 Article no. 73 016 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	mm					
R/L 050.4-10C	4	1,5	4	3,5	24	10	0,3	3,0	0,2	645.00..-D	24,58	**410**	24,58	**410**
R/L 050.4-16C	4	1,5	4	3,5	30	16	0,3	3,0	0,2	645.00..-D	25,78	**416**	25,78	**416**
R/L 050.4-20C	4	1,5	4	3,5	34	20	0,3	3,0	0,2	645.00..-D	29,54	**420**	29,54	**420**
R/L 050.4-24C	4	1,5	4	3,5	38	24	0,3	3,0	0,2	645.00..-D	32,96	**424**	32,96	**424**
R/L 050.4-28C	4	1,5	4	3,5	42	28	0,3	3,0	0,2	645.00..-D	36,70	**428**	36,70	**428**
R/L 050.5-10C	5	1,9	5	4,4	25	10	0,5	3,8	0,2	645.00..-D	23,04	**510**	23,04	**510**
R/L 050.5-15C	5	1,9	5	4,4	30	15	0,5	3,8	0,2	645.00..-D	24,58	**515**	24,58	**515**
R/L 050.5-20C	5	1,9	5	4,4	35	20	0,5	3,8	0,2	645.00..-D	28,22	**520**	28,22	**520**
R/L 050.5-25C	5	1,9	5	4,4	40	25	0,5	3,8	0,2	645.00..-D	31,96	**525**	31,96	**525**
R/L 050.5-30C	5	1,9	5	4,4	45	30	0,5	3,8	0,2	645.00..-D	36,04	**530**	36,04	**530**
R/L 050.5-35C	5	1,9	5	4,4	50	35	0,5	3,8	0,2	645.00..-D	40,01	**535**	40,01	**535**
R/L 050.6-15C	6	2,3	6	5,3	30	15	0,5	4,5	0,2	676.00..-D	24,58	**615**	24,58	**615**
R/L 050.6-22C	6	2,3	6	5,3	37	22	0,5	4,5	0,2	676.00..-D	28,22	**622**	28,22	**622**
R/L 050.6-25C	6	2,3	6	5,3	40	25	0,5	4,5	0,2	676.00..-D	31,96	**625**	31,96	**625**
R/L 050.6-30C	6	2,3	6	5,3	45	30	0,5	4,5	0,2	676.00..-D	36,04	**630**	36,04	**630**
R/L 050.6-35C	6	2,3	6	5,3	50	35	0,5	4,5	0,2	676.00..-D	40,01	**635**	40,01	**635**
R/L 050.6-42C	6	2,3	6	5,3	57	42	0,5	4,5	0,2	676.00..-D	44,64	**642**	44,64	**642**
R/L 050.7-20C	7	2,8	7	6,3	35	20	0,6	5,5	0,2	676.00..-D	28,43	**720**	28,43	**720**
R/L 050.7-25C	7	2,8	7	6,3	40	25	0,6	5,5	0,2	676.00..-D	32,29	**725**	32,29	**725**
R/L 050.7-30C	7	2,8	7	6,3	45	30	0,6	5,5	0,2	676.00..-D	36,48	**730**	36,48	**730**
R/L 050.7-35C	7	2,8	7	6,3	50	35	0,6	5,5	0,2	676.00..-D	40,66	**735**	40,66	**735**
R/L 050.7-40C	7	2,8	7	6,3	55	40	0,6	5,5	0,2	676.00..-D	45,19	**740**	45,19	**740**
R/L 050.7-45C	7	2,8	7	6,3	60	45	0,6	5,5	0,2	676.00..-D	47,94	**745**	47,94	**745**
R/L 050.7-50C	7	2,8	7	6,3	65	50	0,6	5,5	0,2	676.00..-D	51,69	**750**	51,69	**750**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

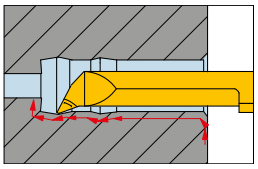
12

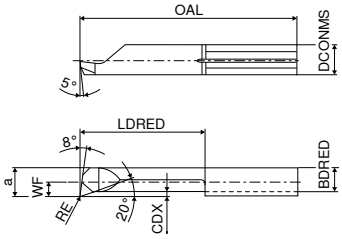
UltraMini – Inserts for internal turning and profiling – hard turning

▲ 46 to 65 HRC



TiAlN+ TiAlN+









Illustrations show right-hand versions

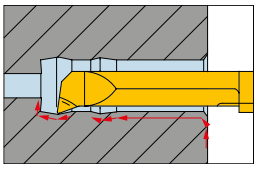
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 025 ...		Right-hand Y5 Article no. 73 024 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
R/L 050.2-5	4		2,0	1,7	19	5	0,1	1,5	0,05	645.00..-D	36,70	**920**	36,70	**920**
R/L 050.2-10	4		2,0	1,7	24	10	0,1	1,5	0,05	645.00..-D	37,36	**921**	37,36	**921**
R/L 050.2-15	4		2,0	1,7	29	15	0,1	1,5	0,05	645.00..-D	38,79	**922**	38,79	**922**
R/L 050.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,10	645.00..-D	36,59	**931**	36,59	**931**
R/L 050.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,10	645.00..-D	38,14	**930**	38,14	**930**
R/L 050.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,10	645.00..-D	43,64	**932**	43,64	**932**
R/L 050.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,10	645.00..-D	36,59	**941**	36,59	**941**
R/L 050.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,10	645.00..-D	38,14	**940**	38,14	**940**
R/L 050.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,10	645.00..-D	41,98	**942**	41,98	**942**
R/L 050.4-24	4	1,5	4,0	3,5	38	24	0,3	3,0	0,10	645.00..-D	45,64	**945**	45,64	**945**
R/L 050.4-28	4	1,5	4,0	3,5	42	28	0,3	3,0	0,10	645.00..-D	49,60	**946**	49,60	**946**
R/L 050.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,15	645.00..-D	35,48	**951**	35,48	**951**
R/L 050.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,15	645.00..-D	37,14	**952**	37,14	**952**
R/L 050.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,15	645.00..-D	41,11	**950**	41,11	**950**
R/L 050.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	0,15	645.00..-D	45,19	**953**	45,19	**953**
R/L 050.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,15	645.00..-D	49,48	**954**	49,48	**954**
R/L 050.5-35	5	1,9	5,0	4,4	50	35	0,5	3,8	0,15	645.00..-D	53,68	**956**	53,68	**956**
R/L 050.6-15	6	2,3	6,0	5,3	30	15	0,5	4,5	0,15	676.00..-D	37,69	**961**	37,69	**961**
R/L 050.6-22	6	2,3	6,0	5,3	37	22	0,5	4,5	0,15	676.00..-D	41,66	**960**	41,66	**960**
R/L 050.6-25	6	2,3	6,0	5,3	40	25	0,5	4,5	0,15	676.00..-D	45,74	**962**	45,74	**962**
R/L 050.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	0,15	676.00..-D	50,03	**963**	50,03	**963**
R/L 050.6-35	6	2,3	6,0	5,3	50	35	0,5	4,5	0,15	676.00..-D	54,34	**964**	54,34	**964**
R/L 050.6-42	6	2,3	6,0	5,3	57	42	0,5	4,5	0,15	676.00..-D	59,19	**965**	59,19	**965**
R/L 050.7-20	7	2,8	6,8	6,3	35	20	0,6	5,5	0,15	676.00..-D	42,11	**972**	42,11	**972**
R/L 050.7-25	7	2,8	6,8	6,3	40	25	0,6	5,5	0,15	676.00..-D	46,40	**973**	46,40	**973**
R/L 050.7-30	7	2,8	6,8	6,3	45	30	0,6	5,5	0,15	676.00..-D	50,92	**974**	50,92	**974**
R/L 050.7-35	7	2,8	6,8	6,3	50	35	0,6	5,5	0,15	676.00..-D	55,21	**975**	55,21	**975**
R/L 050.7-40	7	2,8	6,8	6,3	55	40	0,6	5,5	0,15	676.00..-D	60,29	**976**	60,29	**976**
R/L 050.7-45	7	2,8	6,8	6,3	60	45	0,6	5,5	0,15	676.00..-D	63,16	**977**	63,16	**977**
R/L 050.7-50	7	2,8	6,8	6,3	65	50	0,6	5,5	0,15	676.00..-D	67,12	**978**	67,12	**978**

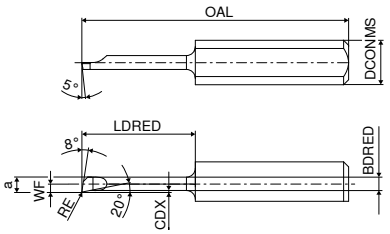
Steel		
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

→ v_c Page 60

UltraMini – Inserts for internal turning and profiling

▲ Specially designed for super alloys





DPX 57S DRAGONSKIN



DPX 57S DRAGONSKIN



Illustrations show right-hand versions

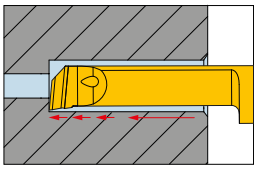
Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 027 ... EUR		Right-hand Y5 Article no. 73 026 ... EUR	
R/L M050.05-2	4	0,20	0,5	0,40	20	2	0,02	0,02	0,02	645.00..-D	37,59	**052**	37,59	**052**
R/L M050.08-4	4	0,35	0,8	0,70	20	4	0,08	0,03	0,02	645.00..-D	38,69	**082**	38,69	**082**
R/L M050.1-5	4	0,40	1,0	0,90	20	5	0,05	0,05	0,02	645.00..-D	35,71	**102**	35,71	**102**
R/L M050.1-7	4	0,40	1,0	0,90	22	7	0,05	0,05	0,02	645.00..-D	36,70	**103**	36,70	**103**
R/L M050.15-5	4	0,60	1,5	1,15	19	5	0,08	0,08	0,02	645.00..-D	35,71	**151**	35,71	**151**
R/L M050.15-10	4	0,60	1,5	1,15	24	10	0,08	0,08	0,02	645.00..-D	36,70	**154**	36,70	**154**
R/L M050.2-5	4	0,80	2,0	1,70	19	5	0,08	0,08	0,02	645.00..-D	30,31	**201**	30,31	**201**
R/L M050.2-10	4	0,80	2,0	1,70	24	10	0,08	0,08	0,02	645.00..-D	31,19	**204**	31,19	**204**
R/L M050.25-5	4	0,20	2,5	2,20	19	5	0,10	0,10	0,02	645.00..-D	30,31	**251**	30,31	**251**
R/L M050.25-10	4	0,20	2,5	2,20	24	10	0,10	0,10	0,02	645.00..-D	31,19	**254**	31,19	**254**
R/L M050.3-10	4	0,60	3,0	2,60	24	10	0,15	0,15	0,02	645.00..-D	30,31	**304**	30,31	**304**
R/L M050.3-16	4	0,60	3,0	2,60	30	16	0,15	0,15	0,02	645.00..-D	31,96	**307**	31,96	**307**
R/L M050.35-10	4	1,10	3,5	3,10	24	10	0,17	0,17	0,02	645.00..-D	30,31	**350**	30,31	**350**
R/L M050.35-16	4	1,10	3,5	3,10	30	16	0,17	0,17	0,02	645.00..-D	31,96	**353**	31,96	**353**
R/L M050.35-20	4	1,10	3,5	3,10	34	20	0,17	0,17	0,02	645.00..-D	38,36	**354**	38,36	**354**
R/L M050.4-10	4	1,50	4,0	3,50	24	10	0,20	0,20	0,02	645.00..-D	30,31	**400**	30,31	**400**
R/L M050.4-16	4	1,50	4,0	3,50	30	16	0,20	0,20	0,02	645.00..-D	31,96	**403**	31,96	**403**
R/L M050.4-20	4	1,50	4,0	3,50	34	20	0,20	0,20	0,02	645.00..-D	36,48	**404**	36,48	**404**
R/L M050.4-24	4	1,50	4,0	3,50	38	24	0,20	0,20	0,02	645.00..-D	40,66	**406**	40,66	**406**

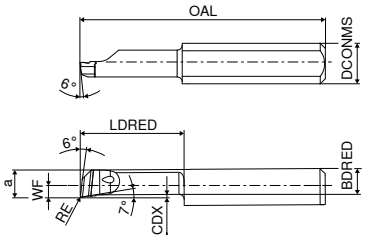
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

UltraMini – Inserts for internal turning

▲ with chip former





DPX77S DRAGONSKIN



DPX77S DRAGONSKIN



Illustrations show right-hand versions

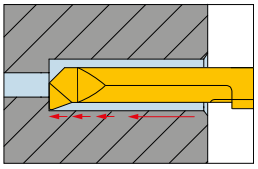
Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 001 ... EUR		Right-hand Y5 Article no. 73 000 ... EUR	
R/L X050.1-5	4		1,0	0,90	20	5	0,03	0,85	0,05	645.00..-D	33,83	**121**	33,83	**121**
R/L X050.15-7	4		1,5	1,35	22	7	0,05	1,25	0,10	645.00..-D	38,69	**233**	38,69	**233**
R/L X050.2-5	4		2,0	1,80	19	5	0,10	1,60	0,15	645.00..-D	29,43	**245**	29,43	**245**
R/L X050.2-10	4		2,0	1,80	24	10	0,10	1,60	0,05	645.00..-D	30,20	**215**	30,20	**215**
R/L X050.2-10	4		2,0	1,80	24	10	0,10	1,60	0,15	645.00..-D	30,20	**241**	30,20	**241**
R/L X050.3-10	4	0,7	3,0	2,70	24	10	0,15	2,55	0,05	645.00..-D	29,32	**341**	29,32	**341**
R/L X050.3-10	4	0,7	3,0	2,70	24	10	0,15	2,55	0,20	645.00..-D	29,32	**347**	29,32	**347**
R/L X050.3-16	4	0,7	3,0	2,70	30	16	0,15	2,55	0,05	645.00..-D	30,97	**371**	30,97	**371**
R/L X050.3-16	4	0,7	3,0	2,70	30	16	0,15	2,55	0,10	645.00..-D	30,97	**373**	30,97	**373**
R/L X050.3-16	4	0,7	3,0	2,70	30	16	0,15	2,55	0,20	645.00..-D	30,97	**377**	30,97	**377**
R/L X050.4-10	4	1,6	4,0	3,60	24	10	0,20	3,20	0,10	645.00..-D	29,32	**403**	29,32	**403**
R/L X050.4-10	4	1,6	4,0	3,60	24	10	0,20	3,20	0,20	645.00..-D	29,32	**407**	29,32	**407**
R/L X050.4-16	4	1,6	4,0	3,60	30	16	0,20	3,20	0,05	645.00..-D	30,97	**431**	30,97	**431**
R/L X050.4-16	4	1,6	4,0	3,60	30	16	0,20	3,20	0,10	645.00..-D	30,97	**433**	30,97	**433**
R/L X050.4-16	4	1,6	4,0	3,60	30	16	0,20	3,20	0,20	645.00..-D	30,97	**437**	30,97	**437**
R/L X050.4-24	4	1,6	4,0	3,60	38	24	0,20	3,20	0,10	645.00..-D	39,35	**463**	39,35	**463**
R/L X050.4-24	4	1,6	4,0	3,60	38	24	0,20	3,20	0,20	645.00..-D	39,35	**467**	39,35	**467**
R/L X050.5-15	5	2,1	5,0	4,60	30	15	0,30	4,05	0,05	645.00..-D	29,32	**511**	29,32	**511**
R/L X050.5-15	5	2,1	5,0	4,60	30	15	0,30	4,05	0,10	645.00..-D	29,32	**513**	29,32	**513**
R/L X050.5-15	5	2,1	5,0	4,60	30	15	0,30	4,05	0,20	645.00..-D	29,32	**517**	29,32	**517**
R/L X050.5-25	5	2,1	5,0	4,60	40	25	0,30	4,05	0,10	645.00..-D	38,24	**543**	38,24	**543**
R/L X050.5-25	5	2,1	5,0	4,60	40	25	0,30	4,05	0,20	645.00..-D	38,24	**547**	38,24	**547**
R/L X050.5-30	5	2,1	5,0	4,60	45	30	0,30	4,05	0,10	645.00..-D	43,20	**553**	43,20	**553**
R/L X050.5-30	5	2,1	5,0	4,60	45	30	0,30	4,05	0,20	645.00..-D	43,20	**557**	43,20	**557**
R/L X050.6-15	6	2,5	6,0	5,50	30	15	0,40	4,90	0,05	676.00..-D	29,32	**611**	29,32	**611**
R/L X050.6-15	6	2,5	6,0	5,50	30	15	0,40	4,90	0,10	676.00..-D	29,32	**613**	29,32	**613**
R/L X050.6-15	6	2,5	6,0	5,50	30	15	0,40	4,90	0,20	676.00..-D	29,32	**617**	29,32	**617**
R/L X050.6-22	6	2,5	6,0	5,50	37	22	0,40	4,90	0,20	676.00..-D	33,73	**637**	33,73	**637**
R/L X050.6-30	6	2,5	6,0	5,50	45	30	0,40	4,90	0,20	676.00..-D	43,20	**657**	43,20	**657**
R/L X050.6-35	6	2,5	6,0	5,50	50	35	0,40	4,90	0,20	676.00..-D	47,83	**667**	47,83	**667**
R/L X050.6-50	6	2,5	6,0	5,50	65	50	0,40	4,90	0,20	676.00..-D	59,52	**697**	59,52	**697**
R/L X050.7-25	7	3,0	7,0	6,50	40	25	0,50	5,90	0,20	676.00..-D	38,79	**747**	38,79	**747**
R/L X050.7-30	7	3,0	7,0	6,50	45	30	0,50	5,90	0,20	676.00..-D	43,75	**757**	43,75	**757**

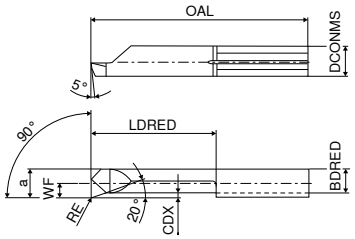
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 61

UltraMini – Inserts for internal turning







TiN



TiN



Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 015 ... EUR		Right-hand Y5 Article no. 73 014 ... EUR	
R/L 090.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,2	645.00..-D	26,12	**541**	26,12	**541**
R/L 090.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,2	645.00..-D	27,66	**542**	27,66	**542**
R/L 090.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,2	645.00..-D	26,12	**545**	26,12	**545**
R/L 090.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,2	645.00..-D	27,66	**546**	27,66	**546**
R/L 090.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,2	645.00..-D	26,12	**550**	26,12	**550**
R/L 090.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,2	645.00..-D	27,66	**551**	27,66	**551**
R/L 090.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,2	645.00..-D	30,20	**552**	30,20	**552**

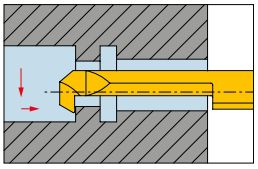
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

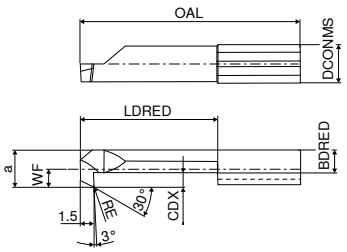
→ v_c Page 60

12

UltraMini – Inserts for back boring











TiN

TiN

Illustrations show right-hand versions

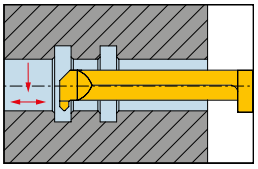
Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 013 ... EUR		Right-hand Y5 Article no. 73 012 ... EUR	
R/L 080.0003-15	4	0,6	3	2,6	29	15	0,5	2,0	0,10	645.00..-D	29,98	**542**	29,98	**542**
R/L 080.0003-20	4	0,6	3	2,6	34	20	0,5	2,0	0,10	645.00..-D	35,71	**544**	35,71	**544**
R/L 080.0004-15	4	1,5	4	3,5	29	15	0,8	2,4	0,15	645.00..-D	29,98	**546**	29,98	**546**
R/L 080.0004-25	4	1,5	4	3,5	39	25	0,8	2,4	0,15	645.00..-D	34,28	**548**	34,28	**548**
R/L 080.0005-20	5	1,9	5	4,4	35	20	1,0	3,3	0,20	645.00..-D	30,75	**554**	30,75	**554**
R/L 080.0005-30	5	1,9	5	4,4	45	30	1,0	3,3	0,20	645.00..-D	31,86	**558**	31,86	**558**
R/L 080.0006-20	6	2,3	6	5,3	35	20	1,8	3,4	0,20	676.00..-D	31,96	**564**	31,96	**564**
R/L 080.0006-30	6	2,3	6	5,3	45	30	1,8	3,4	0,20	676.00..-D	38,36	**568**	38,36	**568**
R/L 080.0007-20	7	2,7	7	6,3	35	20	2,5	3,8	0,20	676.00..-D	31,96	**574**	31,96	**574**
R/L 080.0007-30	7	2,7	7	6,3	45	30	2,5	3,8	0,20	676.00..-D	38,36	**578**	38,36	**578**

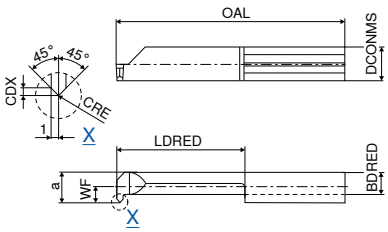
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

→ v_c Page 60

UltraMini – Inserts for internal turning and chamfering







TiN



TiN



Illustrations show right-hand versions

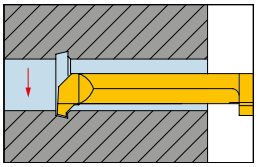
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CRE	Standard tool holder	Left-hand Y5 Article no. 73 007 ...		Right-hand Y5 Article no. 73 006 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
R/L 060.5-15	5	1,9	5,0	4,4	30	15	0,7	3,3	0,2	645.00..-D	26,88	**551**	26,88	**551**
R/L 060.5-20	5	1,9	5,0	4,4	35	20	0,7	3,3	0,2	645.00..-D	28,43	**550**	28,43	**550**
R/L 060.7-20	7	2,7	6,8	6,3	35	20	0,7	3,8	0,2	676.00..-D	31,52	**570**	31,52	**570**

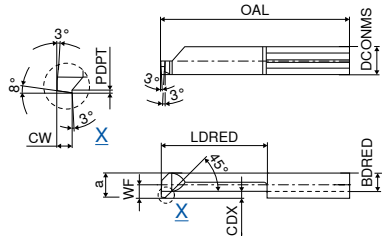
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

→ v_c Page 60

UltraMini – Inserts for internal chamfering for subsequent parting off







TiN



TiN



Illustrations show right-hand versions

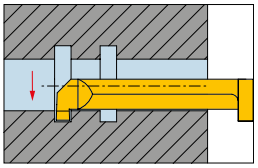
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	PDPT	Standard tool holder	Left-hand Y5 Article no. 73 009 ...		Right-hand Y5 Article no. 73 008 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
R/L 070.4-10	4	1,5	4	3,5	25	10	0,8	2,4	1	0,2	645.00..-D	26,68	**410**	26,68	**410**
R/L 070.4-16	4	1,5	4	3,5	30	16	0,8	2,4	1	0,2	645.00..-D	27,44	**416**	27,44	**416**
R/L 070.5-15	5	1,9	5	4,4	30	15	1,0	3,3	1	0,2	645.00..-D	27,01	**551**	27,01	**551**
R/L 070.5-20	5	1,9	5	4,4	35	20	1,0	3,3	1	0,2	645.00..-D	29,54	**550**	29,54	**550**
R/L 070.5-30	5	1,9	5	4,4	45	30	1,0	3,3	1	0,2	645.00..-D	37,14	**530**	37,14	**530**
R/L 070.6-30	6	2,3	6	5,3	45	30	1,0	4,2	1	0,2	676.00..-D	37,14	**630**	37,14	**630**
R/L 070.6-42	6	2,3	6	5,3	57	42	1,0	4,2	1	0,2	676.00..-D	43,43	**642**	43,43	**642**

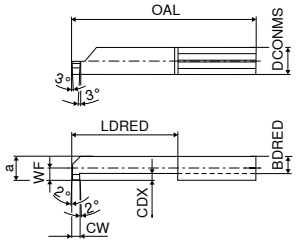
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

→ v_c Page 60

UltraMini – Inserts for Internal Grooving







TiN





TiN





Illustrations show right-hand versions

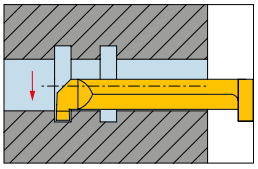
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	Standard tool holder	Left-hand Y5 Article no. 73 003 ... EUR		Right-hand Y5 Article no. 73 002 ... EUR		Left-hand Y5 Article no. 73 003 ... EUR		Right-hand Y5 Article no. 73 002 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	mm									
R/L 004.0100-10	4	1,5	4,0	3,5	24	10	0,8	2,4	1,0	645.00..-D	20,73	040	20,73	040	25,68	540	25,68	540
R/L 004.0100-16	4	1,5	4,0	3,5	30	16	0,8	2,4	1,0	645.00..-D	24,58	041	24,58	041	29,54	541	29,54	541
R/L 004.0100-20	4	1,5	4,0	3,5	34	20	0,8	2,4	1,0	645.00..-D	28,00	042	28,00	042	33,40	542	33,40	542
R/L 005.0100-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,0	645.00..-D	20,83	150	20,83	150	25,36	650	25,36	650
R/L 005.0150-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,5	645.00..-D	20,83	154	20,83	154	25,36	654	25,36	654
R/L 005.0200-10	5	1,9	5,0	4,4	25	10	1,0	3,3	2,0	645.00..-D	20,83	158	20,83	158	25,36	658	25,36	658
R/L 005.0100-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,0	645.00..-D	24,80	151	24,80	151	29,20	651	29,20	651
R/L 005.0150-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,5	645.00..-D	24,80	155	24,80	155	29,20	655	29,20	655
R/L 005.0200-15	5	1,9	5,0	4,4	30	15	1,0	3,3	2,0	645.00..-D	24,80	159	24,80	159	29,20	659	29,20	659
R/L 005.0100-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,0	645.00..-D	28,43	051	28,43	051	32,96	551	32,96	551
R/L 005.0150-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,5	645.00..-D	28,43	052	28,43	052	33,51	552	33,51	552
R/L 005.0200-20	5	1,9	5,0	4,4	35	20	1,0	3,3	2,0	645.00..-D	28,43	053	28,43	053	32,96	553	32,96	553
R/L 005.0100-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,0	645.00..-D	31,52	152	31,52	152	36,04	652	36,04	652
R/L 005.0150-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,5	645.00..-D	31,52	156	31,52	156	36,04	656	36,04	656
R/L 005.0200-25	5	1,9	5,0	4,4	40	25	1,0	3,3	2,0	645.00..-D	31,52	250	31,52	250	36,38	750	36,38	750
R/L 005.0100-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,0	645.00..-D	35,60	153	35,60	153	40,11	653	40,11	653
R/L 005.0150-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,5	645.00..-D	35,60	157	35,60	157	40,11	657	40,11	657
R/L 005.0200-30	5	1,9	5,0	4,4	45	30	1,0	3,3	2,0	645.00..-D	35,60	251	35,60	251	40,23	751	40,23	751
R/L 005.0100-35	5	1,9	5,0	4,4	50	35	1,0	3,3	1,0	645.00..-D					41,98	680	41,98	680
R/L 006.0100-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,0	676.00..-D	21,05	160	21,05	160	25,46	660	25,46	660
R/L 006.0150-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,5	676.00..-D	21,05	164	21,05	164	25,46	664	25,46	664
R/L 006.0200-10	6	2,3	6,0	5,3	25	10	1,8	3,4	2,0	676.00..-D	21,05	168	21,05	168	25,46	668	25,46	668
R/L 006.0100-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,0	676.00..-D	25,13	161	25,13	161	29,43	661	29,43	661
R/L 006.0150-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,5	676.00..-D	25,57	165	25,57	165	29,43	665	29,43	665
R/L 006.0200-15	6	2,3	6,0	5,3	30	15	1,8	3,4	2,0	676.00..-D	25,13	169	25,13	169	29,43	669	29,43	669
R/L 006.0100-22	6	2,3	6,0	5,3	37	22	1,8	3,4	1,0	676.00..-D	28,65	061	28,65	061	33,18	561	33,18	561
R/L 006.0150-22	6	2,3	6,0	5,3	37	22	1,8	3,4	1,5	676.00..-D	28,65	062	28,65	062	33,18	562	33,18	562
R/L 006.0200-22	6	2,3	6,0	5,3	37	22	1,8	3,4	2,0	676.00..-D	28,65	063	28,65	063	33,18	563	33,18	563
R/L 006.0100-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,0	676.00..-D	31,86	162	31,86	162	36,38	662	36,38	662
R/L 006.0150-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,5	676.00..-D	31,86	166	31,86	166	36,38	666	36,38	666
R/L 006.0200-25	6	2,3	6,0	5,3	40	25	1,8	3,4	2,0	676.00..-D	31,86	260	31,86	260	36,38	760	36,38	760
R/L 006.0100-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,0	676.00..-D	36,04	163	36,04	163	40,23	663	40,23	663
R/L 006.0150-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,5	676.00..-D	36,04	167	36,04	167	40,23	667	40,23	667
R/L 006.0200-30	6	2,3	6,0	5,3	45	30	1,8	3,4	2,0	676.00..-D	36,04	261	36,04	261	40,23	761	40,23	761
R/L 006.0100-35	6	2,3	6,0	5,3	50	35	1,8	3,4	1,0	676.00..-D					41,98	682	41,98	682
R/L 006.0150-35	6	2,3	6,0	5,3	50	35	1,8	3,4	1,5	676.00..-D					41,98	684	41,98	684
R/L 006.0100-42	6	2,3	6,0	5,3	57	42	1,8	3,4	1,0	676.00..-D					46,29	685	46,29	685
R/L 007.0100-10	7	2,7	6,8	6,3	25	10	2,5	3,8	1,0	676.00..-D	21,38	070	21,38	070	25,68	570	25,68	570
R/L 007.0150-10	7	2,7	6,8	6,3	25	10	2,5	3,8	1,5	676.00..-D	21,38	075	21,38	075	25,68	575	25,68	575
R/L 007.0200-10	7	2,7	6,8	6,3	25	10	2,5	3,8	2,0	676.00..-D	21,38	170	21,38	170	25,68	670	25,68	670
R/L 007.0100-15	7	2,7	6,8	6,3	30	15	2,5	3,8	1,0	676.00..-D	25,36	071	25,36	071	29,75	571	29,75	571
R/L 007.0150-15	7	2,7	6,8	6,3	30	15	2,5	3,8	1,5	676.00..-D	25,36	076	25,36	076	29,75	576	29,75	576
R/L 007.0200-15	7	2,7	6,8	6,3	30	15	2,5	3,8	2,0	676.00..-D	25,36	171	25,36	171	29,75	671	29,75	671
R/L 007.0100-22	7	2,7	6,8	6,3	37	22	2,5	3,8	1,0	676.00..-D	28,98	072	28,98	072	33,40	572	33,40	572
R/L 007.0150-22	7	2,7	6,8	6,3	37	22	2,5	3,8	1,5	676.00..-D	28,98	077	28,98	077	33,40	577	33,40	577
R/L 007.0200-22	7	2,7	6,8	6,3	37	22	2,5	3,8	2,0	676.00..-D	28,98	172	28,98	172	33,40	672	33,40	672
R/L 007.0100-25	7	2,7	6,8	6,3	40	25	2,5	3,8	1,0	676.00..-D	32,07	073	32,07	073	36,81	573	36,81	573
R/L 007.0150-25	7	2,7	6,8	6,3	40	25	2,5	3,8	1,5	676.00..-D	32,07	078	32,07	078	36,81	578	36,81	578
R/L 007.0200-25	7	2,7	6,8	6,3	40	25	2,5	3,8	2,0	676.00..-D	32,07	173	32,07	173	36,81	673	36,81	673
R/L 007.0100-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,0	676.00..-D	36,81	074	36,81	074	41,11	574	41,11	574
R/L 007.0150-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,5	676.00..-D	36,81	079	36,81	079	41,11	579	41,11	579
R/L 007.0200-30	7	2,7	6,8	6,3	45	30	2,5	3,8	2,0	676.00..-D	36,93	174	36,93	174	41,11	674	41,11	674
R/L 007.0100-35	7	2,7	7,0	6,3	50	35	2,5	3,8	1,0	676.00..-D					42,33	688	42,33	688
R/L 007.0150-35	7	2,7	7,0	6,3	50	35	2,5	3,8	1,5	676.00..-D					42,33	690	42,33	690
R/L 007.0200-35	7	2,7	7,0	6,3	50	35	2,5	3,8	2,0	676.00..-D					42,33	692	42,33	692
R/L 007.0100-40	7	2,7	7,0	6,3	55	40	2,5	3,8	1,0	676.00..-D					47,16	700	47,16	700
R/L 007.0150-40	7	2,7	7,0	6,3	55	40	2,5	3,8	1,5	676.00..-D					47,16	702	47,16	702
R/L 007.0100-45	7	2,7	7,0	6,3	60	45	2,5	3,8	1,0	676.00..-D					51,03	712	51,03	712
R/L 007.0100-50	7	2,7	7,0	6,3	65	50	2,5	3,8	1,0	676.00..-D					54,66	714	54,66	714

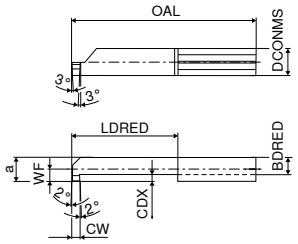
Steel	○	○	●	●
Stainless steel			●	●
Cast iron	○	○	○	○
Non ferrous metals	●	●	○	○
Heat resistant alloys			○	○
hardened materials				

→ v_c Page 60

UltraMini – Inserts for Internal Grooving







TiAlN



TiAlN



Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 003 ... EUR		Right-hand Y5 Article no. 73 002 ... EUR	
R/L 002.0050-5	4		2	1,8	19	5	0,4	1,2	0,5	645.00..-D	30,97	**820**	30,97	**820**
R/L 002.0050-10	4		2	1,8	24	10	0,4	1,2	0,5	645.00..-D	31,86	**821**	31,86	**821**
R/L 002.0050-15	4		2	1,8	29	15	0,4	1,2	0,5	645.00..-D	34,93	**822**	34,93	**822**
R/L 003.0070-5	4	0,7	3	2,7	19	5	0,6	1,9	0,7	645.00..-D	29,32	**830**	29,32	**830**
R/L 003.0070-10	4	0,7	3	2,7	24	10	0,6	1,9	0,7	645.00..-D	33,06	**831**	33,06	**831**
R/L 003.0070-16	4	0,7	3	2,7	30	16	0,6	1,9	0,7	645.00..-D	36,93	**832**	36,93	**832**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

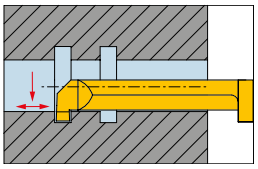
→ v_c Page 60

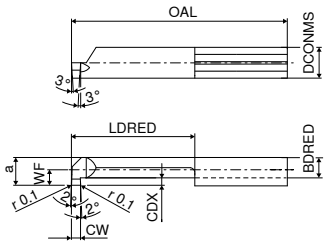
12

UltraMini – Inserts for Internal Grooving

▲ with corner radius







TiAlN



TiAlN



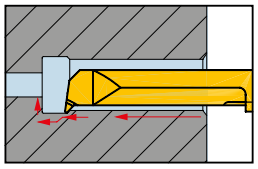
Illustrations show right-hand versions

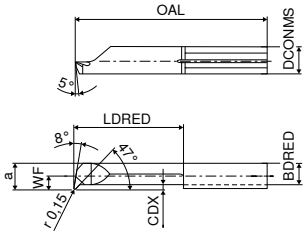
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	Standard tool holder	Left-hand Y5 Article no. 73 203 ...		Right-hand Y5 Article no. 73 202 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
R/L 004M0100-10	4	1,5	4,0	3,5	24	10	0,8	2,4	1,0	645.00..-D	28,55	800	28,55	800
R/L 004M0100-16	4	1,5	4,0	3,5	30	16	0,8	2,4	1,0	645.00..-D	32,84	802	32,84	802
R/L 004M0100-20	4	1,5	4,0	3,5	34	20	0,8	2,4	1,0	645.00..-D	36,04	804	36,04	804
R/L 005M0100-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,0	645.00..-D	27,11	806	27,11	806
R/L 005M0150-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,5	645.00..-D	27,11	816	27,11	816
R/L 005M0200-10	5	1,9	5,0	4,4	25	10	1,0	3,3	2,0	645.00..-D	27,11	826	27,11	826
R/L 005M0100-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,0	645.00..-D	31,09	808	31,09	808
R/L 005M0150-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,5	645.00..-D	31,09	818	31,09	818
R/L 005M0200-15	5	1,9	5,0	4,4	30	15	1,0	3,3	2,0	645.00..-D	31,09	828	31,09	828
R/L 005M0100-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,0	645.00..-D	34,61	810	34,61	810
R/L 005M0150-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,5	645.00..-D	34,61	820	34,61	820
R/L 005M0200-20	5	1,9	5,0	4,4	35	20	1,0	3,3	2,0	645.00..-D	34,61	830	34,61	830
R/L 005M0100-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,0	645.00..-D	37,69	812	37,69	812
R/L 005M0150-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,5	645.00..-D	37,69	822	37,69	822
R/L 005M0200-25	5	1,9	5,0	4,4	40	25	1,0	3,3	2,0	645.00..-D	37,69	832	37,69	832
R/L 005M0100-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,0	645.00..-D	41,77	814	41,77	814
R/L 005M0150-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,5	645.00..-D	41,77	824	41,77	824
R/L 005M0200-30	5	1,9	5,0	4,4	45	30	1,0	3,3	2,0	645.00..-D	41,77	834	41,77	834
R/L 006M0100-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,0	676.00..-D	27,11	836	27,11	836
R/L 006M0150-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,5	676.00..-D	27,11	846	27,11	846
R/L 006M0200-10	6	2,3	6,0	5,3	25	10	1,8	3,4	2,0	676.00..-D	27,11	856	27,11	856
R/L 006M0100-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,0	676.00..-D	31,09	838	31,09	838
R/L 006M0150-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,5	676.00..-D	31,09	848	31,09	848
R/L 006M0200-15	6	2,3	6,0	5,3	30	15	1,8	3,4	2,0	676.00..-D	31,09	858	31,09	858
R/L 006M0100-20	6	2,3	6,0	5,3	35	22	1,8	3,4	1,0	676.00..-D	34,61	840	34,61	840
R/L 006M0150-20	6	2,3	6,0	5,3	37	22	1,8	3,4	1,5	676.00..-D	34,61	850	34,61	850
R/L 006M0200-20	6	2,3	6,0	5,3	37	22	1,8	3,4	2,0	676.00..-D	34,61	860	34,61	860
R/L 006M0100-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,0	676.00..-D	37,69	842	37,69	842
R/L 006M0150-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,5	676.00..-D	37,69	852	37,69	852
R/L 006M0200-25	6	2,3	6,0	5,3	40	25	1,8	3,4	2,0	676.00..-D	37,69	862	37,69	862
R/L 006M0100-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,0	676.00..-D	41,77	844	41,77	844
R/L 006M0150-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,5	676.00..-D	41,77	854	41,77	854
R/L 006M0200-30	6	2,3	6,0	5,3	45	30	1,8	3,4	2,0	676.00..-D	41,77	864	41,77	864
R/L 007M0100-10	7	2,7	6,8	6,3	25	10	2,5	3,7	1,0	676.00..-D	27,11	866	27,11	866
R/L 007M0150-10	7	2,7	6,8	6,3	25	10	2,5	3,7	1,5	676.00..-D	27,11	876	27,11	876
R/L 007M0200-10	7	2,7	6,8	6,3	25	10	2,5	3,7	2,0	676.00..-D	27,11	886	27,11	886
R/L 007M0100-15	7	2,7	6,8	6,3	30	15	2,5	3,7	1,0	676.00..-D	31,09	868	31,09	868
R/L 007M0150-15	7	2,7	6,8	6,3	30	15	2,5	3,7	1,5	676.00..-D	31,09	878	31,09	878
R/L 007M0200-15	7	2,7	6,8	6,3	30	15	2,5	3,7	2,0	676.00..-D	31,09	888	31,09	888
R/L 007M0100-22	7	2,7	6,8	6,3	37	22	2,5	3,7	1,0	676.00..-D	34,61	870	34,61	870
R/L 007M0150-22	7	2,7	6,8	6,3	37	22	2,5	3,7	1,5	676.00..-D	34,61	880	34,61	880
R/L 007M0200-22	7	2,7	6,8	6,3	37	22	2,5	3,7	2,0	676.00..-D	34,61	890	34,61	890
R/L 007M0100-25	7	2,7	6,8	6,3	40	25	2,5	3,7	1,0	676.00..-D	37,69	872	37,69	872
R/L 007M0150-25	7	2,7	6,8	6,3	40	25	2,5	3,7	1,5	676.00..-D	37,69	882	37,69	882
R/L 007M0200-25	7	2,7	6,8	6,3	40	25	2,5	3,7	2,0	676.00..-D	37,69	892	37,69	892
R/L 007M0100-30	7	2,7	6,8	6,3	45	30	2,5	3,7	1,0	676.00..-D	42,11	874	42,11	874
R/L 007M0150-30	7	2,7	6,8	6,3	45	30	2,5	3,7	1,5	676.00..-D	42,11	884	42,11	884
R/L 007M0200-30	7	2,7	6,8	6,3	45	30	2,5	3,7	2,0	676.00..-D	42,11	894	42,11	894

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

UltraMini – Inserts for internal undercuts













Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	Standard tool holder	Left-hand Y5 Article no. 73 011 ... EUR		Right-hand Y5 Article no. 73 010 ... EUR		Left-hand Y5 Article no. 73 011 ... EUR		Right-hand Y5 Article no. 73 010 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm									
R/L 047.2-10	4		2,0	1,7	24	10	0,4	1,2	645.00..-D					28,55	**221**	28,55	**221**
R/L 047.3-15	4	0,6	2,8	2,6	29	15	0,6	1,9	645.00..-D					29,75	**231**	29,75	**231**
R/L 047.4-10	4	1,5	4,0	3,5	24	10	0,6	2,8	645.00..-D					27,23	**241**	27,23	**241**
R/L 047.T4-20	4	1,5	4,0	3,5	34	20	0,6	2,8	645.00..-D					31,96	**242**	31,96	**242**
R/L 047.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	645.00..-D	31,52	**542**	31,52	**542**				
R/L 047.5-15	5	1,9	5,0	4,4	30	15	0,8	3,5	645.00..-D					30,64	**251**	30,64	**251**
R/L 047.T5-25	5	1,9	5,0	4,4	40	25	0,8	3,5	645.00..-D					32,41	**252**	32,41	**252**
R/L 047.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	645.00..-D	32,07	**552**	32,07	**552**				
R/L 047.T6-22	6	2,3	6,0	5,3	37	22	1,8	3,4	676.00..-D					31,41	**262**	31,41	**262**
R/L 047.T6-30	6	2,3	6,0	5,3	45	30	1,8	3,4	676.00..-D					33,18	**263**	33,18	**263**
R/L 047.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	676.00..-D	32,84	**562**	32,84	**562**				

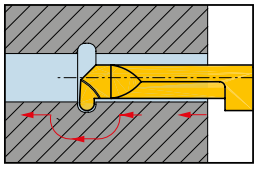
Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

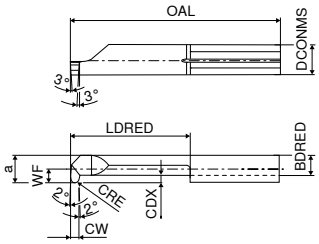
→ v_c Page 60

12

UltraMini – Inserts for internal grooving and turning







TiN



TiN



Illustrations show right-hand versions

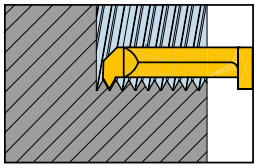
Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CW mm	CRE mm	Standard tool holder	Left-hand Y5 Article no. 73 019 ... EUR		Right-hand Y5 Article no. 73 018 ... EUR	
R/L 006-0.75-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,5	0,75	676.00..-D	33,06	**564**	33,06	**564**
R/L 006-0.50-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,0	0,50	676.00..-D	33,06	**562**	33,06	**562**
R/L 006-1.00-25	6	2,3	6,0	5,3	40	25	1,8	3,4	2,0	1,00	676.00..-D	33,06	**566**	33,06	**566**
R/L 005-1.00-20	5	1,9	5,0	4,4	35	20	1,0	3,3	2,0	1,00	645.00..-D	32,41	**556**	32,41	**556**
R/L 007-0.50-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,0	0,50	676.00..-D	34,28	**572**	34,28	**572**
R/L 005-0.75-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,5	0,75	645.00..-D	32,41	**554**	32,41	**554**
R/L 007-0.75-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,5	0,75	676.00..-D	34,28	**574**	34,28	**574**
R/L 005-0.50-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,0	0,50	645.00..-D	32,41	**552**	32,41	**552**
R/L 007-1.00-30	7	2,7	6,8	6,3	45	30	2,5	3,8	2,0	1,00	676.00..-D	34,28	**576**	34,28	**576**
R/L 004-0.50-16	4	1,5	4,0	3,5	30	16	0,8	2,4	1,0	0,50	645.00..-D	31,19	**541**	31,19	**541**

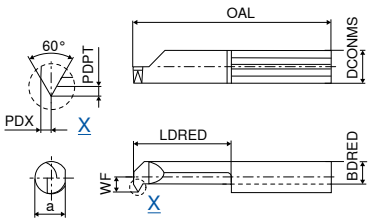
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

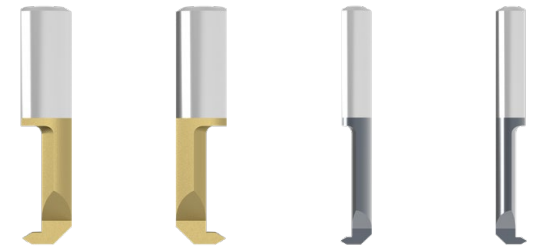
→ v_c Page 60

UltraMini – Inserts for internal threading (Partial profile)









Left-hand | Right-hand | Left-hand | Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX	Standard tool holder	Y5 Article no. 73 101 ...		Y5 Article no. 73 100 ...		Y5 Article no. 73 101 ...		Y5 Article no. 73 100 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
R/L 003.0105-8	4	0,50	0,30	2,4	2,3	22	8	1,8	0,27	0,33	645.00..-D					28,88	551	28,88	551
R/L 004.0408-15	4	0,80	1,75	4,0	3,5	30	15	2,4	0,43	0,45	645.00..-D					30,09	552	30,09	552
R/L 005.0510-15	5	1,00	1,90	4,8	4,4	30	15	3,3	0,55	0,55	645.00..-D	28,00	545	28,00	545				
R/L 005.0510-20	5	1,00	1,90	4,8	4,4	35	20	3,3	0,55	0,55	645.00..-D	28,22	544	28,22	544				
R/L 006.0612-15	6	1,25	2,30	6,0	5,3	30	15	3,4	0,68	0,65	676.00..-D	28,00	547	28,00	547				
R/L 006.0612-22	6	1,25	2,30	6,0	5,3	37	22	3,4	0,68	0,65	676.00..-D	28,65	546	28,65	546				
R/L 006.0815-15	6	1,50	2,30	6,0	5,3	30	15	3,4	0,81	0,75	676.00..-D	28,00	549	28,00	549				
R/L 006.0815-22	6	1,50	2,30	6,0	5,3	37	22	3,4	0,81	0,75	676.00..-D	28,65	548	28,65	548				
R/L 007.0815-15	7	1,50	2,70	7,0	6,3	30	15	3,8	0,81	0,75	676.00..-D	28,65	550	28,65	550				

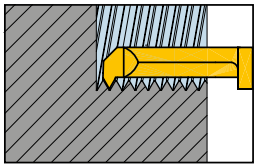
Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

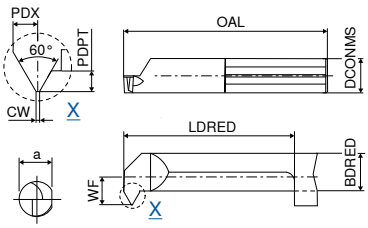
→ v_c Page 60

12

UltraMini – Inserts for Internal thread turning (Full profile)







TiAlN



Left-hand

TiAlN



Right-hand

Illustrations show right-hand versions

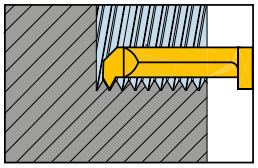
Designation	DCONMS $_{h6}$ mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	CW mm	Standard tool holder	Y5 Article no. 73 209 ... EUR		Y5 Article no. 73 208 ... EUR	
R/L 105.0408-15	5	0,80	1,9	4,8	4,4	30	15	3,3	0,43	0,50	0,10	645.00..-D	31,19	**799**	31,19	**799**
R/L 105.510-15	5	1,00	1,9	4,8	4,4	30	15	3,3	0,54	0,55	0,12	645.00..-D	31,86	**800**	31,86	**800**
R/L 106.612-15	6	1,25	2,3	6,0	5,3	30	15	3,4	0,67	0,65	0,15	676.00..-D	31,86	**802**	31,86	**802**
R/L 106.815-15	6	1,50	2,3	6,0	5,3	30	15	3,4	0,81	0,75	0,18	676.00..-D	31,86	**804**	31,86	**804**
R/L 106.815-15	7	1,50	2,7	7,0	6,3	30	15	3,8	0,81	0,75	0,18	676.00..-D	31,86	**806**	31,86	**806**

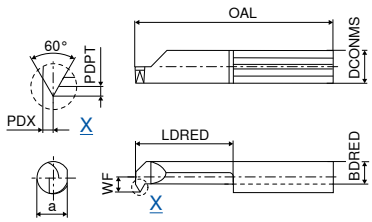
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

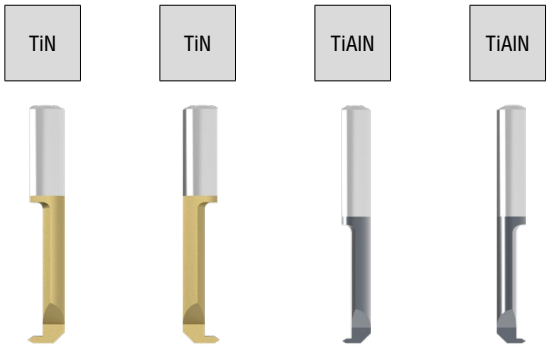
→ v_c Page 60

UltraMini – Inserts for internal thread turning (Partial profile)









Left-hand | Right-hand | Left-hand | Right-hand

Illustrations show right-hand versions

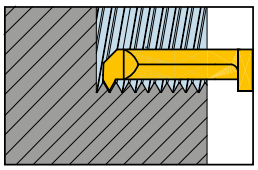
Designation	DCONMS h6	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX	Standard tool holder	Y5 Article no. 73 103 ...		Y5 Article no. 73 102 ...		Y5 Article no. 73 103 ...		Y5 Article no. 73 102 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
R/L 004.0105-10	4	0,50	1,0	3,2	3,0	24	10	2,3	0,27	0,44	645.00..-D					28,43	509	28,43	509
R/L 004.0205-15	4	0,50	1,5	4,0	3,5	30	15	2,4	0,27	0,35	645.00..-D	29,43	510	29,43	510				
R/L 005.0205-15	5	0,50	1,9	5,0	4,4	30	15	3,3	0,27	0,35	645.00..-D	28,22	539	28,22	539				
R/L 005.0205-20	5	0,50	1,9	5,0	4,4	35	20	3,3	0,27	0,35	645.00..-D	28,22	540	28,22	540				
R/L 005.0407-15	5	0,75	1,9	5,0	4,4	30	15	3,3	0,40	0,45	645.00..-D	28,22	541	28,22	541				
R/L 005.0407-20	5	0,75	1,9	5,0	4,4	35	20	3,3	0,40	0,45	645.00..-D	28,22	542	28,22	542				
R/L 006.0510-15	6	1,00	2,3	6,0	5,3	30	15	3,4	0,55	0,55	676.00..-D	28,22	543	28,22	543				
R/L 006.0510-22	6	1,00	2,3	6,0	5,3	37	22	3,4	0,55	0,55	676.00..-D	28,22	544	28,22	544				

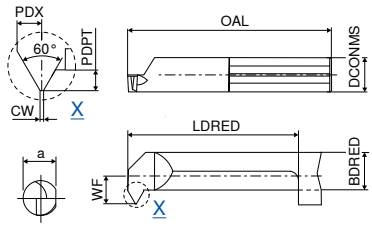
Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

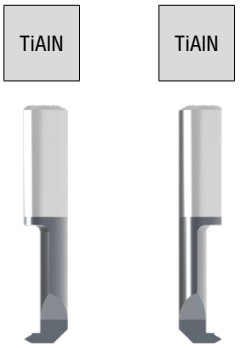
→ v_c Page 60

UltraMini – Inserts for Internal thread turning (Full profile)









Left-hand | Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX	CW	Standard tool holder	Y5 Article no. 73 207 ...		Y5 Article no. 73 206 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
R/L 104.0205-15	5	0,50	1,5	4	3,5	30	15	2,4	0,27	0,35	0,06	645.00..-D	33,51	800	33,51	800
R/L 105.0205-15	5	0,50	1,9	5	4,4	30	15	3,3	0,27	0,35	0,06	645.00..-D	31,96	802	31,96	802
R/L 105.0407-15	5	0,75	1,9	5	4,4	30	15	3,3	0,40	0,45	0,09	645.00..-D	31,96	804	31,96	804
R/L 106.0510-15	6	1,00	2,3	6	5,3	30	15	3,4	0,54	0,55	0,12	676.00..-D	31,96	806	31,96	806

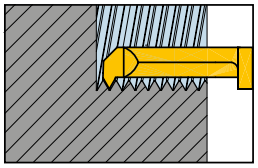
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

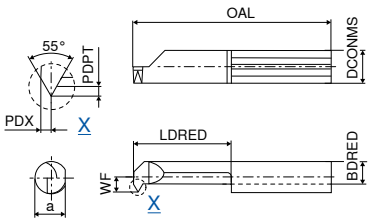
→ v_c Page 60

12

UltraMini – Inserts for internal thread turning (Partial profile)







TiN



Left-hand

TiN



Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6 mm	TPI 1/"	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	Standard tool holder	Y5 Article no. 73 105 ... EUR		Y5 Article no. 73 104 ... EUR	
R/L 005.5548-15	5	48 - 24	1,9	4,8	4,4	30	15	3,3	0,40	0,45	645.00..-D	30,75	**552**	30,75	**552**
R/L 006.5548-15	6	48 - 24	2,3	6,0	5,3	30	15	3,4	0,40	0,45	676.00..-D	30,75	**562**	30,75	**562**
R/L 006.5524-15	6	24 - 16	2,3	6,0	5,3	30	15	3,4	0,81	0,75	676.00..-D	30,75	**563**	30,75	**563**
R/L 007.5524-15	7	24 - 16	2,7	7,0	6,3	30	15	3,8	0,81	0,75	676.00..-D	30,75	**572**	30,75	**572**

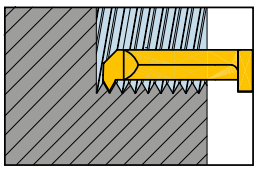
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

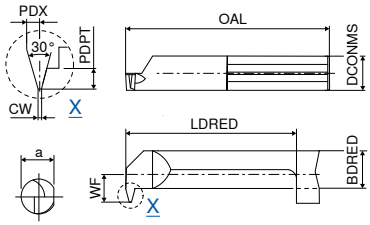
→ v_c Page 60

UltraMini – Inserts for internal thread turning (Partial profile)

▲ Trapezoidal thread DIN 103







TiAlN



Left-hand

TiAlN



Right-hand

Illustrations show right-hand versions

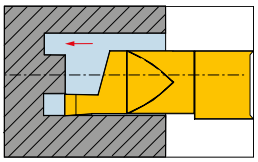
Designation	DCONMS h6 mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	CW mm	Standard tool holder	Y5 Article no. 73 211 ... EUR		Y5 Article no. 73 210 ... EUR	
R/L 007.1220-22	7	2	2,8	7	6,3	37	22	3,8	1,25	0,75	0,6	676.00..-D	39,01	**222**	39,01	**222**
R/L 007.1220-30	7	2	2,8	7	6,3	45	30	3,8	1,25	0,75	0,6	676.00..-D	47,16	**230**	47,16	**230**
R/L 007.1730-22	7	3	2,8	7	6,3	37	22	3,8	1,75	1,10	1,0	676.00..-D	39,01	**322**	39,01	**322**
R/L 007.1730-30	7	3	2,8	7	6,3	45	30	3,8	1,75	1,10	1,0	676.00..-D	47,16	**330**	47,16	**330**

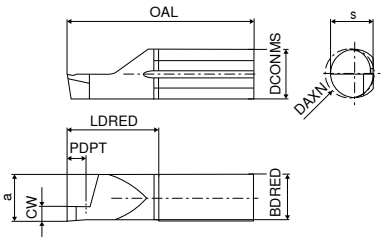
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

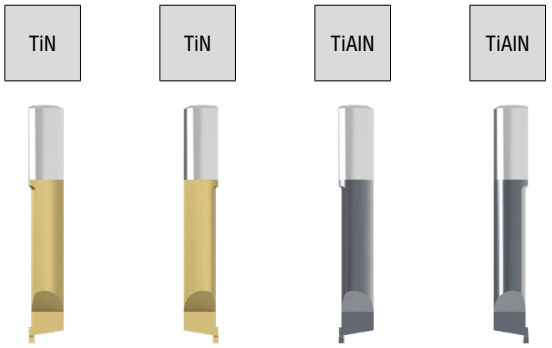
→ v_c Page 60

UltraMini – Inserts for axial grooving









Illustrations show right-hand versions

Designation	DCONMS h6	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	Standard tool holder	Left-hand Y5 Article no. 73 051 ...		Right-hand Y5 Article no. 73 050 ...		Left-hand Y5 Article no. 73 053 ...		Right-hand Y5 Article no. 73 052 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
R/L 010.1006-10	6	5,2	6	5,3	26	11	1,5	4,9	1,0	676.00..-D	31,30	**561**	31,30	**561**	31,30	**561**	31,30	**561**
R/L 010.1506-10	6	5,2	6	5,3	26	11	2,0	4,9	1,5	676.00..-D	31,30	**563**	31,30	**563**	31,30	**563**	31,30	**563**
R/L 010.1008-10	7	5,9	8	6,3	26	11	1,5	5,6	1,0	676.00..-D	32,07	**571**	32,07	**571**	32,07	**571**	32,07	**571**
R/L 010.1008-20	7	5,9	8	6,3	35	20	1,5	5,6	1,0	676.00..-D	34,28	**671**	34,28	**671**	34,28	**671**	34,28	**671**
R/L 010.1008-30	7	5,9	8	6,3	45	30	1,5	5,6	1,0	676.00..-D	36,04	**771**	36,04	**771**	36,04	**771**	36,04	**771**
R/L 010.1508-10	7	5,9	8	6,3	26	11	2,5	5,6	1,5	676.00..-D	32,07	**573**	32,07	**573**	32,07	**573**	32,07	**573**
R/L 010.1508-20	7	5,9	8	6,3	35	20	2,5	5,6	1,5	676.00..-D	34,28	**673**	34,28	**673**	34,28	**673**	34,28	**673**
R/L 010.1508-30	7	5,9	8	6,3	45	30	2,5	5,6	1,5	676.00..-D	36,04	**773**	36,04	**773**	36,04	**773**	36,04	**773**
R/L 010.2008-10	7	5,9	8	6,3	26	11	3,0	5,6	2,0	676.00..-D	32,07	**575**	32,07	**575**	32,07	**575**	32,07	**575**
R/L 010.2008-20	7	5,9	8	6,3	35	20	3,0	5,6	2,0	676.00..-D	34,28	**675**	34,28	**675**	34,28	**675**	34,28	**675**
R/L 010.2008-30	7	5,9	8	6,3	45	30	3,0	5,6	2,0	676.00..-D	36,04	**775**	36,04	**775**	36,04	**775**	36,04	**775**
R/L 010.2508-10	7	5,9	8	6,3	26	11	3,5	5,6	2,5	676.00..-D	32,07	**577**	32,07	**577**	32,07	**577**	32,07	**577**
R/L 010.2508-20	7	5,9	8	6,3	35	20	3,5	5,6	2,5	676.00..-D	34,28	**677**	34,28	**677**	34,28	**677**	34,28	**677**
R/L 010.2508-30	7	5,9	8	6,3	45	30	3,5	5,6	2,5	676.00..-D	36,04	**777**	36,04	**777**	36,04	**777**	36,04	**777**
R/L 010.3008-10	7	5,9	8	6,3	26	11	3,5	5,6	3,0	676.00..-D	32,07	**579**	32,07	**579**	32,07	**579**	32,07	**579**
R/L 010.3008-20	7	5,9	8	6,3	35	20	3,5	5,6	3,0	676.00..-D	34,28	**679**	34,28	**679**	34,28	**679**	34,28	**679**
R/L 010.3008-30	7	5,9	8	6,3	45	30	3,5	5,6	3,0	676.00..-D	36,04	**779**	36,04	**779**	36,04	**779**	36,04	**779**

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

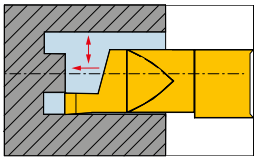
→ v_c Page 60

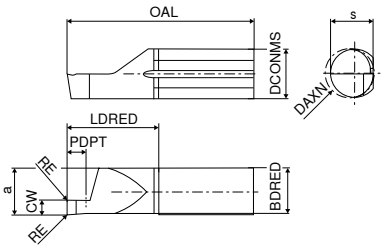
12

UltraMini – Inserts for axial grooving

▲ with corner radius







TiAlN



TiAlN



Illustrations show right-hand versions

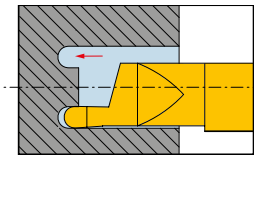
Designation	DCONMS h6	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	RE	Standard tool holder	Left-hand Y5 Article no. 73 253 ... EUR		Right-hand Y5 Article no. 73 252 ... EUR	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm					
R/L 510M1008-10	5	4,3	5	6,3	26	11	2	4,0	1,0	0,05	645.00..-D	37,03	**510**	37,03	**510**
R/L 510M1008-20	5	4,3	5	6,3	35	20	2	4,0	1,0	0,05	645.00..-D	39,12	**610**	39,12	**610**
R/L 510M1508-10	5	4,3	5	6,3	26	11	3	4,0	1,5	0,05	645.00..-D	37,03	**515**	37,03	**515**
R/L 510M1508-20	5	4,3	5	6,3	35	20	3	4,0	1,5	0,05	645.00..-D	39,12	**615**	39,12	**615**
R/L 510M2008-10	5	4,3	5	6,3	26	11	4	4,0	2,0	0,05	645.00..-D	37,03	**520**	37,03	**520**
R/L 510M2008-20	5	4,3	5	6,3	35	20	4	4,0	2,0	0,05	645.00..-D	39,12	**620**	39,12	**620**
R/L 010M1008-10	7	5,9	8	6,3	26	11	2	5,6	1,0	0,10	676.00..-D	37,91	**800**	37,91	**800**
R/L 010M1008-20	7	5,9	8	6,3	35	20	2	5,6	1,0	0,10	676.00..-D	40,01	**810**	40,01	**810**
R/L 010M1008-30	7	5,9	8	6,3	45	30	2	5,6	1,0	0,10	676.00..-D	41,88	**820**	41,88	**820**
R/L 010M1508-10	7	5,9	8	6,3	26	11	3	5,6	1,5	0,10	676.00..-D	37,91	**802**	37,91	**802**
R/L 010M1508-20	7	5,9	8	6,3	35	20	3	5,6	1,5	0,10	676.00..-D	40,01	**812**	40,01	**812**
R/L 010M1508-30	7	5,9	8	6,3	45	30	3	5,6	1,5	0,10	676.00..-D	41,88	**822**	41,88	**822**
R/L 010M2008-10	7	5,9	8	6,3	26	11	4	5,6	2,0	0,10	676.00..-D	37,91	**804**	37,91	**804**
R/L 010M2008-20	7	5,9	8	6,3	35	20	4	5,6	2,0	0,10	676.00..-D	40,01	**814**	40,01	**814**
R/L 010M2008-30	7	5,9	8	6,3	45	30	4	5,6	2,0	0,10	676.00..-D	41,88	**824**	41,88	**824**
R/L 010M2508-10	7	5,9	8	6,3	26	11	5	5,6	2,5	0,10	676.00..-D	37,91	**806**	37,91	**806**
R/L 010M2508-20	7	5,9	8	6,3	35	20	5	5,6	2,5	0,10	676.00..-D	40,01	**816**	40,01	**816**
R/L 010M2508-30	7	5,9	8	6,3	45	30	5	5,6	2,5	0,10	676.00..-D	41,88	**826**	41,88	**826**
R/L 010M3008-10	7	5,9	8	6,3	26	11	6	5,6	3,0	0,10	676.00..-D	37,91	**808**	37,91	**808**
R/L 010M3008-20	7	5,9	8	6,3	35	20	6	5,6	3,0	0,10	676.00..-D	40,01	**818**	40,01	**818**
R/L 010M3008-30	7	5,9	8	6,3	45	30	6	5,6	3,0	0,10	676.00..-D	41,88	**828**	41,88	**828**

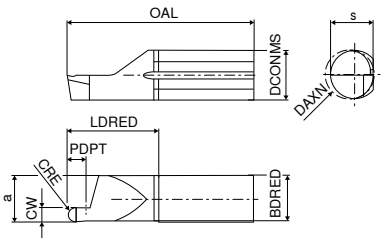
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

UltraMini – Inserts for axial grooving (Full radius)







TiAlN



TiAlN



Illustrations show right-hand versions

Designation	DCONMS h6	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	CRE	Standard tool holder	Left-hand Y5 Article no. 73 059 ...		Right-hand Y5 Article no. 73 058 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
R/L 610.1005-10	6	5,2	6	5,3	26	11	2	4,9	1,0	0,50	676.00..-D	37,69	**071**	37,69	**071**
R/L 610.1005-20	6	5,2	6	5,3	35	20	2	4,9	1,0	0,50	676.00..-D	39,90	**171**	39,90	**171**
R/L 610.1608-10	6	5,2	6	5,3	26	11	3	4,9	1,6	0,80	676.00..-D	37,69	**073**	37,69	**073**
R/L 610.1608-20	6	5,2	6	5,3	35	20	3	4,9	1,6	0,80	676.00..-D	39,90	**173**	39,90	**173**
R/L 610.2010-10	6	5,2	6	5,3	26	11	4	4,9	2,0	1,00	676.00..-D	37,69	**075**	37,69	**075**
R/L 610.2010-20	6	5,2	6	5,3	35	20	4	4,9	2,0	1,00	676.00..-D	39,90	**175**	39,90	**175**
R/L 610.2512-10	6	5,2	6	5,3	26	11	5	4,9	2,5	1,25	676.00..-D	37,69	**077**	37,69	**077**
R/L 610.2512-20	6	5,2	6	5,3	35	20	5	4,9	2,5	1,25	676.00..-D	39,90	**177**	39,90	**177**
R/L 610.3015-10	6	5,2	6	5,3	26	11	6	4,9	3,0	1,50	676.00..-D	37,69	**079**	37,69	**079**
R/L 610.3015-20	6	5,2	6	5,3	35	20	6	4,9	3,0	1,50	676.00..-D	39,90	**179**	39,90	**179**
R/L 010.1005-10	7	5,9	8	6,3	26	11	2	5,6	1,0	0,50	676.00..-D	36,93	**571**	36,93	**571**
R/L 010.1005-20	7	5,9	8	6,3	35	20	2	5,6	1,0	0,50	676.00..-D	39,01	**671**	39,01	**671**
R/L 010.1608-10	7	5,9	8	6,3	26	11	3	5,6	1,6	0,80	676.00..-D	36,93	**573**	36,93	**573**
R/L 010.1608-20	7	5,9	8	6,3	35	20	3	5,6	1,6	0,80	676.00..-D	39,01	**673**	39,01	**673**
R/L 010.2010-10	7	5,9	8	6,3	26	11	4	5,6	2,0	1,00	676.00..-D	36,93	**575**	36,93	**575**
R/L 010.2010-20	7	5,9	8	6,3	35	20	4	5,6	2,0	1,00	676.00..-D	39,01	**675**	39,01	**675**
R/L 010.2512-10	7	5,9	8	6,3	26	11	5	5,6	2,5	1,25	676.00..-D	36,93	**577**	36,93	**577**
R/L 010.2512-20	7	5,9	8	6,3	35	20	5	5,6	2,5	1,25	676.00..-D	39,01	**677**	39,01	**677**
R/L 010.3015-10	7	5,9	8	6,3	26	11	6	5,6	3,0	1,50	676.00..-D	36,93	**579**	36,93	**579**
R/L 010.3015-20	7	5,9	8	6,3	35	20	6	5,6	3,0	1,50	676.00..-D	39,01	**679**	39,01	**679**

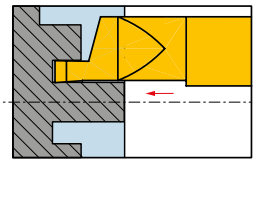
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

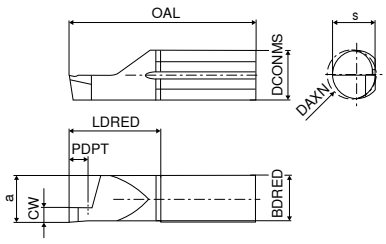
→ v_c Page 60

12

UltraMini – Inserts for axial grooving over a spigot







TiAlN



TiAlN



Illustrations show right-hand versions

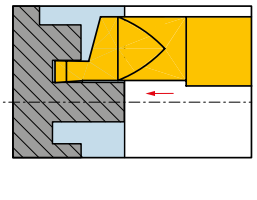
Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 061 ... EUR		Right-hand Y5 Article no. 73 060 ... EUR	
R/L 620.1006-20	6	5,2	6	5,3	35	20	2	4,9	1,0	676.00..-D	39,01	561	39,01	561
R/L 620.1506-20	6	5,2	6	5,3	35	20	3	4,9	1,5	676.00..-D	39,01	563	39,01	563
R/L 620.2006-20	6	5,2	6	5,3	35	20	4	4,9	2,0	676.00..-D	39,01	565	39,01	565
R/L 620.2506-20	6	5,2	6	5,3	35	20	5	4,9	2,5	676.00..-D	39,01	567	39,01	567
R/L 620.3006-20	6	5,2	6	5,3	35	20	6	4,9	3,0	676.00..-D	39,01	569	39,01	569
Steel											●		●	
Stainless steel											●		●	
Cast iron											●		●	
Non ferrous metals											●		●	
Heat resistant alloys											●		●	
hardened materials														

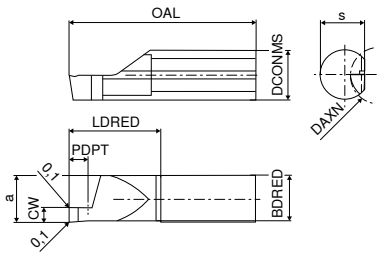
→ v_c Page 60

UltraMini – Inserts for axial grooving over a spigot

▲ with corner radius







TiAlN



TiAlN



Illustrations show right-hand versions

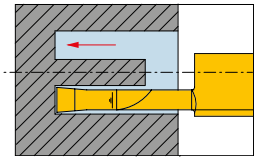
Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 261 ... EUR		Right-hand Y5 Article no. 73 260 ... EUR	
R/L 620M1006-20	6	5,2	6	5,3	35	20	2	4,9	1,0	676.00..-D	40,46	800	40,46	800
R/L 620M1506-20	6	5,2	6	5,3	35	20	3	4,9	1,5	676.00..-D	40,46	802	40,46	802
R/L 620M2006-20	6	5,2	6	5,3	35	20	4	4,9	2,0	676.00..-D	40,46	804	40,46	804
R/L 620M2506-20	6	5,2	6	5,3	35	20	5	4,9	2,5	676.00..-D	40,46	806	40,46	806
R/L 620M3006-20	6	5,2	6	5,3	35	20	6	4,9	3,0	676.00..-D	40,46	808	40,46	808
Steel											●		●	
Stainless steel											●		●	
Cast iron											●		●	
Non ferrous metals											●		●	
Heat resistant alloys											●		●	
hardened materials														

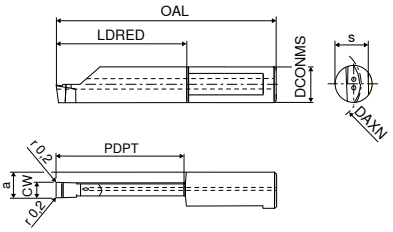
→ v_c Page 60

UltraMini – Inserts for axial grooving

- up to 100 bar
- dual cooling channel







TiAlN



TiAlN



Illustrations show right-hand versions

Designation	DCONMS $_{h6}$ mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 263 ... EUR		Right-hand Y5 Article no. 73 262 ... EUR	
R/L 012.0200-10	8	5,00	12	7,3	30	10	10	2,0	687.00..-D	52,02	**700**	52,02	**700**
R/L 012.0200-15	8	5,00	12	7,3	35	15	15	2,0	687.00..-D	52,69	**702**	52,69	**702**
R/L 012.0250-10	8	5,25	12	7,3	30	10	10	2,5	687.00..-D	52,02	**704**	52,02	**704**
R/L 012.0250-20	8	5,25	12	7,3	40	20	20	2,5	687.00..-D	53,34	**706**	53,34	**706**
R/L 016.0300-10	8	5,50	16	7,3	30	10	10	3,0	687.00..-D	53,01	**800**	53,01	**800**
R/L 016.0300-20	8	5,50	16	7,3	40	20	20	3,0	687.00..-D	54,44	**802**	54,44	**802**
R/L 020.0300-25	8	5,50	20	7,3	45	25	25	3,0	687.00..-D	55,11	**804**	55,11	**804**
R/L 020.0300-30	8	5,50	20	7,3	50	30	30	3,0	687.00..-D	55,11	**806**	55,11	**806**
R/L 020.0300-35	8	5,50	20	7,3	55	35	35	3,0	687.00..-D	56,53	**808**	56,53	**808**
R/L 020.0300-40	8	5,50	20	7,3	60	40	40	3,0	687.00..-D	56,53	**810**	56,53	**810**
R/L 016.0400-10	8	6,00	16	7,3	30	10	10	4,0	687.00..-D	53,01	**812**	53,01	**812**
R/L 016.0400-20	8	6,00	16	7,3	40	20	20	4,0	687.00..-D	54,44	**814**	54,44	**814**
R/L 020.0400-25	8	6,00	20	7,3	45	25	25	4,0	687.00..-D	55,11	**816**	55,11	**816**
R/L 020.0400-30	8	6,00	20	7,3	50	30	30	4,0	687.00..-D	55,11	**818**	55,11	**818**
R/L 020.0400-35	8	6,00	20	7,3	55	35	35	4,0	687.00..-D	56,53	**820**	56,53	**820**
R/L 020.0400-40	8	6,00	20	7,3	60	40	40	4,0	687.00..-D	56,53	**822**	56,53	**822**
R/L 020.0500.20	8	6,50	20	7,3	40	20	20	5,0	687.00..-D	53,01	**824**	53,01	**824**
R/L 020.0500.25	8	6,50	20	7,3	45	25	25	5,0	687.00..-D	53,79	**826**	53,79	**826**
R/L 020.0500.30	8	6,50	20	7,3	50	30	30	5,0	687.00..-D	53,79	**828**	53,79	**828**
R/L 020.0500.35	8	6,50	20	7,3	55	35	35	5,0	687.00..-D	55,11	**830**	55,11	**830**
R/L 020.0500.40	8	6,50	20	7,3	60	40	40	5,0	687.00..-D	55,11	**832**	55,11	**832**

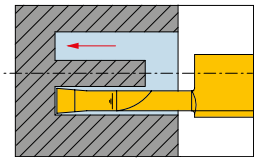
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

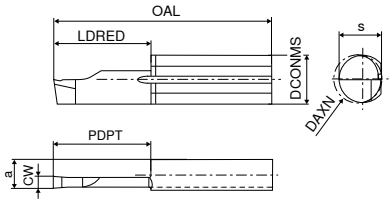
12

→ v_c Page 60

UltraMini – Inserts for axial grooving







TiN | TiN | TiAlN | TiAlN



Illustrations show right-hand versions

Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 055 ... EUR		Right-hand Y5 Article no. 73 054 ... EUR		Left-hand Y5 Article no. 73 057 ... EUR		Right-hand Y5 Article no. 73 056 ... EUR	
R/L 015.2515-20	7	5,9	15	6,3	35	20	20	2,5	676.00..-D	43,09	**572**	43,09	**572**	43,09	**572**	43,09	**572**
R/L 015.3015-20	7	5,9	15	6,3	35	20	20	3,0	676.00..-D	43,09	**574**	43,09	**574**	43,09	**574**	43,09	**574**
R/L 015.3015-30	7	5,9	15	6,3	45	30	30	3,0	676.00..-D	47,29	**674**	47,29	**674**	47,29	**674**	47,29	**674**

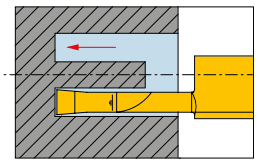
Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

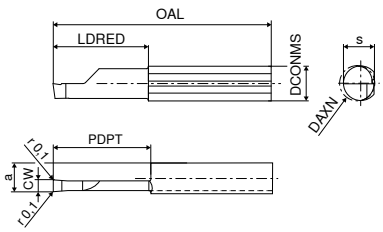
→ v_c Page 60

UltraMini – Inserts for axial grooving

▲ with corner radius







TiAlN | TiAlN



Illustrations show right-hand versions

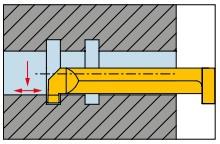
Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 257 ... EUR		Right-hand Y5 Article no. 73 256 ... EUR	
R/L 015M2515-20	7	5,9	8	6,3	35	20	20	2,5	676.00..-D	44,30	**800**	44,30	**800**
R/L 015M3015-20	7	5,9	8	6,3	35	20	20	3,0	676.00..-D	44,30	**802**	44,30	**802**
R/L 015M3015-30	7	5,9	8	6,3	45	30	30	3,0	676.00..-D	48,50	**804**	48,50	**804**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

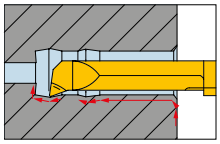
→ v_c Page 60

Set 1: Internal turning, grooving and chamfering, right hand

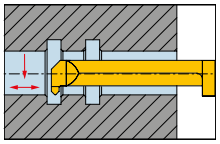
- extensive assortment of right-hand tools
- K10F – TiN



Grooving (E)



Profile turn (A)



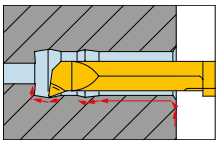
Chamfers (F)



Tool	Designation	Article No.	Bore Ø mm	Boring depth mm	Grooving depth mm	Groove width mm	Piece	fig.	Y5 Article no. 73 085 ... EUR	
Inserts	**R 004.0100-16**	**73 002 541**	4	16	0,8	1,0	1	E		
Inserts	**R 005.0150-20**	**73 002 552**	5	20	1,0	1,5	1	E		
Inserts	**R 005.0200-20**	**73 002 553**	5	20	1,0	2,0	1	E		
Inserts	**R 006.0150-22**	**73 002 562**	6	22	1,8	1,5	1	E		
Inserts	**R 006.0200-22**	**73 002 563**	6	22	1,8	2,0	1	E		
Inserts	**R 050.3-16**	**73 004 530**	3	16			1	A	469,40	999
Inserts	**R 050.4-16**	**73 004 540**	4	16			1	A		
Inserts	**R 050.5-20**	**73 004 550**	5	20			1	A		
Inserts	**R 050.6-22**	**73 004 560**	6	22			1	A		
Inserts	**R 060.5-20**	**73 006 550**	5	20			1	F		
Tool holder	**645.0016-D**	**73 080 164**					1			
Tool holder	**676.0016-D**	**73 080 166**					1			
Tightening Key	**110.645**	**70 950 175**					1			

Set 3: Internal Turning

- extensive assortment of right-hand tools
- K10F – TiN





Tool	Designation	Article No.	Bore Ø mm	Boring depth mm	Piece	Y5 Article no. 73 085 ... EUR	
Inserts	R 050.3-16	73 004 530	3	16	1		
Inserts	R 050.4-16	73 004 540	4	16	1		
Inserts	R 050.5-20	73 004 550	5	20	1	300,60	994
Inserts	R 050.6-22	73 004 560	6	22	1		
Tool holder	645.0016-D	73 080 164			1		
Tool holder	676.0016-D	73 080 166			1		
Tightening Key	110.645	70 950 175			1		

Set 4: Holder

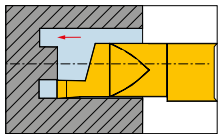


Tool	Designation	Article No.	for cutting insert Ø mm	Piece	Y5 Article no. 73 085 ... EUR	
Tool holder	**645.0016-D**	**73 080 164**	3 / 4 / 5	1		
Tool holder	**676.0016-D**	**73 080 166**	6 / 7	1	186,70	990
Tightening Key	**110.645**	**70 950 175**		1		

12

Set 6: Axial Grooving

- extensive assortment of right-hand tools
- K10F – TiN



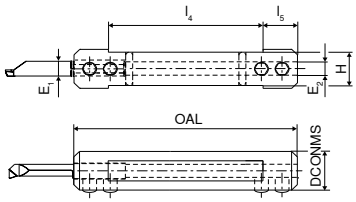


Tool	Designation	Article No.	Bore Ø mm	Boring depth mm	Grooving depth mm	Groove width mm	Piece	Y5 Article no. 73 085 ... EUR	
Inserts	**R 010.1008-10**	**73 050 571**	8	10	1,5	1,0	1		
Inserts	**R 010.1508-10**	**73 050 573**	8	10	2,5	1,5	1		
Inserts	**R 010.2008-10**	**73 050 575**	8	10	3,0	2,0	1	234,10	**996**
Inserts	**R 010.2508-20**	**73 050 677**	8	20	3,5	2,5	1		
Inserts	**R 010.3008-20**	**73 050 679**	8	20	3,5	3,0	1		
Tool holder	**676.0016-D**	**73 080 166**					1		
Tightening Key	**110.645**	**70 950 175**					1		

UltraMini – Standard tool holder for cutting inserts

- ▲ double ended
- ▲ Machining diameter from Ø 0.2 mm

Scope of supply:
Tool holder with allen key





Designation	Ø E_1 mm	Ø E_2 mm	DCONMS mm	OAL mm	l_4 mm	l_5 mm	H mm	Y5 Article no. 73 080 ... EUR	
645.0012-D	4	5	12,00	75	55	10	10,3	88,71	**163**
645.0016-D	4	5	16,00	75	55	10	14,0	93,11	**164**
645.001905-D	4	5	19,05	90	70	10	17,2	104,60	**170**
645.0020-D	4	5	20,00	90	70	10	18,0	100,30	**165**
645.0022-D	4	5	22,00	90	70	10	20,0	109,10	**171**
645.00254-D	4	5	25,40	95	75	10	23,4	116,40	**172**
676.0016-D	6	7	16,00	75	55	10	14,0	93,11	**166**
676.001905-D	6	7	19,05	90	70	10	17,2	104,60	**173**
676.0020-D	6	7	20,00	90	70	10	18,0	100,30	**167**
676.0022-D	6	7	22,00	90	70	10	20,0	109,10	**174**
676.00254-D	6	7	25,40	95	75	10	23,4	116,40	**175**
687.0016-D	7	8	16,00	75	55	10	14,0	113,30	**168**
687.0020-D	7	8	20,00	90	70	10	18,0	120,60	**169**

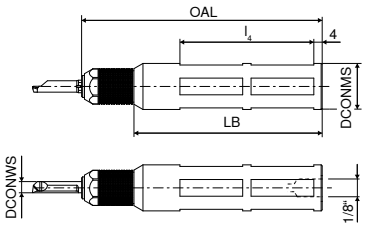
Spare parts

for Article no.	2A/28  Key I Article no. 70 950 ... EUR		Y5  Clamping screw Article no. 73 082 ... EUR	
73 080 163	SW2,5	2,45 **175**	M5x4	2,90 **013**
73 080 164	SW2,5	2,45 **175**	M5x6	2,90 **001**
73 080 170	SW2,5	2,45 **175**	M5x6	2,90 **001**
73 080 165	SW2,5	2,45 **175**	M5x8	3,80 **008**
73 080 171	SW2,5	2,45 **175**	M5x8	3,80 **008**
73 080 172	SW2,5	2,45 **175**	M5x8	3,80 **008**
73 080 166	SW2,5	2,45 **175**	M5x6	2,90 **001**
73 080 173	SW2,5	2,45 **175**	M5x6	2,90 **001**
73 080 167	SW2,5	2,45 **175**	M5x8	3,80 **008**
73 080 174	SW2,5	2,45 **175**	M5x8	3,80 **008**
73 080 175	SW2,5	2,45 **175**	M5x8	3,80 **008**
73 080 168	SW2,5	2,45 **175**	M6x6	3,80 **014**
73 080 169	SW2,5	2,45 **175**	M6x6	3,80 **014**

UltraMini – Quick change tool holder for cutting inserts

Scope of supply:
Tool holder, lock nut and clamping wedge







Designation	DCONWS mm	DCONMS g6 mm	OAL mm	LB mm	l_4 mm	Y5 Article no. 73 089 ... EUR	
UM600H.0012.4	4	12,00	115	90	64	226,50	124
UM600H.0016.4	4	16,00	115	90	64	205,50	164
UM600H.001905.4	4	19,05	115	90	64	220,20	194
UM600H.0020.4	4	20,00	115	90	64	217,00	204
UM600H.0022.4	4	22,00	115	90	64	221,20	224
UM600H.0025.4	4	25,00	115	90	64	225,50	254
UM600H.00254.4	4	25,40	115	90	64	229,70	264
UM600H.0028.4	4	28,00	115	90	64	229,70	284
UM600H.0012.5	5	12,00	115	90	64	226,50	125
UM600H.0016.5	5	16,00	115	90	64	205,50	165
UM600H.001905.5	5	19,05	115	90	64	220,20	195
UM600H.0020.5	5	20,00	115	90	64	217,00	205
UM600H.0022.5	5	22,00	115	90	64	221,20	225
UM600H.0025.5	5	25,00	115	90	64	225,50	255
UM600H.00254.5	5	25,40	115	90	64	229,70	265
UM600H.0028.5	5	28,00	115	90	64	229,70	285
UM600H.0012.6	6	12,00	115	90	64	226,50	126
UM600H.0016.6	6	16,00	115	90	64	205,50	166
UM600H.001905.6	6	19,05	115	90	64	220,20	196
UM600H.0020.6	6	20,00	115	90	64	217,00	206
UM600H.0022.6	6	22,00	115	90	64	221,20	226
UM600H.0025.6	6	25,00	115	90	64	225,50	256
UM600H.00254.6	6	25,40	115	90	64	229,70	266
UM600H.0028.6	6	28,00	115	90	64	229,70	286
UM600H.0012.7	7	12,00	115	90	64	226,50	127
UM600H.0016.7	7	16,00	115	90	64	205,50	167
UM600H.001905.7	7	19,05	115	90	64	220,20	197
UM600H.0020.7	7	20,00	115	90	64	217,00	207
UM600H.0022.7	7	22,00	115	90	64	221,20	227
UM600H.0025.7	7	25,00	115	90	64	225,50	257
UM600H.00254.7	7	25,40	115	90	64	229,70	267
UM600H.0028.7	7	28,00	115	90	64	229,70	287

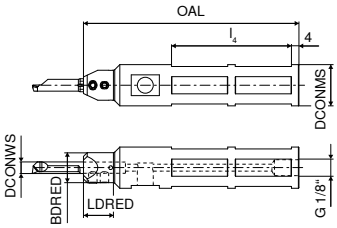
Avoid pulling cuts. Ensure a suitable clamping force is used when using thro' coolant supply. Can be tightened using a key.

Spare parts DCONWS		Y5  Lock nut UM600H Article no. 73 950 ... EUR		Y5  Clamping wedge UM600H Article no. 73 950 ... EUR	
4	M4	50,65	104	32,61	111
5	M5	50,65	105	32,61	111
6	M6	50,65	106	32,61	111
7	M7	50,65	107	32,61	111

UltraMini – Toolholder for inserts

▲ Tool holder suitable for high coolant pressures







Designation	DCONWS mm	BDRED mm	DCONMS g6 mm	OAL mm	LDRED mm	l_4 mm	Y5 Article no. 73 088 ... EUR	
UMST.0016.4	4	16	16,00	115	24	42	242,20	164
UMST.001905.4	4	16	19,05	115	24	42	262,20	194
UMST.0020.4	4	16	20,00	115	24	42	247,50	204
UMST.0022.4	4	16	22,00	115	24	42	254,80	224
UMST.00254.4	4	16	25,40	115	24	42	262,20	264
UMST.0028.4	4	16	28,00	115	24	42	262,20	284
UMST.0016.5	5	16	16,00	115	24	42	242,20	165
UMST.001905.5	5	16	19,05	115	24	42	262,20	195
UMST.0020.5	5	16	20,00	115	24	42	247,50	205
UMST.0022.5	5	16	22,00	115	24	42	254,80	225
UMST.00254.5	5	16	25,40	115	24	42	262,20	265
UMST.0028.5	5	16	28,00	115	24	42	262,20	285
UMST.0016.6	6	16	16,00	115	24	42	242,20	166
UMST.001905.6	6	16	19,05	115	24	42	262,20	196
UMST.0020.6	6	16	20,00	115	24	42	247,50	206
UMST.0022.6	6	16	22,00	115	24	42	254,80	226
UMST.00254.6	6	16	25,40	115	24	42	262,20	266
UMST.0028.6	6	16	28,00	115	24	42	262,20	286
UMST.0016.7	7	16	16,00	115	24	42	242,20	167
UMST.001905.7	7	16	19,05	115	24	42	262,20	197
UMST.0020.7	7	16	20,00	115	24	42	247,50	207
UMST.0022.7	7	16	22,00	115	24	42	254,80	227
UMST.00254.7	7	16	25,40	115	24	42	262,20	267
UMST.0028.7	7	16	28,00	115	24	42	262,20	287
UMST.0016.8	8	16	16,00	115	24	42	242,20	168
UMST.001905.8	8	16	19,05	115	24	42	262,20	198
UMST.0020.8	8	16	20,00	115	24	42	247,50	208
UMST.0022.8	8	16	22,00	115	24	42	254,80	228
UMST.00254.8	8	16	25,40	115	24	42	262,20	268
UMST.0028.8	8	16	28,00	115	24	42	262,20	288

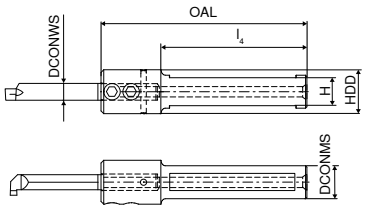
up to 150 bar

Spare parts DCONWS		Y7 Article no. 80 950 ... EUR			Y5 Article no. 73 950 ... EUR	
		 Key D			 Clamping screw	
4	T10	7,05	104	M5x0,5x6T10	4,90	050
5	T10	7,05	104	M5x0,5x6T10	4,90	050
6	T10	7,05	104	M5x0,5x6T10	4,90	050
7	T10	7,05	104	M5x0,5x6T10	4,90	050
8	T10	7,05	104	M5x0,5x6T10	4,90	050

UltraMini – Toolholder for inserts

▲ single ended

Scope of supply:
Tool holder with allen key





Designation	DCONWS mm	HDD mm	DCONMS mm	OAL mm	l_4 mm	H mm	Y5 Article no. 73 081 ... EUR	
640.0012-D	4	16	12	75	53	10,2	123,70	**264**
650.0012-D	5	16	12	75	53	10,2	123,70	**265**
660.0012-D	6	16	12	75	53	10,2	123,70	**266**
670.0012-D	7	16	12	75	53	10,2	123,70	**267**
680.0012-D	8	16	12	75	53	10,2	123,70	**268**



2A/28
Key I

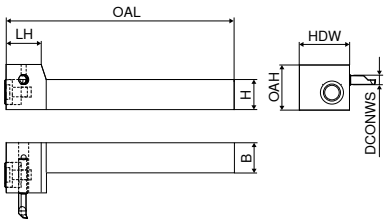


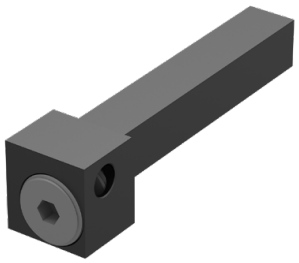
Y5
Clamping screw

Spare parts DCONWS		2A/28 Article no. 70 950 ... EUR			Y5 Article no. 73 082 ... EUR	
4	SW2,5	2,45	**175**	M5x0,5x6	2,96	**010**
5	SW2,5	2,45	**175**	M5x0,5x6	2,96	**010**
6	SW2,5	2,45	**175**	M5x0,5x6	2,96	**010**
7	SW2,5	2,45	**175**	M5x0,5x6	2,96	**010**
8	SW2,5	2,45	**175**	M5x0,5x6	2,96	**010**

UltraMini – Toolholder for inserts

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions

Designation	DCONWS mm	OAL mm	LH mm	B mm	HDW mm	H mm	OAH mm	Left-hand Y5 Article no. 73 083 ... EUR		Right-hand Y5 Article no. 73 084 ... EUR	
R/L .UHCM.1212.4	4	90	17	12	20	12	18	157,30	**124**	157,30	**124**
R/L .UHCM.1212.5	5	90	17	12	20	12	18	157,30	**125**	157,30	**125**
R/L .UHCM.1212.6	6	90	17	12	20	12	21	157,30	**126**	157,30	**126**
R/L .UHCM.1212.7	7	90	17	12	20	12	21	157,30	**127**	157,30	**127**

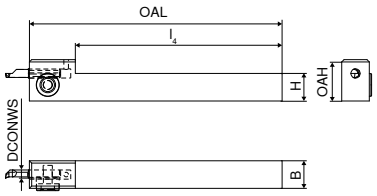

Y7 Clamping key – T

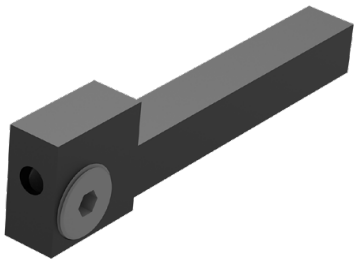

Y5 Clamping screw

Spare parts DCONWS		Article no. 80 397 ... EUR			Article no. 73 082 ... EUR	
4	SW5	4,24	**050**	UM 12	26,95	**011**
5	SW5	4,24	**050**	UM 12	26,95	**011**
6	SW5	4,24	**050**	UM 16	26,95	**012**
7	SW5	4,24	**050**	UM 16	26,95	**012**

UltraMini – Toolholder for inserts

Scope of supply:
Tool holder with allen key





12

Designation	DCONWS mm	OAL mm	l_4 mm	B mm	H mm	OAH mm	Y5 Article no. 73 086 ... EUR	
UM.1010.4	4	100	75	10	10	20	157,30	**104**
UM.1010.5	5	100	75	10	10	20	157,30	**105**
UM.1212.4	4	100	75	12	12	22	157,30	**124**
UM.1212.5	5	100	75	12	12	22	157,30	**125**
UM.1212.6	6	100	75	12	12	22	157,30	**126**

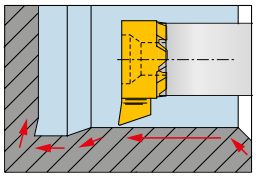

Y7 Clamping key – T

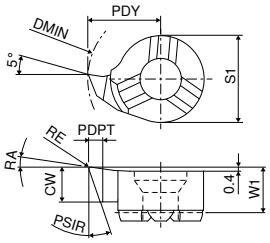

Y5 Clamping screw

Spare parts DCONWS		Article no. 80 397 ... EUR			Article no. 73 082 ... EUR	
4	SW5	4,24	**050**	UM 12	26,95	**011**
5	SW5	4,24	**050**	UM 12	26,95	**011**
6	SW5	4,24	**050**	UM 16	26,95	**012**

MiniCut – Insert for turning and profiling

CWX500 CWX500







Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	RA °	Left-hand Y5 Article no. 73 324 ...		Right-hand Y5 Article no. 73 322 ...	
											EUR		EUR	
08	8,00. R/L .3,30.18°	7,8	3,3	3,5	4,65	6,0	0,20	0,6	18	8	17,52	033	17,52	033
	8,00. R/L .3,50.18°	7,8	3,5	3,5	4,65	6,0	0,05	0,6	18	8	20,50	035	20,50	035
	8,00. R/L .3,50.20°	7,8	3,5	3,5	4,65	6,0	0,20	0,6	20	20	19,83	135	19,83	135
09	9,00. R/L .3,60.18°	9,0	3,6	3,6	5,50	6,2	0,20	0,8	18	8	17,86	136	17,86	136
	9,00. R/L .3,60.20°	9,0	3,6	3,6	5,50	6,2	0,20	0,8	20	20	20,18	236	20,18	236
11	9,80. R/L .3,90.18°	9,8	3,9	4,2	5,50	8,0	0,20	1,0	18	8	17,52	139	17,52	139
	11,00. R/L .3,90.18°	11,0	3,9	4,2	6,70	8,0	0,20	1,0	18	8	17,08	339	17,08	339
	11,00. R/L .4,20.20°	11,0	4,2	4,2	6,70	8,0	0,20	1,0	20	20	20,18	342	20,18	342
14	14,00. R/L .5,00.18°	13,8	5,0	5,1	8,70	9,0	0,20	1,5	18	8	17,08	550	17,08	550
	14,00. R/L .5,30.20°	14,0	5,3	5,3	8,70	9,0	0,20	1,5	20	20	20,18	553	20,18	553
16	15,50. R/L .5,00.18°	15,5	5,0	5,4	9,70	11,0	0,20	1,5	18	8	18,63	750	18,63	750

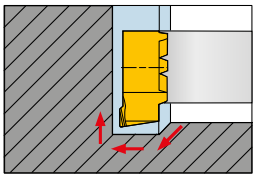
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

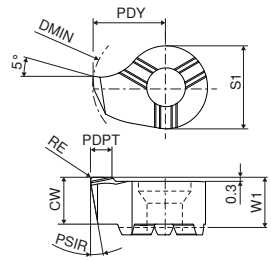
→ v_c Page 60

MiniCut – Insert for copy turning

▲ with chip breaker

CWX500 CWX500







Illustrations show right-hand versions

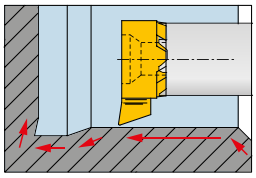
Size	Designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	Left-hand Y5 Article no. 73 388 ...		Right-hand Y5 Article no. 73 386 ...	
										EUR		EUR	
08	8,00. R/L .3,40.10°	8	3,4	3,5	4,65	6,0	0,2	0,5	10	20,18	13400	20,18	13400
09	9,00. R/L .3,50.10°	9	3,5	3,6	5,50	6,2	0,2	0,5	10	20,18	136	20,18	136
11	11,00. R .4,10.10°	11	4,1	4,2	6,70	8,0	0,2	0,5	10	20,18	14100	20,18	14100

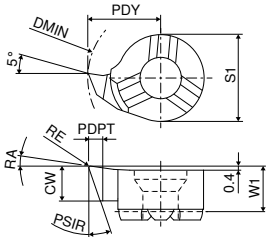
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

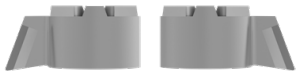
→ v_c Page 60

MiniCut – CBN insert for profiling – hard turning

▲ 56 to 65 HRC







Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	RA °	Left-hand CBN Y5 Article no. 73 368 ...		Right-hand CBN Y5 Article no. 73 366 ...	
											EUR		EUR	
08	8,00. R/L .3,30.18°	7,8	3,3	3,5	4,65	6	0,2	0,39	18	8	82,13	033	82,13	033
11	11,00. R/L .3,90.18°	11,0	3,9	4,2	6,70	8	0,2	0,55	18	8	85,95	139	85,95	139
14	14,00. R/L .5,00.18°	13,8	5,0	5,3	8,70	9	0,2	0,69	18	8	91,03	550	91,03	550
16	16,00. R/L .5,00.18°	15,5	5,0	5,4	9,70	11	0,2	0,77	18	8	94,95	750	94,95	750

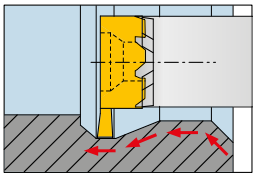
Steel		
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

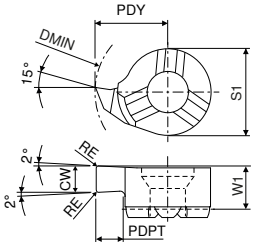
→ v_c Page 60

12

MiniCut – Internal turning insert

CWX500 CWX500







Illustrations show right-hand versions

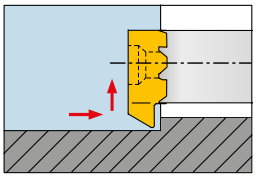
Size	Designation	DMIN mm	CW +0,05 mm	PDPT mm	W1 mm	PDY mm	S1 mm	RE mm	CDX mm	Left-hand Y5 Article no. 73 316 ... EUR		Right-hand Y5 Article no. 73 314 ... EUR	
08	8,00. R/L .1,50.1,0	8	1,5	1,0	3,3	4,8	6,0	0,2	0,2	17,41	015	17,41	015
	8,00. R/L .2,00.1,0	8	2,0	1,0	3,3	4,8	6,0	0,2	0,2	16,97	020	16,97	020
09	9,00. R/L .1,50.2,0	9	1,5	2,0	3,6	5,5	6,2	0,2	0,2	19,51	115	19,51	115
	9,00. R/L .1,50.3,0	10	1,5	3,0	3,6	6,5	6,2	0,2	0,2	19,51	121	19,51	121
	9,00. R/L .2,00.2,0	9	2,0	2,0	3,6	5,5	6,2	0,2	0,2	17,31	120	17,31	120
	9,00. R/L .2,00.3,0	10	2,0	3,0	3,6	6,5	6,2	0,2	0,2	17,31	122	17,31	122
11	11,00. R/L .1,50.2,3	11	1,5	2,3	4,2	6,7	8,0	0,2	0,2	18,63	315	18,63	315
	11,00. R/L .2,00.2,3	11	2,0	2,3	4,2	6,7	8,0	0,2	0,2	17,52	320	17,52	320
14	14,00. R/L .1,50.4,0	14	1,5	4,0	5,3	9,0	9,0	0,2	0,2	17,08	515	17,08	515
	14,00. R/L .1,50,5,5	16	1,5	5,5	5,2	10,5	9,0	0,2	0,2	21,93	516	21,93	516
	14,00. R/L .1,50.6,5	17	1,5	6,5	5,2	11,5	9,0	0,2	0,2	21,93	517	21,93	517
	14,00. R/L .2,00.4,0	14	2,0	4,0	5,3	9,0	9,0	0,2	0,2	17,52	520	17,52	520
	14,00. R/L .2,00.5,5	16	2,0	5,5	5,2	10,5	9,0	0,2	0,2	21,93	521	21,93	521
	14,00. R/L .2,00.6,5	17	2,0	6,5	5,2	11,5	9,0	0,2	0,2	21,93	522	21,93	522
	14,00. R/L .2,50.5,5	16	2,5	5,5	5,2	10,5	9,0	0,2	0,2	21,93	525	21,93	525
	14,00. R/L .2,50.6,5	17	2,5	6,5	5,2	11,5	9,0	0,2	0,2	21,93	526	21,93	526
	14,00. R/L .3,00.5,5	16	3,0	5,5	5,2	10,5	9,0	0,2	0,2	21,93	530	21,93	530
	14,00. R/L .3,00.6,5	17	3,0	6,5	5,2	11,5	9,0	0,2	0,2	21,93	531	21,93	531
16	16,00. R/L .2,00.4,3	16	2,0	4,3	5,4	10,2	11,0	0,2	0,2	19,07	720	19,07	720

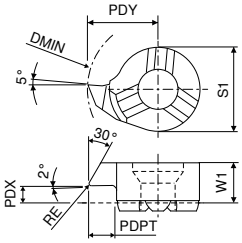
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Back boring insert

CWX500 CWX500







Illustrations show right-hand versions

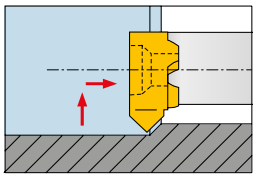
Size	Designation	DMIN mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	RE mm	CDX mm	Left-hand Y5 Article no. 73 332 ...	EUR	Right-hand Y5 Article no. 73 330 ...	EUR
08	8,00. R/L .30°.1,3	7,8	1,3	3,50	1,0	4,65	6,0	0,2	0,6	013	20,28	013	20,28
09	9,00. R/L .30°.1,7	9,0	1,7	3,55	1,2	5,50	6,2	0,2	0,8	117	19,83	117	19,83
	9,00. R/L .30°.2,3	10,0	2,3	3,55	1,2	6,50	6,2	0,2	0,8	123	19,83	123	19,83
11	11,00. R/L .30°.2,3	11,0	2,3	4,30	1,6	6,70	8,0	0,2	1,0	323	19,62	323	19,62
14	14,00. R/L .30°.3,5	13,8	3,5	5,40	2,4	8,70	9,0	0,2	1,5	535	20,28	535	20,28

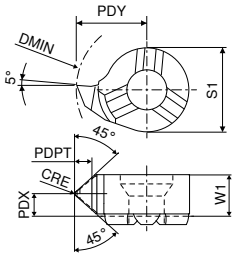
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Internal turning and chamfering insert

CWX500 CWX500







12

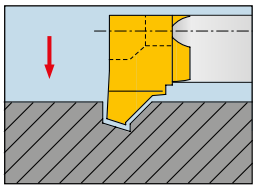
Illustrations show right-hand versions

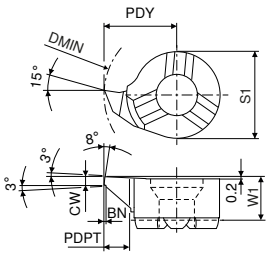
Size	Designation	DMIN mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	CRE mm	CDX mm	Left-hand Y5 Article no. 73 336 ...	EUR	Right-hand Y5 Article no. 73 334 ...	EUR
08	8,00. R/L .45°.1,4	8	1,4	3,50	1,8	4,8	6,0	0,2	0,6	010	16,75	010	16,75
09	9,00. R/L .45°.1,3	9	1,3	3,55	1,8	5,5	6,2	0,2	0,8	110	16,97	110	16,97
11	11,00. R/L .45°.1,5	11	1,5	4,30	2,2	6,7	8,0	0,2	1,0	310	16,75	310	16,75
14	14,00. R/L .45°.1,5	14	1,5	5,40	2,8	9,0	9,0	0,2	1,2	510	18,08	510	18,08

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Insert for pregrooving and chamfering





CWX500 CWX500



Illustrations show right-hand versions

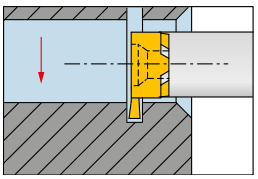
Size	Designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	BN mm	Left-hand Y5 Article no. 73 340 ... EUR		Right-hand Y5 Article no. 73 338 ... EUR	
08	8,00. R/L .1,00.45°	8	1	1,0	3,3	4,8	6,0	0,2	17,20	100	17,20	100
09	9,00. R/L .1,00.45°	9	1	1,5	3,6	5,5	6,2	0,2	17,52	215	17,52	215
11	11,00. R/L .1,00.45°	11	1	1,5	4,2	6,7	8,0	0,2	17,20	315	17,20	315
14	14,00. R/L .1,00.45°	14	1	1,5	5,3	9,0	9,0	0,2	17,20	515	17,20	515
16	16,00. R/L .1,00.45°	16	1	1,5	5,4	10,2	11,0	0,2	17,20	715	17,20	715

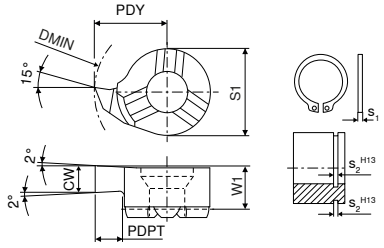
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Grooving insert

CWX500 CWX500







Illustrations show right-hand versions

Size	Designation	DMIN	CW	PDPT	W1	S1	S2 H13	PDY	S1	Left-hand Y5 Article no. 73 312 ...		Right-hand Y5 Article no. 73 310 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
08	8,00. R/L .0,73.1,0	8	0,73	1,0	3,3	0,6	0,7	4,8	6,0	15,65	073	15,65	073
	8,00. R/L .0,83.1,0	8	0,83	1,0	3,3	0,7	0,8	4,8	6,0	15,65	083	15,65	083
	8,00. R/L .0,93.1,0	8	0,93	1,0	3,3	0,8	0,9	4,8	6,0	15,65	093	15,65	093
	8,00. R/L .1,00.1,0	8	1,00	1,0	3,3			4,8	6,0	15,65	110	15,65	110
	8,00. R/L .1,20.1,0	8	1,20	1,0	3,3	1,0	1,1	4,8	6,0	15,65	112	15,65	112
	8,00. R/L .1,40.1,0	8	1,40	1,0	3,3	1,2	1,3	4,8	6,0	15,65	114	15,65	114
	8,00. R/L .1,50.1,0	8	1,50	1,0	3,3			4,8	6,0	15,65	115	15,65	115
	8,00. R/L .1,70.1,0	8	1,70	1,0	3,3	1,5	1,6	4,8	6,0	15,65	117	15,65	117
	8,00. R/L .2,00.1,0	8	2,00	1,0	3,3			4,8	6,0	15,65	120	15,65	120
09	9,00. R/L .0,73.1,2	9	0,73	1,2	3,6	0,6	0,7	5,5	6,2	15,87	173	15,87	173
	9,00. R/L .0,83.1,3	9	0,83	1,3	3,6	0,7	0,8	5,5	6,2	15,87	183	15,87	183
	9,00. R/L .0,93.1,5	9	0,93	1,5	3,6	0,8	0,9	5,5	6,2	15,87	193	15,87	193
	9,00. R/L .1,00.1,8	9	1,00	1,8	3,6			5,5	6,2	15,87	210	15,87	210
	9,00. R/L .1,20.1,8	9	1,20	1,8	3,6	1,0	1,1	5,5	6,2	15,87	212	15,87	212
	9,00. R/L .1,40.1,8	9	1,40	1,8	3,6	1,2	1,3	5,5	6,2	15,87	214	15,87	214
	9,00. R/L .1,50.1,8	9	1,50	1,8	3,6			5,5	6,2	15,87	215	15,87	215
	9,00. R/L .1,70.1,8	9	1,70	1,8	3,6	1,5	1,6	5,5	6,2	15,87	217	15,87	217
	9,00. R/L .2,00.1,8	9	2,00	1,8	3,6			5,5	6,2	15,87	220	15,87	220
	9,00. R/L .2,50.1,8	9	2,50	1,8	3,6			5,5	6,2	15,87	225	15,87	225
	9,00. R/L .3,00.1,8	9	3,00	1,8	3,6			5,5	6,2	15,87	230	15,87	230
11	11,00. R/L .0,73.1,2	11	0,73	1,2	4,2	0,6	0,7	6,7	8,0	15,65	373	15,65	373
	11,00. R/L .0,83.1,3	11	0,83	1,3	4,2	0,7	0,8	6,7	8,0	15,65	383	15,65	383
	11,00. R/L .0,93.1,5	11	0,93	1,5	4,2	0,8	0,9	6,7	8,0	15,65	393	15,65	393
	11,00. R/L .1,00.2,3	11	1,00	2,3	4,2			6,7	8,0	15,65	310	15,65	310
	11,00. R/L .1,20.2,3	11	1,20	2,3	4,2	1,0	1,1	6,7	8,0	15,65	312	15,65	312
	11,00. R/L .1,40.2,3	11	1,40	2,3	4,2	1,2	1,3	6,7	8,0	15,65	314	15,65	314
	11,00. R/L .1,50.2,3	11	1,50	2,3	4,2			6,7	8,0	15,65	315	15,65	315
	11,00. R/L .1,70.2,3	11	1,70	2,3	4,2	1,5	1,6	6,7	8,0	15,65	317	15,65	317
	11,00. R/L .2,00.2,3	11	2,00	2,3	4,2			6,7	8,0	15,65	320	15,65	320
	11,00. R/L .2,50.2,3	11	2,50	2,3	4,2			6,7	8,0	15,65	325	15,65	325
	11,00. R/L .3,00.2,3	11	3,00	2,3	4,2			6,7	8,0	15,65	330	15,65	330
14	14,00. R/L .0,73.1,2	14	0,73	1,2	5,3	0,6	0,7	9,0	9,0	15,65	573	15,65	573
	14,00. R/L .0,83.1,3	14	0,83	1,3	5,3	0,7	0,8	9,0	9,0	15,65	583	15,65	583
	14,00. R/L .0,93.1,5	14	0,93	1,5	5,3	0,8	0,9	9,0	9,0	15,65	593	15,65	593
	14,00. R/L .1,20.4,0	14	1,20	4,0	5,3	1,0	1,1	9,0	9,0	15,65	512	15,65	512
	14,00. R/L .1,40.4,0	14	1,40	4,0	5,3	1,2	1,3	9,0	9,0	15,65	514	15,65	514
	14,00. R/L .1,50.4,0	14	1,50	4,0	5,3			9,0	9,0	15,65	515	15,65	515
	14,00. R/L .1,70.4,0	14	1,70	4,0	5,3	1,5	1,6	9,0	9,0	15,65	517	15,65	517
	14,00. R/L .2,00.4,0	14	2,00	4,0	5,3			9,0	9,0	15,65	520	15,65	520
	14,00. R/L .2,50.4,0	14	2,50	4,0	5,3			9,0	9,0	15,65	525	15,65	525
	14,00. R/L .3,00.4,0	14	3,00	4,0	5,3			9,0	9,0	15,65	530	15,65	530
16	16,00. R/L .0,73.1,2	16	0,73	1,2	5,4	0,6	0,7	10,2	11,0	18,96	773	18,96	773
	16,00. R/L .0,83.1,3	16	0,83	1,3	5,4	0,7	0,8	10,2	11,0	18,96	783	18,96	783
	16,00. R/L .0,93.1,5	16	0,93	1,5	5,4	0,8	0,9	10,2	11,0	18,96	793	18,96	793
	16,00. R/L .1,20.4,3	16	1,20	4,3	5,4	1,0	1,1	10,2	11,0	17,20	712	17,20	712
	16,00. R/L .1,40.4,3	16	1,40	4,3	5,4	1,2	1,3	10,2	11,0	17,20	714	17,20	714
	16,00. R/L .1,50.4,3	16	1,50	4,3	5,4			10,2	11,0	17,20	715	17,20	715
	16,00. R/L .1,70.4,3	16	1,70	4,3	5,4	1,5	1,6	10,2	11,0	17,20	717	17,20	717
	16,00. R/L .2,00.4,3	16	2,00	4,3	5,4			10,2	11,0	17,20	720	17,20	720
	16,00. R/L .2,50.4,3	16	2,50	4,3	5,4			10,2	11,0	17,20	725	17,20	725
	16,00. R/L .3,00.4,3	16	3,00	4,3	5,4			10,2	11,0	17,20	730	17,20	730
	16,00. R/L .3,50.4,3	16	3,50	4,3	5,4			10,2	11,0	17,20	735	17,20	735
	16,00. R/L .4,00.4,3	16	4,00	4,3	5,4			10,2	11,0	17,20	740	17,20	740

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

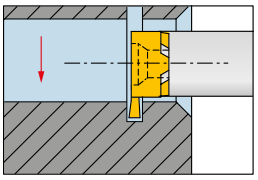
→ v_c Page 60

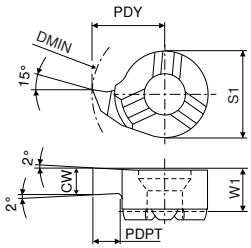
12

MiniCut – Grooving insert

▲ large groove depth ($T_{max.}$ 5.5 mm)

CWX500 CWX500







Illustrations show right-hand versions

Size	Designation	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 372 ...	EUR	Right-hand Y5 Article no. 73 370 ...	EUR
14	14,00. R/L .1,50.5,5	16	1,5	5,5	5,2	10,5	9	18,08	715	18,08	715
	14,00. R/L .2,00.5,5	16	2,0	5,5	5,2	10,5	9	18,08	720	18,08	720
	14,00. R/L .2,50.5,5	16	2,5	5,5	5,2	10,5	9	18,08	725	18,08	725
	14,00. R/L .3,00.5,5	16	3,0	5,5	5,2	10,5	9	18,08	730	18,08	730

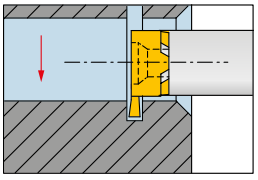
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

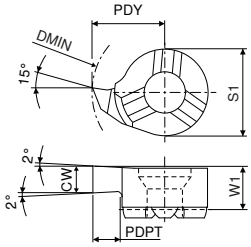
→ v_c Page 60

MiniCut – Grooving insert

▲ large groove depth ($T_{max.}$ 6.5 mm)

CWX500 CWX500







Illustrations show right-hand versions

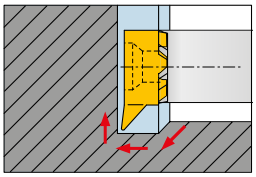
Size	Designation	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 384 ...	EUR	Right-hand Y5 Article no. 73 382 ...	EUR
14	14,00. R/L .1,50.6,5	17	1,5	6,5	5,2	11,5	9	18,08	515	18,08	515
	14,00. R/L .2,00.6,5	17	2,0	6,5	5,2	11,5	9	18,08	520	18,08	520
	14,00. R/L .2,50.6,5	17	2,5	6,5	5,2	11,5	9	18,08	525	18,08	525
	14,00. R/L .3,00.6,5	17	3,0	6,5	5,2	11,5	9	18,08	530	18,08	530

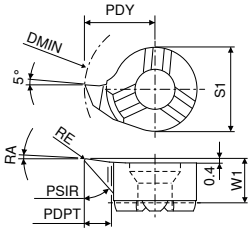
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Internal undercut insert

CWX500 CWX500







Illustrations show right-hand versions

Size	Designation	DMIN mm	PDPT mm	W1 mm	PDY mm	S1 mm	RE mm	CDX mm	PSIR °	RA °	Left-hand Y5 Article no. 73 328 ... EUR		Right-hand Y5 Article no. 73 326 ... EUR	
08	8,00. R/L .30°.1,0	7,8	1,0	3,5	4,65	6,0	0,2	0,4	30	3	20,38	010	20,38	010
	8,00. R/L .47°.1,2	7,8	1,2	3,5	4,65	6,0	0,2	0,4	47	3	17,63	012	17,63	012
09	9,00. R/L .47°.1,5	9,0	1,5	3,6	5,50	6,2	0,2	0,5	47	3	17,52	115	17,52	115
11	11,00. R/L .30°.2,3	11,0	2,3	4,2	6,70	8,0	0,2	0,6	30	3	19,83	423	19,83	423
	11,00. R/L .47°.2,3	11,0	2,3	4,2	6,70	8,0	0,2	0,6	47	3	17,20	323	17,20	323
14	13,70. R/L .47°.3,0	13,7	3,0	5,3	8,70	9,0	0,2	0,8	47	3	17,63	530	17,63	530
	13,70. R/L .30°.4,0	13,7	4,0	5,3	8,70	9,0	0,2	0,8	30	3	20,38	540	20,38	540
16	15,80. R/L .30°.4,3	15,8	4,3	5,4	10,20	11,0	0,2	1,0	30	3	22,38	744	22,38	744

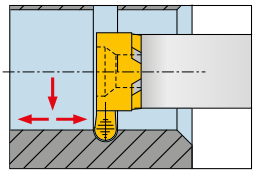
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

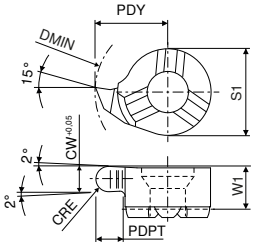
→ v_c Page 60

12

MiniCut – Full radius grooving and turning insert

CWX500 CWX500







Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	CRE mm	Left-hand Y5 Article no. 73 320 ... EUR		Right-hand Y5 Article no. 73 318 ... EUR	
08	8,00. R/L .0,80.1,0	8	0,8	1,0	3,3	4,8	6,0	0,4	18,51	008	18,51	008
	8,00. R/L .1,20.1,0	8	1,2	1,0	3,3	4,8	6,0	0,6	18,51	012	18,51	012
	8,00. R/L .1,80.1,0	8	1,8	1,0	3,3	4,8	6,0	0,9	18,51	018	18,51	018
	8,00. R/L .2,00.1,0	8	2,0	1,0	3,3	4,8	6,0	1,0	18,84	020	18,84	020
09	9,00. R/L .0,80.1,6	9	0,8	1,6	3,6	5,5	6,2	0,4	19,51	108	19,51	108
	9,00. R/L .1,20.1,6	9	1,2	1,6	3,6	5,5	6,2	0,6	19,51	112	19,51	112
	9,00. R/L .1,80.1,6	9	1,8	1,6	3,6	5,5	6,2	0,9	19,51	118	19,51	118
	9,00. R/L .2,00.1,6	9	2,0	1,6	3,6	5,5	6,2	1,0	19,51	120	19,51	120
11	11,00. R/L .0,80.2,3	11	0,8	2,3	4,2	6,7	8,0	0,4	19,07	308	19,07	308
	11,00. R/L .1,20.2,3	11	1,2	2,3	4,2	6,7	8,0	0,6	19,07	312	19,07	312
	11,00. R/L .1,60.2,3	11	1,6	2,3	4,2	6,7	8,0	0,8	19,51	316	19,51	316
	11,00. R/L .1,80.2,3	11	1,8	2,3	4,2	6,7	8,0	0,9	19,07	318	19,07	318
	11,00. R/L .2,00.2,3	11	2,0	2,3	4,2	6,7	8,0	1,0	19,07	320	19,07	320
	11,00. R/L .2,40.2,3	11	2,4	2,3	4,2	6,7	8,0	1,2	19,51	324	19,51	324
	11,00. R/L .3,00.2,3	11	3,0	2,3	4,2	6,7	8,0	1,5	19,07	330	19,07	330
14	14,00. R/L .0,80.4,0	14	0,8	4,0	5,3	9,0	9,0	0,4	20,28	508	20,28	508
	14,00. R/L .1,20.4,0	14	1,2	4,0	5,3	9,0	9,0	0,6	19,95	512	19,95	512
	14,00. R/L .1,80.4,0	14	1,8	4,0	5,3	9,0	9,0	0,9	19,95	518	19,95	518
	14,00. R/L .2,00.4,0	14	2,0	4,0	5,3	9,0	9,0	1,0	19,95	520	19,95	520
	14,00. R/L .2,20.4,0	14	2,2	4,0	5,3	9,0	9,0	1,1	19,95	522	19,95	522
	14,00. R/L .3,00.4,0	14	3,0	4,0	5,3	9,0	9,0	1,5	19,95	530	19,95	530
16	16,00. R/L .1,60.4,3	16	1,6	4,3	5,4	10,2	11,0	0,8	20,83	716	20,83	716
	16,00. R/L .1,80.4,3	16	1,8	4,3	5,4	10,2	11,0	0,9	20,50	718	20,50	718
	16,00. R/L .2,00.4,3	16	2,0	4,3	5,4	10,2	11,0	1,0	20,83	720	20,83	720
	16,00. R/L .2,20.4,3	16	2,2	4,3	5,4	10,2	11,0	1,1	20,50	722	20,50	722
	16,00. R/L .2,40.4,3	16	2,4	4,3	5,4	10,2	11,0	1,2	20,83	724	20,83	724
	16,00. R/L .3,00.4,3	16	3,0	4,3	5,4	10,2	11,0	1,5	20,50	730	20,50	730
	16,00. R/L .3,20.4,3	16	3,2	4,3	5,4	10,2	11,0	1,6	20,83	732	20,83	732
	16,00. R/L .4,00.4,3	16	4,0	4,3	5,4	10,2	11,0	2,0	20,50	740	20,50	740

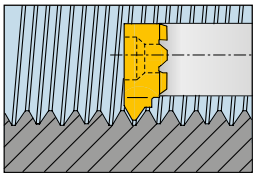
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

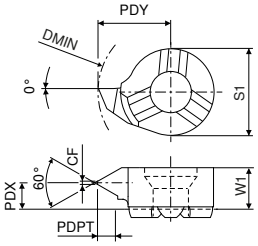
→ v_c Page 60

MiniCut – Threading insert (Partial profile)

M | 60°

CWX500 | CWX500







Illustrations show right-hand versions

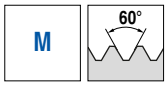
Size	Designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 344 ... EUR		Right-hand Y5 Article no. 73 342 ... EUR	
08	8,00. R/L .0,5/0,75.60°	8	0,5 - 0,75	0,06	0,43	3,50	2,7	4,8	6,0	20,50	012	20,50	012
	8,00. R/L .1,0/1,25.60°	8	1,0 - 1,25	0,12	0,70	3,50	2,7	4,8	6,0	20,50	014	20,50	014
	8,00. R/L .1,5/1,75.60°	8	1,5 - 1,75	0,18	0,95	3,50	2,5	4,8	6,0	20,50	010	20,50	010
09	9,00. R/L .0,5/0,75.60°	9	0,5 - 0,75	0,06	0,27	3,55	3,2	5,5	6,2	20,83	112	20,83	112
	9,00. R/L .1,0/1,25.60°	9	1,0 - 1,25	0,12	0,54	3,55	3,0	5,5	6,2	20,83	114	20,83	114
	9,00. R/L .1,5/1,75.60°	9	1,5 - 1,75	0,18	0,81	3,55	2,8	5,5	6,2	20,83	116	20,83	116
	9,00. R/L .1,75/2,0.60°	9	1,75 - 2,0	0,20	0,95	3,55	2,6	5,5	6,2	20,83	118	20,83	118
	9,00. R/L .2,0/2,5.60°	9	2,0 - 2,5	0,25	1,08	3,55	2,5	5,5	6,2	20,83	120	20,83	120
	9,00. R/L .2,5/3,0.60°	9	2,5 - 3,0	0,31	1,35	3,55	2,1	5,5	6,2	20,83	122	20,83	122
	9,00. R/L .3,0/3,5.60°	9	3,0 - 3,5	0,37	1,62	3,55	1,9	5,5	6,2	20,83	124	20,83	124
11	11,00. R/L .0,5/0,75.60°	11	0,5 - 0,75	0,06	0,75	4,30	3,5	6,7	8,0	20,50	312	20,50	312
	11,00. R/L .1,0/1,25.60°	11	1,0 - 1,25	0,12	0,55	4,30	3,5	6,7	8,0	20,50	314	20,50	314
	11,00. R/L .1,5/1,75.60°	11	1,5 - 1,75	0,18	0,81	4,30	3,5	6,7	8,0	20,50	316	20,50	316
	11,00. R/L .2,0/2,5.60°	11	2,0 - 2,5	0,25	1,08	4,30	3,0	6,7	8,0	20,50	310	20,50	310
	11,00. R/L .2,5/3,0.60°	11	2,5 - 3,0	0,31	1,35	4,30	3,0	6,7	8,0	20,50	320	20,50	320
14	14,00. R/L .1,0/1,25.60°	14	1,0 - 1,25	0,12	0,55	5,40	4,7	9,0	9,0	20,50	512	20,50	512
	14,00. R/L .1,5/1,75.60°	14	1,5 - 1,75	0,18	0,81	5,40	4,5	9,0	9,0	20,50	514	20,50	514
	14,00. R/L .2,0/2,5.60°	14	2,0 - 2,5	0,25	1,08	5,40	4,2	9,0	9,0	20,50	510	20,50	510
	14,00. R/L .2,5/3,0.60°	14	2,5 - 3,0	0,31	1,35	5,40	4,7	9,0	9,0	20,50	520	20,50	520
16	16,00. R/L .1,0/1,25.60°	16	1,0 - 1,25	0,12	0,55	5,50	4,7	10,2	11,0	20,50	712	20,50	712
	16,00. R/L .1,5/1,75.60°	16	1,5 - 1,75	0,18	0,81	5,50	4,5	10,2	11,0	20,50	714	20,50	714
	16,00. R/L .2,0/2,5.60°	16	2,0 - 2,5	0,25	1,08	5,50	4,2	10,2	11,0	20,50	716	20,50	716
	16,00. R/L .2,5/3,0.60°	16	2,5 - 3,0	0,31	1,35	5,50	4,2	10,2	11,0	20,50	710	20,50	710

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

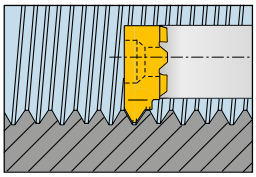
12

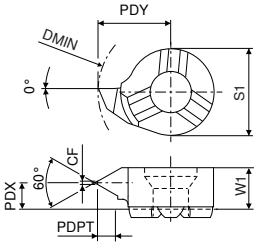
MiniCut – Threading insert (Full profile)













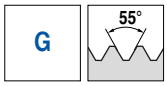
Illustrations show right-hand versions

Size	Designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 348 ... EUR		Right-hand Y5 Article no. 73 346 ... EUR	
09	9,00. R/L .0,5.60°	9	0,50	0,06	0,27	3,55	3,25	5,5	6,2	23,25	405	23,25	405
	9,00. R/L .1,0.60°	9	1,00	0,12	0,54	3,55	3,00	5,5	6,2	23,25	410	23,25	410
	9,00. R/L .1,5.60°	9	1,50	0,18	0,81	3,55	2,80	5,5	6,2	23,25	415	23,25	415
	9,00. R/L .1,75.60°	9	1,75	0,20	0,95	3,55	2,70	5,5	6,2	23,25	418	23,25	418
	9,00. R/L .2,0.60°	9	2,00	0,25	1,08	3,55	2,60	5,5	6,2	23,25	420	23,25	420
	9,00. R/L .2,5.60°	9	2,50	0,31	1,35	3,55	2,50	5,5	6,2	23,25	425	23,25	425
	9,00. R/L .3,0.60°	9	3,00	0,37	1,62	3,55	2,20	5,5	6,2	23,25	430	23,25	430
11	11,00. R/L .1,0.60°	11	1,00	0,12	0,54	4,30	3,50	6,7	8,0	22,81	314	22,81	314
	11,00. R/L .1,5.60°	11	1,50	0,18	0,81	4,30	3,50	6,7	8,0	22,81	316	22,81	316
	11,00. R/L .2,0.60°	11	2,00	0,25	1,08	4,30	3,20	6,7	8,0	22,81	310	22,81	310
	11,00. R/L .2,5.60°	11	2,50	0,31	1,35	4,30	3,00	6,7	8,0	22,81	320	22,81	320
	11,00. R/L .3,0.60°	11	3,00	0,37	1,62	4,30	2,90	6,7	8,0	22,81	330	22,81	330
14	14,00. R/L .0,5.60°	14	0,50	0,06	0,27	5,40	3,50	9,0	9,0	23,70	510	23,70	510
	14,00. R/L .1,0.60°	14	1,00	0,12	0,54	5,40	3,50	9,0	9,0	21,05	512	21,05	512
	14,00. R/L .1,5.60°	14	1,50	0,18	0,81	5,40	3,30	9,0	9,0	21,05	514	21,05	514
	14,00. R/L .2,0.60°	14	2,00	0,25	1,08	5,40	4,20	9,0	9,0	21,05	610	21,05	610
	14,00. R/L .2,5.60°	14	2,50	0,31	1,35	5,40	4,70	9,0	9,0	21,05	520	21,05	520
16	16,00. R/L .1,0.60°	16	1,00	0,12	0,54	5,50	4,70	10,2	11,0	25,46	712	25,46	712
	16,00. R/L .1,5.60°	16	1,50	0,18	0,81	5,50	4,50	10,2	11,0	25,46	714	25,46	714
	16,00. R/L .2,0.60°	16	2,00	0,25	1,08	5,50	4,20	10,2	11,0	25,46	716	25,46	716
	16,00. R/L .2,5.60°	16	2,50	0,31	1,35	5,50	4,20	10,2	11,0	25,46	710	25,46	710
	16,00. R/L .3,0.60°	16	3,00	0,37	1,62	5,50	4,00	10,2	11,0	25,46	720	25,46	720
	16,00. R/L .3,5.60°	16	3,50	0,43	1,89	5,50	3,80	10,2	11,0	25,46	730	25,46	730
	16,00. R/L .4,0.60°	16	4,00	0,50	2,16	5,50	3,60	10,2	11,0	25,46	740	25,46	740

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

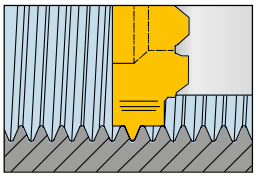
→ v_c Page 60

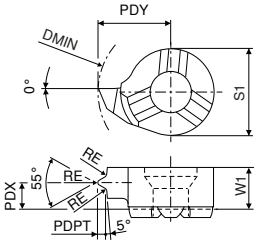
MiniCut – Threading insert (Full profile)













Illustrations show right-hand versions

Size	Designation	DMIN mm	TP mm	TPI 1/"	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	RE mm	Left-hand Y5 Article no. 73 352 ...		Right-hand Y5 Article no. 73 350 ...	
											EUR		EUR	
11	11,00. R/L .1,814.55°	11	1,814	14	1,16	4,30	3,0	6,7	8	0,24	30,31	306	30,31	306
	11,00. R/L .1,337.55°	11	1,337	19	0,85	4,30	2,7	6,7	8	0,18	30,31	304	30,31	304
14	14,00. R/L .1,814.55°	14	1,814	14	1,16	5,35	3,6	9,0	9	0,24	30,31	506	30,31	506
	14,00. R/L .1,337.55°	14	1,337	19	0,85	5,35	3,8	9,0	9	0,18	30,31	504	30,31	504
16	16,00. R/L .2,309.55°	16	2,309	11	1,48	5,50	3,5	10,2	11	0,31	32,41	708	32,41	708
	16,00. R/L .1,814.55°	16	1,814	14	1,16	5,50	3,9	10,2	11	0,24	32,41	706	32,41	706

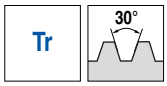
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

12

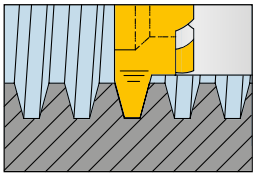
MiniCut – Threading insert (Partial profile)

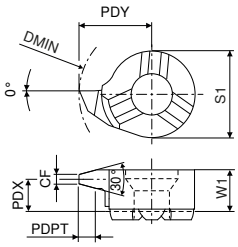
▲ Trapezoidal thread DIN 103













Illustrations show right-hand versions

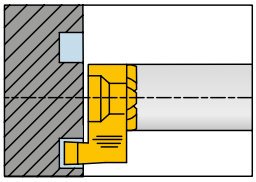
Size	Designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 356 ... EUR		Right-hand Y5 Article no. 73 354 ... EUR	
09	9,00. R/L .1,5.30°	9	1,5	0,47	0,90	3,55	3,00	5,5	6,2	21,49	415	21,49	415
	9,00. R/L .2,0.30°	9	2,0	0,60	1,25	3,55	2,85	5,5	6,2	21,49	420	21,49	420
	9,00. R/L .3,0.30°	9	3,0	0,96	1,75	3,55	2,25	5,5	6,2	21,49	430	21,49	430
	9,00. R/L .4,0.30°	10	4,0	1,33	2,25	3,55	2,25	5,5	6,2	21,49	440	21,49	440
11	11,00. R/L .1,5.30°	11	1,5	0,47	0,90	4,30	3,70	6,7	8,0	21,15	315	21,15	315
	11,00. R/L .2,0.30°	11	2,0	0,60	1,25	4,30	3,50	6,7	8,0	21,15	320	21,15	320
	11,00. R/L .3,0.30°	11	3,0	0,96	1,75	4,30	3,20	6,7	8,0	21,15	330	21,15	330
	11,00. R/L .4,0.30°	11	4,0	1,33	2,25	3,95	2,60	6,7	8,0	20,50	340	20,50	340
14	14,00. R/L .2,0.30°	14	2,0	0,60	1,25	5,30	4,30	9,0	9,0	21,15	520	21,15	520
	14,00. R/L .3,0.30°	14	3,0	0,96	1,75	5,30	4,00	9,0	9,0	21,15	530	21,15	530
	14,00. R/L .4,0.30°	14	4,0	1,33	2,25	5,30	3,60	9,0	9,0	21,15	540	21,15	540
	14,00. R/L .5,0.30°	14	5,0	1,69	2,75	5,30	3,30	9,0	9,0	21,15	550	21,15	550
16	16,00. R/L .2,0.30°	16	2,0	0,60	1,25	5,50	4,50	9,7	11,0	24,14	720	24,14	720
	16,00. R/L .3,0.30°	16	3,0	0,96	1,75	5,50	4,30	9,7	11,0	24,14	730	24,14	730
	16,00. R/L .4,0.30°	16	4,0	1,33	2,25	5,50	4,00	9,7	11,0	24,14	740	24,14	740
	16,00. R/L .5,0.30°	16	5,0	1,69	2,75	5,50	3,55	9,7	11,0	23,36	750	23,36	750
	16,00. R/L .6,0.30°	16	6,0	1,92	3,50	5,50	3,30	10,2	11,0	25,46	760	25,46	760

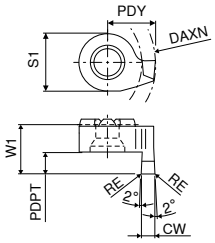
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Axial grooving insert

CWX500 CWX500







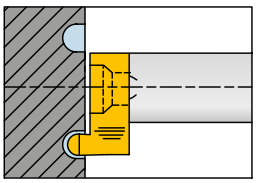
Illustrations show right-hand versions

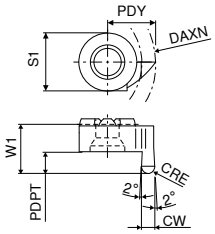
Size	Designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	RE mm	S1 mm	Left-hand Y5 Article no. 73 364 ...	EUR	Right-hand Y5 Article no. 73 362 ...	EUR
14	14,00. R/L .1,0.1,5	14	1,0	1,5	8,3	9		9	510	16,65	510	16,65
	14,00. R/L .1,5.2,5	14	1,5	2,5	8,3	9	0,2	9	515	16,65	515	16,65
	14,00. R/L .2,0.3,0	14	2,0	3,0	8,3	9	0,2	9	520	16,65	520	16,65
	14,00. R/L .2,0.5,0	14	2,0	5,0	10,3	9	0,2	9	620	19,07	620	19,07
	14,00. R/L .2,5.3,0	14	2,5	3,0	8,3	9	0,2	9	525	16,65	525	16,65
	14,00. R/L .2,5.5,0	14	2,5	5,0	10,3	9	0,2	9	625	19,07	625	19,07
	14,00. R/L .3,0.3,0	14	3,0	3,0	8,3	9	0,2	9	530	16,65	530	16,65
	14,00. R/L .3,0.5,0	14	3,0	5,0	10,3	9	0,2	9	630	19,07	630	19,07
Steel									●		●	
Stainless steel									●		●	
Cast iron									●		●	
Non ferrous metals									●		●	
Heat resistant alloys									●		●	
hardened materials												

→ v_c Page 60

MiniCut – Full radius axial grooving insert

CWX500 CWX500







12

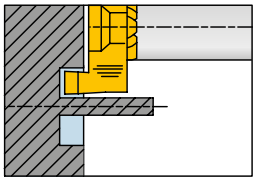
Illustrations show right-hand versions

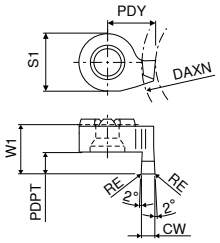
Size	Designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	CRE mm	S1 mm	Left-hand Y5 Article no. 73 376 ...	EUR	Right-hand Y5 Article no. 73 374 ...	EUR
14	14,00. R/L . 1,0.1,5	14	1,0	1,5	8,3	9	0,5	9	510	20,50	510	20,50
	14,00. R/L . 1,6.2,5	14	1,6	2,5	8,3	9	0,8	9	516	20,50	516	20,50
	14,00. R/L . 2,0.3,0	14	2,0	3,0	8,3	9	1,0	9	520	20,50	520	20,50
	14,00. R/L . 2,5.3,0	14	2,5	3,0	8,3	9	1,2	9	525	20,50	525	20,50
	14,00. R/L . 3,0.3,0	14	3,0	3,0	8,3	9	1,5	9	530	20,50	530	20,50
Steel									●		●	
Stainless steel									●		●	
Cast iron									●		●	
Non ferrous metals									●		●	
Heat resistant alloys									●		●	
hardened materials												

→ v_c Page 60

MiniCut – Axial grooving insert over a spigot

CWX500 CWX500







Illustrations show right-hand versions

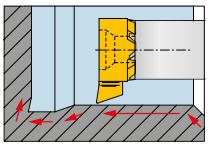
Size	Designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	RE mm	S1 mm	Left-hand Y5 Article no. 73 360 ...	EUR	Right-hand Y5 Article no. 73 358 ...	EUR
12	12,00. R/L .1,0.1,5	12	1,0	1,5	8,3	7,0		9	17,20	310	17,20	310
	12,00. R/L .1,5.2,5	12	1,5	2,5	8,3	7,5	0,2	9	17,52	315	17,52	315
	12,00. R/L .2,0.3,0	12	2,0	3,0	8,3	8,0	0,2	9	17,52	320	17,52	320
	12,00. R/L .2,0.5,0	12	2,0	5,0	10,3	8,0	0,2	9	20,18	420	20,18	420
	12,00. R/L .2,5.3,0	12	2,5	3,0	8,3	8,5	0,2	9	17,52	325	17,52	325
	12,00. R/L .2,5.5,0	12	2,5	5,0	10,3	8,5	0,2	9	20,18	425	20,18	425
	12,00. R/L .3,0.3,0	12	3,0	3,0	8,3	9,0	0,2	9	17,52	330	17,52	330
	12,00. R/L .3,0.5,0	12	3,0	5,0	10,3	9,0	0,2	9	20,18	430	20,18	430

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

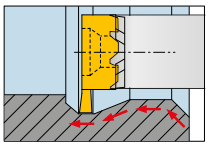
→ v_c Page 60

Set: MiniCut size 9

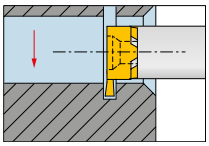
- ▲ Extensive range of size 9 inserts
- ▲ CWX 500



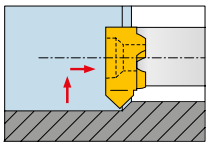
Profile turning (K)



Profile turn (A)



Grooving (E)

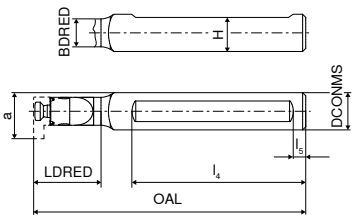


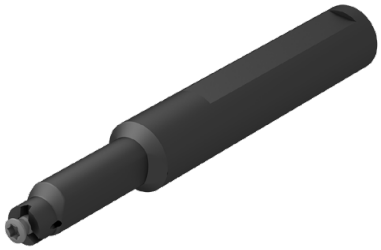
Chamfers (F)



Tool	Designation	Article number	Bore Ø mm	Width mm	Grooving depth mm	Piece	fig.	Y5 Article no. 73 528 ...	EUR
Grooving insert	**9,00. R .1,00.1,8**	**73 310 210**	9	1,00	1,8	1	E		
NC fine turning insert	**9,00. R .2,00.2,0**	**73 314 120**	9	2,0 +0,05	2,0	1	A		
Profiling insert	**9,00. R .3,60.10°**	**73 386 136**	9	3,6		1	K		
Profiling insert	**9,00. R .3,60.20°**	**73 322 236**	9	3,6		1	K	190,90	125
Chamfering insert	**9,00. R .45°.1,3**	**73 334 110**	9		1,3	1	F		
Tool holder	**9,00/16.N.25.1,0**	**73 522 125**				1			
Tightening Key		**70 950 105**				1			

MiniCut – Steel Tool holder





Size	Designation	a	DCONMS $_{f7}$	OAL	l_4	LDRED	BDRED	H	l_5	Y5 Article no. 73 522 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	EUR	
08	8,00/16.N.12.1,0	7,8	16	80	60	12	6,0	15,0	5	83,15	012
	8,00/16.N.22.1,0	7,8	16	90	60	22	6,0	15,0	5	95,32	122
09	9,00/16.N.14.1,8	8,6	16	95	60	14	7,4	15,0	5	84,20	014
	9,00/16.N.25.1,8	8,6	16	105	60	25	7,4	15,0	5	96,57	125
11	11,00/16.N.16.2,3	10,7	16	97	60	16	8,0	14,5	5	83,15	016
	11,00/16.N.29.2,3	10,7	16	110	60	29	8,0	14,5	5	95,32	129
14	14,00/16.N.18.4,0	13,8	16	100	60	18	11,0	14,5	5	95,32	018
	14,00/16.N.38.4,0	13,8	16	120	60	38	11,0	14,5	5	95,32	138
16	16,00/16.N.22.4,3	15,7	16	100	60	22	11,0	14,5	5	83,15	022
	16,00/16.N.42.4,3	15,7	16	120	60	42	11,0	14,5	5	95,32	142

Spare parts

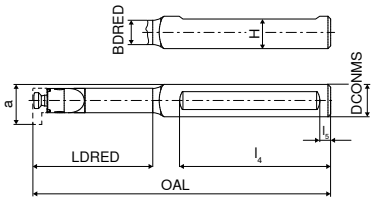

Key D

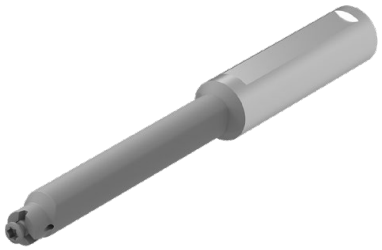

Clamping screw

Size		Y7 Article no. 80 950 ... EUR			Y5 Article no. 73 082 ... EUR	
08	T08	7,80	110	M2,6	3,15	002
09	T08	7,80	110	M2,6	3,15	002
11	T10	9,14	112	M3,5	3,15	003
14	T15	9,28	113	M4	3,15	004
16	T20	9,95	114	M5	3,15	005

12

MiniCut – Solid Carbide Tool holder – vibration damped



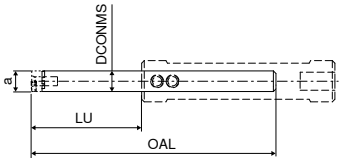


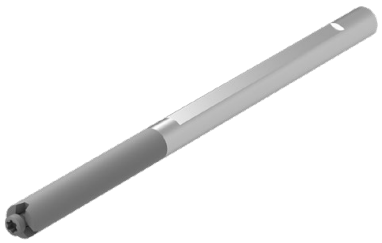
Size	Designation	a	DCONMS $_{f7}$	OAL	l_4	LDRED	BDRED	H	l_5	Y5 Article no. 73 520 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	EUR	
08	8,00/12.N.21.1,0 HM	7,8	12	80	48	21	6,0	11,0	5	134,20	021
	8,00/12.N.30.1,0 HM	7,8	12	90	48	30	6,0	11,0	5	145,70	030
	8,00/12.N.42.1,0 HM	7,8	12	100	48	42	6,0	11,0	5	172,00	042
	8,00/12.N.50.1,0 HM	7,8	12	115	48	50	6,0	11,0	5	195,00	050
09	9,00/12.N.22.1,0 HM	8,6	12	90	60	22	7,4	11,0	5	151,00	222
	9,00/12.N.30.2,0 HM	8,6	12	98	60	30	7,4	11,0	5	176,20	230
	9,00/12.N.42.3,0 HM	8,6	12	110	60	42	7,4	11,0	5	198,20	242
	9,00/12.N.56.4,0 HM	8,6	12	122	60	56	7,4	11,0	5	224,40	256
11	11,00/12.N.29.2,3 HM	10,7	12	95	60	29	8,0	10,5	5	134,20	129
	11,00/12.N.42.2,3 HM	10,7	12	110	60	42	8,0	10,5	5	145,70	142
	11,00/12.N.56.2,3 HM	10,7	12	120	60	56	8,0	10,5	5	172,00	156
	11,00/12.N.64.2,3 HM	10,7	12	130	60	64	8,0	10,5	5	195,00	164
14	14,00/12.N.34.4,0 HM	13,8	12	100	60	34	11,0	10,5	5	163,60	234
	14,00/12.N.45.4,0 HM	13,8	12	110	60	45	11,0	10,5	5	184,50	245
	14,00/12.N.64.4,0 HM	13,8	12	130	60	64	11,0	10,5	5	219,20	264
	14,00/16.N.34.4,0 HM	13,8	16	100	60	34	11,0	14,5	5	191,90	334
	14,00/16.N.45.4,0 HM	13,8	16	110	60	45	11,0	14,5	5	220,20	345
	14,00/16.N.64.4,0 HM	13,8	16	130	60	64	11,0	14,5	5	250,60	364
	14,00/16.N.75.4,0 HM	13,8	16	145	60	75	11,0	14,5	5	268,50	375
16	16,00/12.N.40.4,3 HM	15,7	12	130	60	40	11,0	10,5	5	174,10	440
	16,00/12.N.56.4,3 HM	15,7	12	130	60	56	11,0	10,5	5	184,50	456
	16,00/12.N.80.4,3 HM	15,7	12	150	60	80	11,0	10,5	5	219,20	480
	16,00/16.N.40.4,3 HM	15,7	16	130	60	40	11,0	14,5	5	220,20	540
	16,00/16.N.56.4,3 HM	15,7	16	130	60	56	11,0	14,5	5	220,20	556
	16,00/16.N.80.4,3 HM	15,7	16	150	60	80	11,0	14,5	5	250,60	580

Spare parts

Size	Y7 Key D Article no. 80 950 ...		Y5  Clamping screw Article no. 73 082 ...	
	EUR		EUR	
08	T08 7,80	110	M2,6 3,15	002
09	T08 7,80	110	M2,6 3,15	002
11	T10 9,14	112	M3,5 3,15	003
14	T15 9,28	113	M4 3,15	004
16	T20 9,95	114	M5 3,15	005

MiniCut – HM – Flexoholder





Size	Designation	DCONMS mm	OAL mm	LU mm	a mm	Y5 Article no. 73 525 ...	EUR	
08	8,0/6.N16/2	6	65	18	8		212,90	818
	8,0/6.N40/4	6	103	40	8		242,20	840
11	11,0/8.N20/2	8	79	20	11		269,50	120 1)
	11,0/8.N50/4	8	129	50	11		306,20	150 1)

1) with thro' coolant


Key D

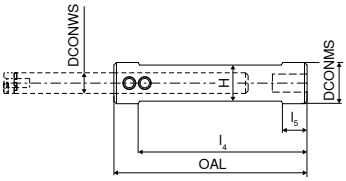
Y7


Clamping screw

Y5

Spare parts Size		Article no. 80 950 ... EUR			Article no. 73 082 ... EUR	
08	T08	7,80	110	M2,6	3,15	002
11	T10	9,14	112	M3,5	3,15	003

MiniCut – Base holder for solid carbide Flexoholder





Size	Designation	DCONWS mm	DCONMS mm	H mm	OAL mm	l_4 mm	l_5 mm	Y5 Article no. 73 526 ...	EUR	
08	8/16.75	6	16	14	75	55	10		127,90	816
	8/20.90	6	20	18	90	70	10		127,90	820
11	11/16.75	8	16	14	75	55	10		127,90	116
	11/20.90	8	20	18	90	70	10		127,90	120


Key I

2A/28


Clamping screw

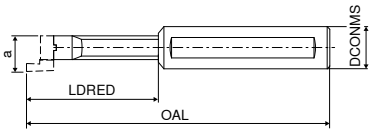
Y5

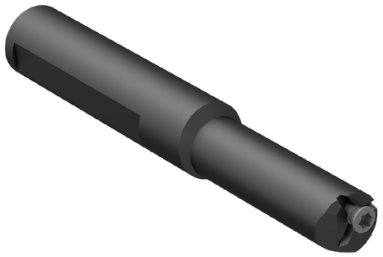
Spare parts for Article no.		Article no. 70 950 ... EUR			Article no. 73 082 ... EUR	
73 526 816	SW2,5	2,45	175	M5x0,5x6	2,96	010
73 526 820	SW2,5	2,45	175	M5x0,5x6	2,96	010
73 526 116	SW2,5	2,45	175	M5x0,5x4	2,96	009
73 526 120	SW2,5	2,45	175	M5x0,5x6	2,96	010

12

MiniCut – Steel holder

▲ for axial machining





Illustrations show right-hand versions

Size	Designation	a	DCONMS	OAL	LDRED	Left-hand Y5 Article no. 73 523 ... EUR		Right-hand Y5 Article no. 73 524 ... EUR	
		mm	mm	mm	mm				
14	14,0/16. R/L .25.1,0	13,5	16	90	25	114,30	025	114,30	025
	14,0/16. R/L .45.1,0	13,5	16	110	45	121,60	145	121,60	145



Key D

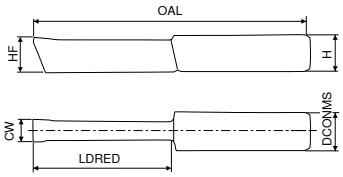


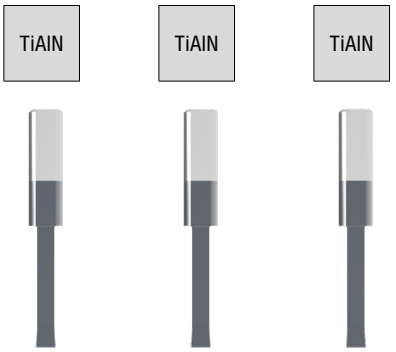
Clamping screw

Spare parts		Y7 Article no. 80 950 ... EUR			Y5 Article no. 73 082 ... EUR	
Size						
14	T15	9,28	113	M4	3,15	004

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





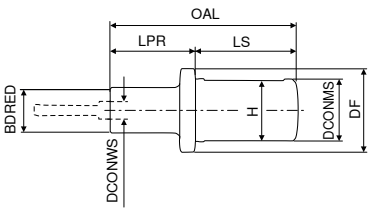
Designation	$b_{1\ P9/JS9/C11}$ mm	CW mm	HF mm	RE mm	OAL mm	LDRED mm	DAXN mm	$DCONMS_{h6}$ mm	H mm	clamping holder	Y5 Article no. 73 600 ... EUR		Y5 Article no. 73 601 ... EUR		Y5 Article no. 73 602 ... EUR	
NPU.0198.01.1	2	1,98	5,5	0,10	38	12,5	6	7	6,3	NHU					42,98	099
NPU.0200.01.1	2	2,01	5,5	0,10	38	12,5	6	7	6,3	NHU			42,98	099		
NPU.0210.03.1	2	2,10	5,5	0,35	38	12,5	6	7	6,3	NHU	42,98	098				
NPU.0298.01.1	3	2,98	6,2	0,10	38	12,5	7	7	6,3	NHU					42,98	100
NPU.0300.01.1	3	3,01	6,2	0,10	38	12,5	7	7	6,3	NHU			42,98	100		
NPU.0310.03.1	3	3,10	6,2	0,35	38	12,5	7	7	6,3	NHU	42,98	099				
NPU.0310.05.1	3	3,10	6,2	0,50	38	12,5	7	7	6,3	NHU	42,98	100				
NPU.0398.01.1	4	3,98	6,2	0,10	40	15,0	7	7	6,3	NHU					41,22	101
NPU.0398.02.2	4	3,98	6,2	0,20	50	25,0	7	7	6,3	NHU					54,01	102
NPU.0400.01.1	4	4,01	6,2	0,10	40	15,0	7	7	6,3	NHU			41,22	101		
NPU.0400.02.1	4	4,01	6,2	0,20	40	15,0	7	7	6,3	NHU			41,22	102		
NPU.0400.02.2	4	4,01	6,2	0,20	50	25,0	7	7	6,3	NHU			54,01	103		
NPU.0410.05.1	4	4,10	6,2	0,50	40	15,0	7	7	6,3	NHU	41,22	101				
NPU.0410.05.2	4	4,10	6,2	0,50	50	25,0	7	7	6,3	NHU	54,01	102				
NPU.0498.02.2	5	4,98	5,8	0,20	50	25,0	7	7	6,3	NHU					54,01	103
NPU.0500.02.2	5	5,01	5,8	0,20	50	25,0	8	7	6,3	NHU			54,01	104		

Tolerance **C 11** for 73 600 ..., Tolerance **JS 9** for 73 601 ..., Tolerance **P 9** for 73 602 ...

SlotCut – Toolholder for broaching inserts

Scope of supply:

Tool holder with clamping screw, without insert





12

Designation	DCONWS mm	BDRED mm	$DCONMS_{g6}$ mm	DF mm	OAL mm	LS mm	LPR mm	H mm	Inserts	Y5 Article no. 73 610 ... EUR	
NHU.25	7	18	25	33	73	40	33	23	NPU	215,00	025
NHU.32	7	20	32	40	73	40	33	30	NPU	224,40	032

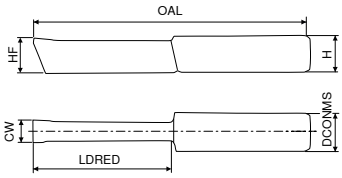

Key I

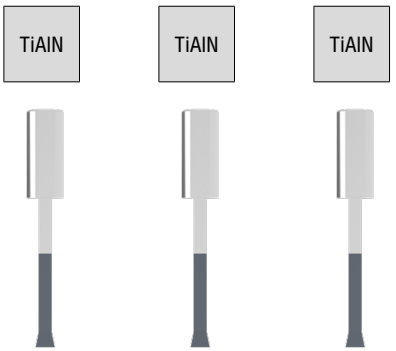

Clamping screw

Spare parts for Article no.		2A/28 Article no. 70 950 ... EUR		Y5 Article no. 73 082 ... EUR	
73 610 025	SW2,5	2,45	175	M5x6	2,90	001
73 610 032	SW2,5	2,45	175	M5x6	2,90	001

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





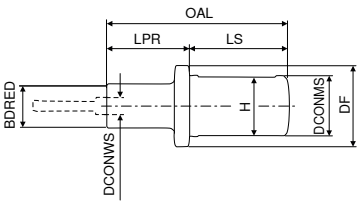
Designation	$b_{1\ JS\,9/P\,9/C\,11}$ mm	CW mm	HF mm	RE mm	OAL mm	LDRED mm	DAXN mm	$DCONMS_{h6}$ mm	H mm	clamping holder	Y5 Article no. 73 606 ... EUR		Y5 Article no. 73 607 ... EUR		Y5 Article no. 73 608 ... EUR	
NP10.398.02.2	4	3,98	9	0,2	50	25	10	10	9,2	NH 10			60,07	**101**		
NP10.398.02.3	4	3,98	9	0,2	66	41	10	10	9,2	NH 10			75,17	**102**		
NP10.400.02.2	4	4,01	9	0,2	50	25	10	10	9,2	NH 10					60,07	**101**
NP10.400.02.3	4	4,01	9	0,2	66	41	10	10	9,2	NH 10					75,17	**102**
NP10.410.05.2	4	4,10	9	0,5	50	25	10	10	9,2	NH 10	60,07	**101**				
NP10.410.05.3	4	4,10	9	0,5	66	41	10	10	9,2	NH 10	75,17	**102**				
NP10.498.02.2	5	4,98	9	0,2	50	25	10	10	9,2	NH 10			60,07	**103**		
NP10.498.02.3	5	4,98	9	0,2	66	41	10	10	9,2	NH 10			75,17	**104**		
NP10.500.02.2	5	5,01	9	0,2	50	25	10	10	9,2	NH 10					60,07	**103**
NP10.500.02.3	5	5,01	9	0,2	66	41	10	10	9,2	NH 10					75,17	**104**
NP10.510.05.2	5	5,10	9	0,5	50	25	10	10	9,2	NH 10	60,07	**103**				
NP10.510.05.3	5	5,10	9	0,5	66	41	10	10	9,2	NH 10	75,17	**104**				

Tolerance **C 11** for 73 606 ..., Tolerance **P 9** for 73 607 ..., Tolerance **JS 9** for 73 608 ...

SlotCut – Toolholder for Cutting Inserts

Scope of supply:

Tool holder with clamping screw, without insert





Designation	DCONWS mm	BDRED mm	$DCONMS_{g6}$ mm	DF mm	OAL mm	LS mm	LPR mm	H mm	Inserts	Y5 Article no. 73 612 ... EUR	
NH10.0025.1	10	20	25	33	73	40	33	23	NP10	215,00	**025**
NH10.0032.1	10	20	32	40	73	40	33	30	NP10	215,00	**032**

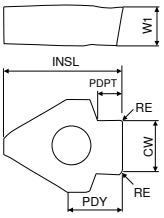

Key I

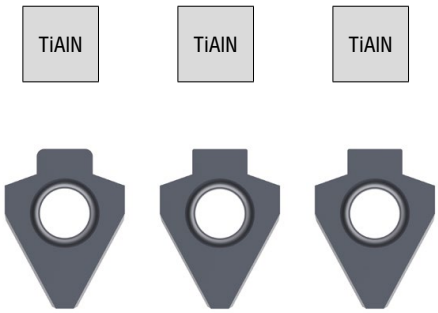

Grubscrew

Spare parts for Article no.		2A/28 Article no. 70 950 ... EUR			Y5 Article no. 70 950 ... EUR	
73 612 032	SW03	2,45	**176**	M6x5,5	3,44	**031**
73 612 025	SW03	2,45	**176**	M6x5,5	3,44	**031**

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





Designation	$b_{1\ P9/JS9/C11}$	CW	RE	PDY	INSL	PDPT	DAXN	W1	clamping holder	Y5 Article no. 73 603 ...		Y5 Article no. 73 604 ...		Y5 Article no. 73 605 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
NV15.0398.02	4	3,98	0,20	6,5	13,0	2,3	15	3,2	NHV 15					38,14	110
NV15.0401.02	4	4,01	0,20	6,5	13,0	2,3	15	3,2	NHV 15			38,14	110		
NV15.0410.050	4	4,10	0,50	6,5	13,0	2,2	15	3,2	NHV 15	38,14	108				
NV15.0498.02	5	4,98	0,20	6,5	13,0	2,8	15	3,2	NHV 15					38,14	111
NV15.0501.02	5	5,01	0,20	6,5	13,0	2,8	15	3,2	NHV 15			38,14	111		
NV15.0510.050	5	5,10	0,50	6,5	13,0	2,5	15	3,2	NHV 15	38,14	109				
NV15.0598.02	6	5,98	0,20	6,5	13,0	3,3	15	3,2	NHV 15					38,14	112
NV15.0601.02	6	6,01	0,20	6,5	13,0	3,3	15	3,2	NHV 15			38,14	112		
NV15.0612.085	6	6,12	0,85	6,5	13,0	2,6	15	3,2	NHV 15	38,14	110				
NPV.0498.02	5	4,98	0,20	8,0	17,3	2,7	22	5,3	NHV 22					38,14	100
NPV.0501.02	5	5,01	0,20	8,0	17,3	2,7	22	5,3	NHV 22			38,14	100		
NPV.0598.02	6	5,98	0,20	8,0	17,3	3,4	22	5,3	NHV 22					38,14	101
NPV.0601.02	6	6,01	0,20	8,0	17,3	3,4	22	5,3	NHV 22			38,14	101		
NPV.0612.085	6	6,12	0,85	8,0	17,3	2,6	22	5,3	NHV 22	38,14	101				
NPV.0713.085	7	7,13	0,85	8,0	17,3	3,3	22	5,3	NHV 22	38,14	102				
NPV.0798.02	8	7,98	0,20	8,0	17,3	4,1	22	5,3	NHV 22/30					38,14	102
NPV.0801.02	8	8,01	0,20	8,0	17,3	4,1	22	5,3	NHV 22/30			38,14	102		
NPV.0813.105	8	8,13	1,05	8,0	17,3	3,4	22	5,3	NHV 22/30	38,14	103				
NPV.0998.03	10	9,98	0,30	8,0	17,3	4,2	30	5,3	NHV 30					38,14	103
NPV.1001.03	10	10,01	0,30	8,0	17,3	4,2	30	5,3	NHV 30			38,14	103		
NPV.1013.105	10	10,13	1,05	10,9	20,2	4,2	40	5,3	NHV 38	38,14	104				
NPV.1197.03	12	11,97	0,30	10,9	20,2	5,7	40	5,3	NHV 38					38,14	104
NPV.1202.05	20	12,02	0,50	10,9	20,2	8,5	40	5,3	NHV 38			38,14	105		
NPV.1202.03	12	12,02	0,30	10,9	20,2	5,7	40	5,3	NHV 38			38,14	104		
NPV.1215.135	12	12,15	1,35	10,9	20,2	5,1	40	5,3	NHV 38	38,14	105				
NPV.1215.175	16	12,15	1,75	10,9	20,2	6,6	40	5,3	NHV 38	38,14	106				
NPV.1215.225	24	12,15	2,25	10,9	20,2	8,5	40	5,3	NHV 38	38,14	107				
NPV.1397.03	14	13,97	0,30	10,9	20,1	7,5	45	5,3	NHV 45					43,20	106
NPV.1402.03	14	14,02	0,30	10,9	20,1	7,5	45	5,3	NHV 45			43,20	106		
NPV.1597.03	16	15,97	0,30	10,9	20,1	7,5	45	5,3	NHV 45					43,20	107
NPV.1602.03	16	16,02	0,30	10,9	20,1	7,5	45	5,3	NHV 45			43,20	107		
NPV.1797.05	18	17,97	0,50	10,9	20,1	9,5	45	5,3	NHV 45					43,20	108
NPV.1802.05	18	18,02	0,50	10,9	20,1	9,5	45	5,3	NHV 45			43,20	108		
NPV.1997.05	20	19,97	0,50	10,9	20,1	10,0	45	5,3	NHV 45					43,20	109
NPV.2002.05	20	20,02	0,50	10,9	20,1	10,0	45	5,3	NHV 45			43,20	109		

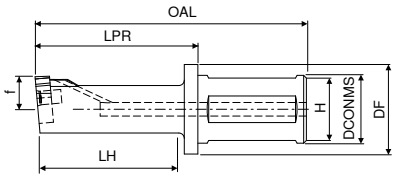
Tolerance **C 11** for 73 603 ..., Tolerance **JS 9** for 73 604 ..., Tolerance **P 9** for 73 605 ...

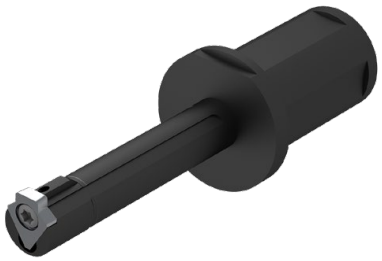
12

SlotCut – Toolholder for inserts

Scope of supply:
Tool holder with clamping screw, without insert



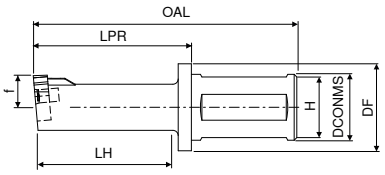


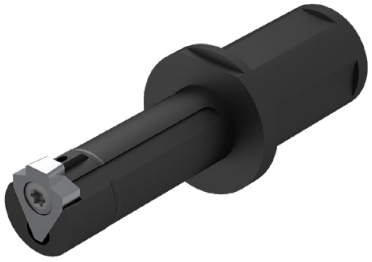


Designation	DCONMS g6 mm	DAXN mm	DF mm	OAL mm	LH mm	LPR mm	H mm	f mm	Inserts	Y5 Article no. 73 613 ... EUR	
NHV.15.1	25	15	33	75	25	35	23	8,4	NV15	184,50	**025**
NHV.15.2	25	15	33	90	40	50	23	8,4	NV15	202,40	**125**
NHV.15.3	25	15	33	110	60	70	23	8,4	NV15	230,70	**225**

SlotCut – Toolholder for inserts

Scope of supply:
Tool holder with clamping screw, without insert





Designation	DCONMS g6 mm	DAXN mm	DF mm	OAL mm	LH mm	LPR mm	H mm	f mm	Inserts	Y5 Article no. 73 611 ... EUR	
NHV.22	25	22	33	100	50	60	23	12,0	NPV	201,40	**025**
NHV.30	32	30	45	100	50	60	30	16,5	NPV	201,40	**032**
NHV.30	32	30	45	125	75	85	30	16,5	NPV	228,50	**532**
NHV.38	32	38	45	100	50	60	30	22,0	NPV	201,40	**132**
NHV.38	32	38	45	125	75	85	30	22,0	NPV	228,50	**632**
NHV.45	40	45	55	120	50	60	38	24,0	NPV	272,60	**040**
NHV.45	40	45	55	175	105	115	38	24,0	NPV	369,10	**140**
NHV.45	40	45	55	225	155	165	38	24,0	NPV	416,20	**240**

Spare parts DCONMS g6		Y7  Key D Article no. 80 950 ... EUR			Y5  Clamping screw Article no. 73 082 ... EUR	
25	T20	9,95	**114**	M5x13	4,27	**007**
32	T20	9,95	**114**	M5x13	4,27	**007**
40	T20	9,95	**114**	M5x13	4,27	**007**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data appoximate values

Index	UltraMini K10F	UltraMini K10F-TiN	UltraMini K10-TiAN	UltraMini DPX 57S	MiniCut CWX500	UltraMini TiAlN+	MiniCut CBN
	v_c in m/min						
1.1	30–130	**30–180**	**80–200**	**80–200**	**80–200**		
1.2	30–130	**40–200**	**80–200**	**80–200**	**80–200**		
1.3	30–130	**40–180**	**80–200**	**80–200**	**80–200**		
1.4	15–90	**30–140**	**80–160**	**80–160**	**80–160**		
1.5	15–90	**30–100**		**80–140**			
1.6	15–90	**30–100**	**80–160**	**80–160**	**80–160**		
1.7	30–130	**30–100**	**80–160**	**80–160**	**80–160**		
1.8	15–90	**30–100**	**80–150**	**80–150**	**80–150**		
1.9	30–130	**40–200**	**80–200**	**80–200**	**80–200**		
1.10	15–90	**30–100**	**70–140**	**70–140**	**70–140**		
1.11	15–90	**30–100**	**70–140**	**70–140**	**70–140**		
1.12	15–90	**30–100**	**70–140**	**70–140**	**70–140**		
1.13							
1.14							
1.15	15–45	**30–100**					
1.16	15–45	**30–100**					
2.1		**30–100**	**80–160**	**80–160**	**80–160**		
2.2		**30–100**	**80–160**	**80–160**	**80–160**		
2.3		**30–100**	**80–160**	**80–160**	**80–160**		
2.4		**20–90**	**20–85**	**20–85**	**20–85**		
2.5		**20–65**	**20–75**	**20–75**	**20–75**		
2.6		**20–80**	**20–65**	**20–65**	**20–65**		
2.7		**20–80**	**20–65**	**20–65**	**20–65**		
3.1	30–110	70–150	**30–180**	**30–180**	**30–180**		
3.2	30–90	50–120	**30–150**	**30–150**	**30–150**		
3.3	25–110	30–130	**30–180**	**30–180**	**30–180**		
3.4	25–80	30–110	**30–120**	**30–120**	**30–120**		
3.5	30–110	30–100	**30–90**	**30–90**	**30–90**		
3.6	30–90	30–90	**20–80**	**20–80**	**20–80**		
3.7	30–110	30–100	**30–90**	**30–90**	**30–90**		
3.8	30–90	30–90	**20–80**	**20–80**	**20–80**		
4.1	**110–210**	100–600	**120–600**	**120–600**	**120–600**		
4.2	**90–200**	100–600	**120–600**	**120–600**	**120–600**		
4.3	**90–200**	100–500	**100–450**	**100–450**	**100–450**		
4.4	**50–140**	80–350	**70–300**	**70–300**	**70–300**		
4.5		80–200	**60–150**	**60–150**	**60–150**		
4.6	**50–140**	70–160	**60–150**	**60–150**	**60–150**		
4.7	**60–150**	80–180	**100–180**	**100–180**	**100–180**		
4.8	**50–140**	80–180	**90–180**	**90–180**	**90–180**		
4.9	**50–140**	80–180	**80–180**	**80–180**	**80–180**		
4.10	**50–140**	80–180	**80–180**	**80–180**	**80–180**		
4.11	**80–160**	100–200	**120–220**	**120–220**	**120–220**		
4.12	**50–120**	80–180	**70–150**	**70–150**	**70–150**		
4.13	**40–120**	70–160	**80–180**	**80–180**	**80–180**		
4.14							
4.15							
4.16							
4.17							
4.18	**15–70**						
4.19							
5.1		30–80	**30–80**	30–80	**30–80**		
5.2		18–75	**18–75**	18–75	**18–75**		
5.3		18–75	**18–75**	18–75	**18–75**		
5.4				40–70		**55–75**	
5.5		18–40	**18–40**	40–70	**18–40**	**55–75**	
5.6		18–40	**18–40**	40–70	**18–40**	**55–75**	
5.7		15–30	**15–30**	40–70	**15–30**	**55–75**	
5.8		15–30	**15–30**	40–70	**15–30**	**55–75**	
5.9		15–30	**15–30**	**70–150**	**15–30**		
5.10				**70–150**			
5.11				**70–150**			
6.1							
6.2						**70–100**	
6.3						**70–100**	**50**
6.4						**70–100**	**50**
6.5							

	UltraMini	MiniCut
	f in mm/rev.	
Internal turning and profiling	0,02–0,05	0,03–0,10
Internal turning and profiling – hard turning	0,02–0,06	0,03–0,10
Turning and profile turning – super alloys	0,02–0,08	
Internal turning	0,02–0,05	0,01–0,03
Back boring	0,02–0,04	0,03–0,10
Turning and chamfering	0,01–0,03	0,03–0,10
Pre-parting and chamfering	0,01–0,02	0,01–0,03
Groove turning	0,01–0,02	0,01–0,03
Internal Undercuts	0,01–0,03	0,03–0,08
Groove and profile turning	0,01–0,02	0,01–0,03
Axial grooving	0,02–0,05	0,02–0,05

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values – 73 000 ... / 73 001 ...

Index	UltraMini DPX77S	Corner radius in mm			
		0,05	0,1	0,15	0,2
	v_c in m/min	f in mm/rev.			
1.1	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.2	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.3	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.4	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.5	80–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.6	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.7	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.8	80–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.9	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.10	70–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.11	70–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.12	70–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.13					
1.14					
1.15					
1.16					
2.1	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.2	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.3	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.4	20–85	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.5	20–75	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.6	20–65	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.7	20–65	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.1	30–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.2	30–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.3	30–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.4	30–120	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.5	30–90	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.6	20–80	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.7	30–90	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.8	20–80	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.1	120–600	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.2	120–600	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.3	100–450	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.4	70–300	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.5	60–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.6	60–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.7	100–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.8	90–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.9	80–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.10	80–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.11	120–220	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.12	70–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.13	80–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1	30–80	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.2	18–75	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.3	18–75	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.4	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.5	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.6	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.7	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.8	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.9	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.10	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.11	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

12

Broaching – Recommendations for Correct Use

SlotCut

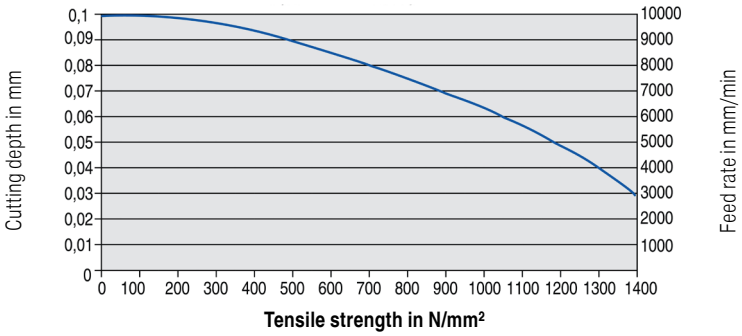
More and more often small and medium sized batch sizes are manufactured with precision grooves.

To directly machine such grooves in one set-up on one machine, it requires a special application of "Broaching" tools.

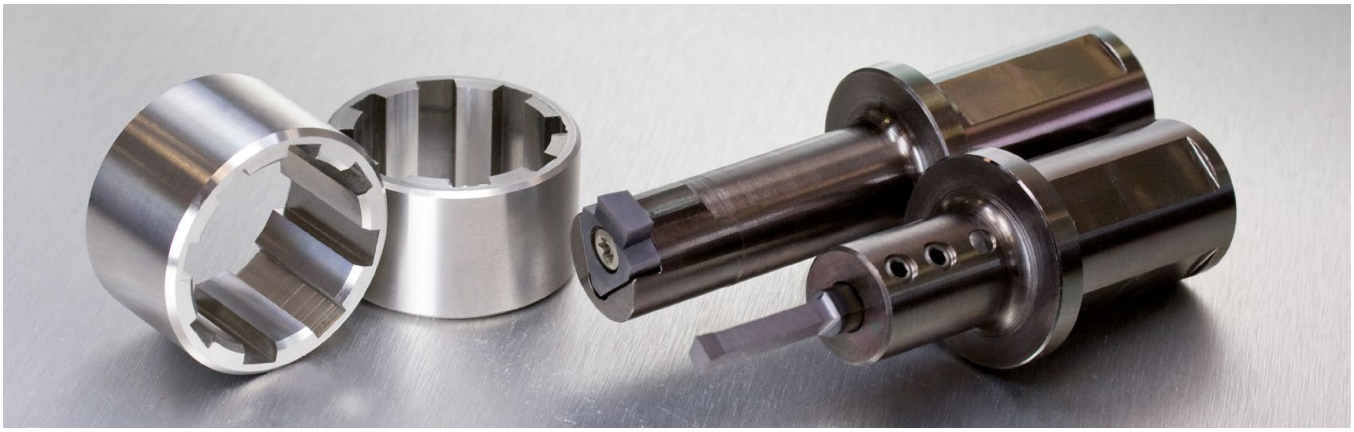
The SlotCut system can produce grooves with the most common groove tolerances.
To this end, there are four options. Two concepts are based on a solid carbide solution, which gives great success with small diameters.
For larger diameters, the concept with screw-on inserts is more suitable.

Broaching, on both lathes and machining centers is now economical, and provides highly accurate results in the shortest possible time.

Appoximate values when broaching



The data depends strongly on the conditions and represent only an appoximate value, factors such as machine stability, application and material may require adjustment of the data upward or downward.



Tips for the User

- Avoid interrupted cuts.
- Where possible, orientate the part so the groove is at the top, so the chips fall away!
- Ensure there is a relief at the end of the groove.
- Lift the tool out of the groove when retracting.
- Use coolant.
  This will increase tool life and surface quality.
- Adjustment of the tool is essential, therefore the tool diameter must be considered.



Symbol explanation

UltraMini

 Internal turning and profiling

 Back boring

 Internal Undercuts

 High-feed turning

 Turning and chamfering

 Groove and profile turning

 Turning and profile turning – super alloys

 Pre-parting and chamfering

 Internal thread turning

 Internal turning

 Groove turning

 Axial grooving

MiniCut

 Internal turning and profiling

 Pre-parting and chamfering

 Internal thread turning

 Internal turning

 Groove turning

 Axial grooving

 Back boring

 Internal Undercuts

 Turning and chamfering

 Groove and profile turning

Coatings

TiAlN+
- ▲ TiAlN multilayer coating
- ▲ Maximum application temperature: 1000 °C

TiN
- ▲ TiN coating
- ▲ Maximum application temperature: 450 °C

TiAlN
- ▲ TiAlN multilayer coating
- ▲ Maximum application temperature: 900 °C

CWX500
- ▲ Carbide, TiAlN-coated
- ▲ ISO | **K30**
- ▲ The universal carbide grade for almost all materials

DXP77S
- ▲ TiAlN+X-coating
- ▲ Maximum application temperature: 900 °C

DPX57S
- ▲ TiCrN coating
- ▲ Maximum application temperature: 900 °C

Thread types

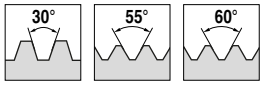
M Metric ISO standard thread

MF Metric ISO fine thread

G Whitworth thread

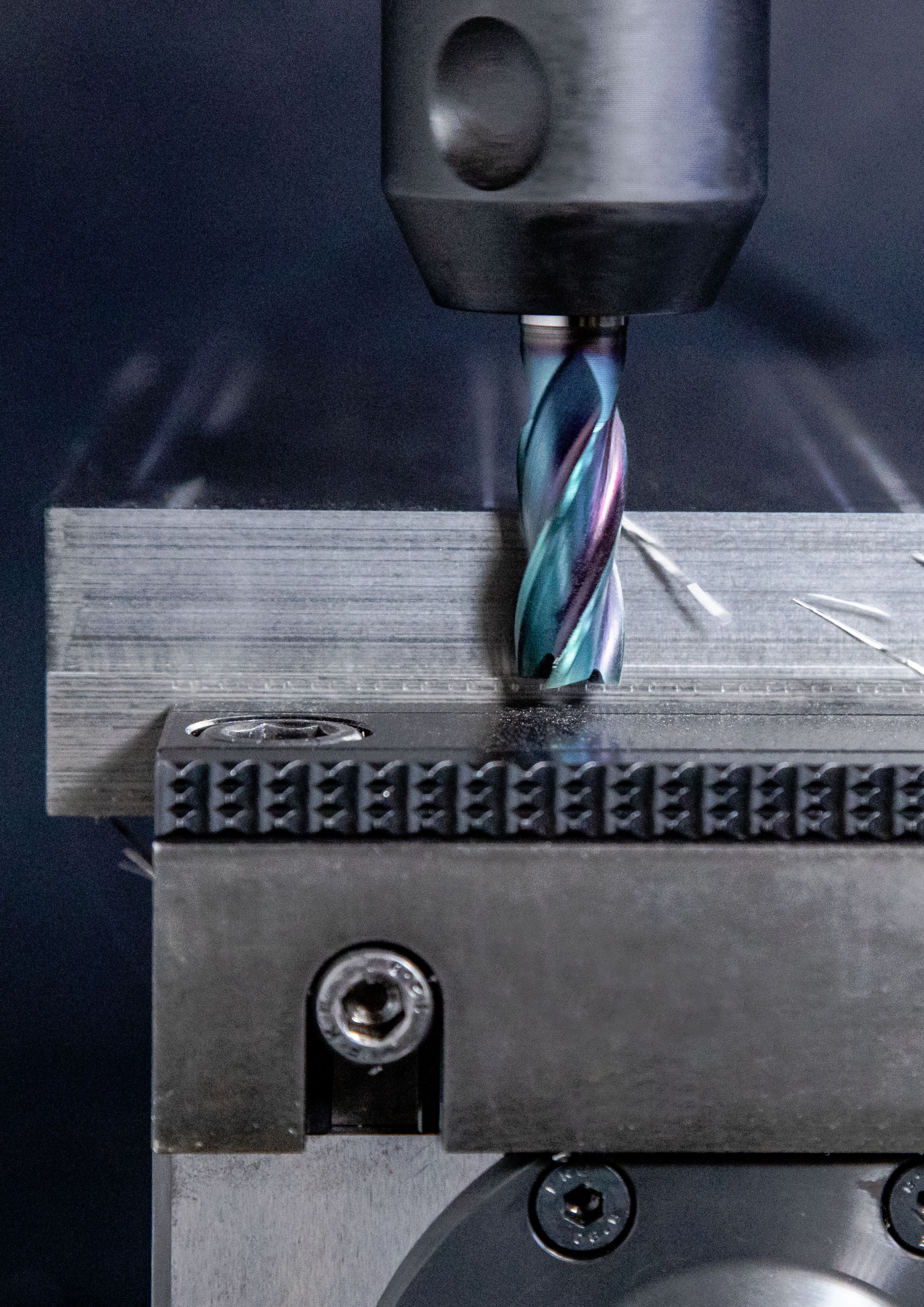
Tr Metric ISO trapezoidal fine thread

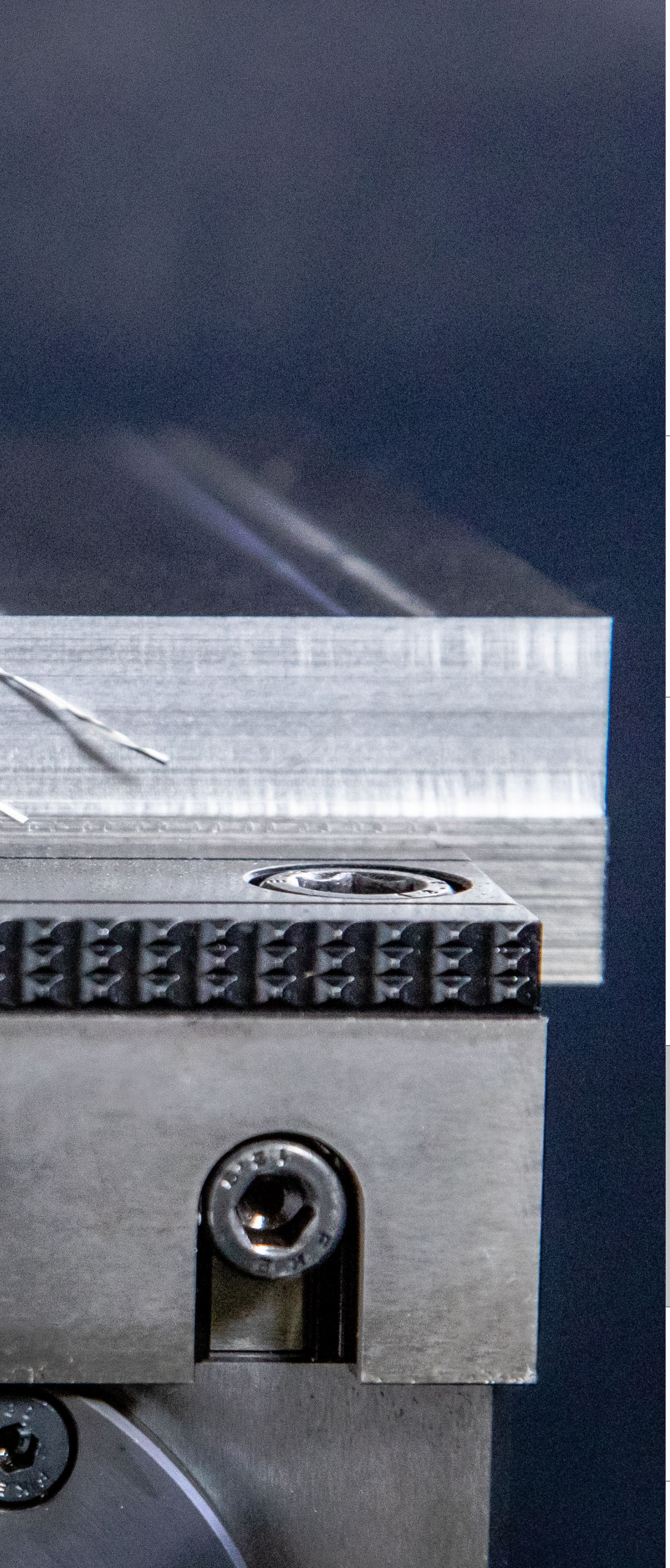
Thread flank angle



Coolant

 with thro‘ coolant





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder	3
Contents Overview	4+5
Product programme	6–38
Technical Information	
Cutting Data	39–46
Formula for cutting data calculation	47
Coating	47

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

Shank



Shank type



Length: extra short / short / medium / long / extra long



Cutting edge preparation



Sharp



Chamfer (CHW = chamfer width in mm)



Full Radius



Application



Machining example



The red arrows describe the possible feed directions



Number of teeth



Cutting geometry
λ_s = helix angle
γ_s = rake angle

● = **Main Application**

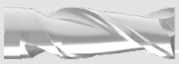
○ = Extended application

Toolfinder

softer — Material to machine — harder

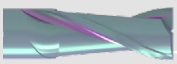
Finish milling

W


6+7


37

N


8–15


25

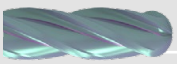

28+29


31


33+34


37

H

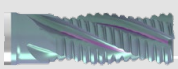

26


32

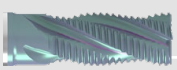

35+36

Rough and finish machining

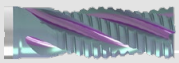
NTI


16

HS


18

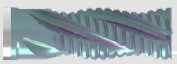
NF


17


30

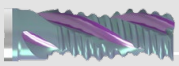

37

HF

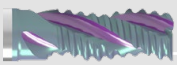

19

Rough machining

WR

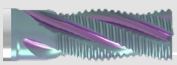

20

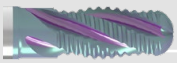
NR


21+22


38

HR

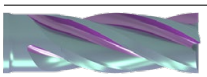
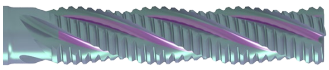
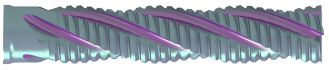
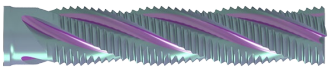
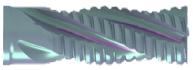
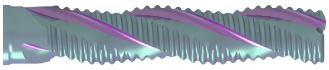
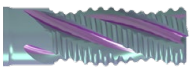
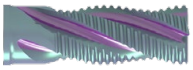
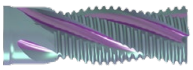

23+24


27

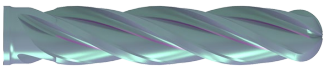
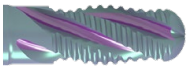
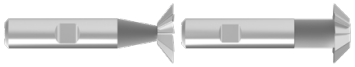
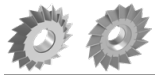
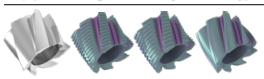

38

13

Overview HSS milling cutters

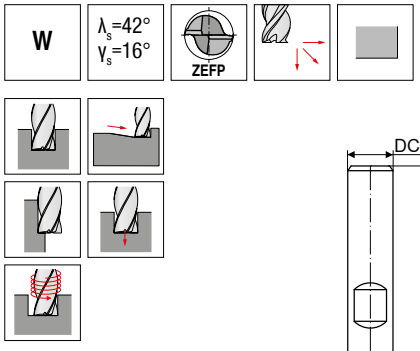
	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Material, e.g. PM = Powdersteel	coated	uncoated	WNT \ Performance
Finishing cutter																		
	W	2	2–22				●			■					HSS-E		□	6
	W	3–4	2–40				●			■					HSS-E		□	7
	N	2	1–26	●	●	●	○	○		■					HSS-E	■	□	8+9
	N	3	1–10	●	●	●	○	○		■					HSS-E	■	□	10
	N	3	1,8–24,7	●	●	●	○	○		■					HSS-E	■	□	11+12
	N	4–5	4–25	○	●	○	●	●		■					HSS-E	■	□	13
	N	4–8	2–50	●	●	●	○	○		■					HSS-E	■	□	14+15
Rough and finish milling cutters																		
	NTI	4–6	6–40	○	●	○	○	●			■				PM	■		16
	NF	4–5	6–28	●	○	●	○	○		■					HSS-E	■		17
	HS	4–6	6–40	○		●		●			■				PM	■		18
	HF	4	6–25	●	○	●	○	○		■					PM	■		19
Rough milling cutters																		
	WR	3	6–32				●			■					HSS-E	■		20
	NR	3	6–25	●	○	●	○	○			■				HSS-E	■	□	21
	NR	4–6	6–40	●	○	●	○	○			■				HSS-E	■	□	22
	HR	4–6	6–32	●	●	●	○	○			■				PM	■		23
	HR	3–6	4–32	●	●	●	○	○			■				HSS-E	■	□	24

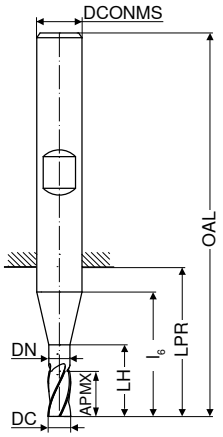
Overview HSS milling cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Material, e.g. PM = Powdersteel	coated	uncoated	WNT \ Performance
Ball nose end milling cutters																		
	N	2	2–30	●	○	●	○	○	B				◐		HSS-E	■	□	25
	H	4–5	6–25	●	○	●	○	○	B				◐		HSS-E	■	□	26
	HR	4	6–20	●	○	●	○	○	B				◐		HSS-E	■		27
Form / Side and Face / Shell milling cutters																		
	N	6–10	11–60	●	○	●	○	○	B						HSS-E		□	28
	N	6–12	10,5–45,5	●	○	●	○	○	B						HSS-E		□	29
	NF	6–8	21–45	●	○	●	○	○	B						HSS-E		□	30
	N	4–6	1–16	●	○	●	○	○	B						HSS-E		□	31
	H	10	16–25	●	○	●	○	○	B						HSS-E		□	32
	N	14–28		●	○	●	○	○							HSS		□	33
		12–52		●	●	●	●	●							HSS-E		□	34–36
		6–12		●	●	●	●	○							HSS-E	■	□	37+38

13

Slot milling cutter HSS-E Co 8









DIN 844



U6

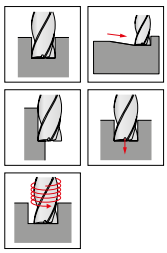
DC e8 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 144 ... EUR	
2,0	7		7	13	15	51	6	2	21,30	**020**
2,5	8		8	14	16	52	6	2	21,30	**025**
3,0	8		8	14	16	52	6	2	21,30	**030**
3,5	10		10	16	18	54	6	2	21,30	**035**
4,0	11		11	17	19	55	6	2	21,30	**040**
4,5	11		11	17	19	55	6	2	21,30	**045**
5,0	13		13	19	21	57	6	2	21,30	**050**
5,5	13		13	19	21	57	6	2	21,30	**055**
6,0	13		13	19	21	57	6	2	21,30	**060**
6,5	16	6,0	22	24	26	66	10	2	28,71	**065**
7,0	16	6,5	22	24	26	66	10	2	28,71	**070**
8,0	19	7,5	25	27	29	69	10	2	28,71	**080**
9,0	19	8,5	26	27	29	69	10	2	28,71	**090**
10,0	22	9,5	30	30	32	72	10	2	28,71	**100**
12,0	26	11,5	36	36	38	83	12	2	37,94	**120**
14,0	26	11,5	36	36	38	83	12	2	42,18	**140**
16,0	32	15,0	42	42	44	92	16	2	50,97	**160**
18,0	32	15,0	42	42	44	92	16	2	62,73	**180**
20,0	38	19,0	52	52	54	104	20	2	75,67	**200**
22,0	38	19,0	52	52	54	104	20	2	120,90	**220**

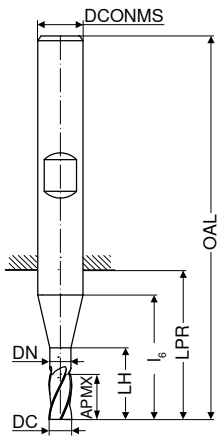
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

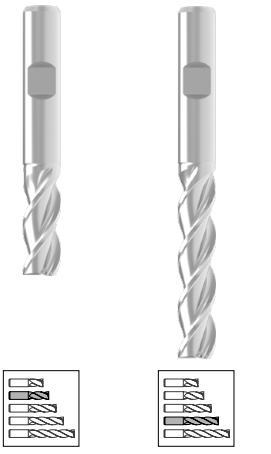
→ v_c/f_z Page 40–42

End milling cutter HSS-E Co 8









DIN 69844 | DIN 844





U8 | U8

DC k10 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 120 ... EUR		Article no. 50 121 ... EUR	
2	7		7	13	15	51	6	3	36,88	020		
3	8		8	14	16	52	6	3	35,39	030		
3	12		12	18	20	56	6	3			40,37	030
4	11		11	17	19	55	6	3	29,89	040		
4	19		19	25	27	63	6	3			41,43	040
5	13		13	19	21	57	6	3	29,89	050		
5	24		24	30	32	68	6	3			41,43	050
6	13	5,5	19	19	21	57	6	3	31,69	060		
6	24	5,5	30	30	32	68	6	3			39,31	060
7	16	6,5	22	24	26	66	10	3	41,86	070		
7	30	6,5	36	38	40	80	10	3			59,03	070
8	19	7,5	25	27	29	69	10	3	37,41	080		
8	38	7,5	44	46	48	88	10	3			47,27	080
9	19	8,5	26	27	29	69	10	3	48,54	090		
9	38	8,5	45	46	48	88	10	3			65,92	090
10	22	9,5	30	30	32	72	10	3	42,82	100		
10	45	9,5	53	53	55	95	10	3			53,31	100
12	26	11,5	36	36	38	83	12	3	50,34	120		
12	53	11,5	63	63	65	110	12	3			59,03	120
14	26	11,5	36	36	38	83	12	3	63,69	140		
14	53	11,5	63	63	65	110	12	3			68,89	140
16	32	15,0	42	42	44	92	16	3	59,77	160		
16	63	15,0	73	73	75	123	16	3			72,81	160
18	32	15,0	42	42	44	92	16	3	98,98	180		
18	63	15,0	73	73	75	123	16	3			121,90	180
20	38	19,0	52	52	54	104	20	3	97,07	200		
20	75	19,0	89	89	91	141	20	3			116,60	200
22	38	19,0	52	52	54	104	20	3	140,90	220		
22	75	19,0	89	89	91	141	20	3			174,80	220
24	90	23,0	106	108	110	166	25	3			223,60	240
25	45	24,0	63	45	65	121	25	4	154,80	250		
25	90	24,0	108	108	110	166	25	4			212,00	250
28	90	24,0	108	108	110	166	25	4			239,50	280
30	90	24,0	108	108	110	166	25	4			302,00	300
32	106	31,0	123	123	126	186	32	4			311,60	320
36	106	31,0	123	123	126	186	32	4			431,30	360
40	125	38,0	142	142	147	217	40	4			550,10	400

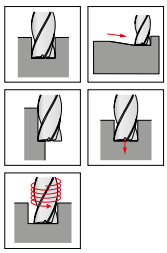
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

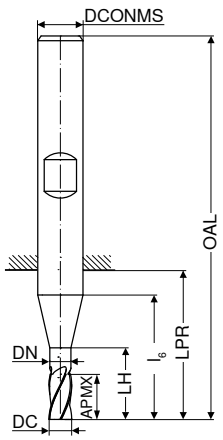
→ v_c/f_z Page 40–42

13

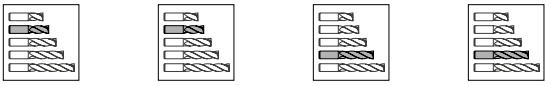
Slot milling cutter HSS-E Co 8











										DIN 327		DIN 327		Factory standard		Factory standard	
										B		B		B		B	
										U8		U8		U8		U8	
DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	Article no. 50 100 ...		Article no. 54 025 ...		Article no. 50 122 ...		Article no. 54 020 ...	
mm		mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
1,00	h10	2,5		2,5	9	11	47	6	2	31,16	010 1)	35,61	010 1)				
1,50	h10	3,0		3,0	9	11	47	6	2	29,14	015 1)	35,61	015 1)				
1,80	h10	4,0		4,0	10	12	48	6	2	14,31	018	36,35	018				
2,00	e8	4,0		4,0	10	12	48	6	2	17,07	020	29,99	020				
2,50	e8	5,0		5,0	11	13	49	6	2	17,07	025	29,99	025				
2,80	h10	5,0		5,0	11	13	49	6	2	17,07	028	31,37	028				
3,00	e8	5,0		5,0	11	13	49	6	2	15,58	030	29,99	030				
3,00	e8	8,0		8,0	18	20	56	6	2					25,01	030	44,19	030
3,50	h10	6,0		6,0	12	14	50	6	2	16,95	035	31,37	035				
3,50	h10	10,0		10,0	21	23	59	6	2					31,05	035	48,43	035
3,80	h10	7,0		7,0	13	15	51	6	2	17,70	038	34,98	038				
4,00	e8	7,0		7,0	13	15	51	6	2	15,58	040	26,38	040				
4,00	e8	11,0		11,0	25	27	63	6	2					26,81	040	44,19	040
4,50	h10	7,0		7,0	13	15	51	6	2	19,40	045	31,37	045				
4,50	h10	11,0		11,0	25	27	63	6	2					34,02	045	48,43	045
4,80	h10	8,0		8,0	14	16	52	6	2	19,40	048	34,98	048				
5,00	e8	8,0		8,0	14	16	52	6	2	15,58	050	29,99	050				
5,00	e8	13,0		13,0	30	32	68	6	2					25,97	050	44,19	050
5,50	h10	8,0		8,0	14	16	52	6	2	19,40	055	31,37	055				
5,50	h10	13,0		13,0	30	32	68	6	2					34,02	055	48,43	055
5,75	h10	8,0		8,0	14	16	52	6	2	19,50	057	34,98	057				
6,00	e8	8,0	5,50	14,0	14	16	52	6	2	15,58	060	29,99	060				
6,00	e8	13,0	5,50	30,0	30	32	68	6	2					28,40	060	42,82	060
6,50	h10	10,0	6,00	16,0	18	20	60	10	2	21,40	065	36,98	065				
6,50	h10	16,0	6,35	36,0	38	40	80	10	2					40,70	065	59,77	065
6,75	h10	10,0	6,50	16,0	18	20	60	10	2	23,95	067	39,31	067				
7,00	e8	10,0	6,50	16,0	18	20	60	10	2	22,79	070	35,61	070				
7,00	e8	16,0	6,35	36,0	38	40	80	10	2					35,71	070	55,54	070
7,50	h10	10,0	7,00	16,0	18	20	60	10	2	24,27	075	36,98	075				
7,50	h10	16,0	7,35	36,0	38	40	80	10	2					41,76	075	59,77	075
7,75	h10	11,0	7,50	17,0	19	21	61	10	2	23,95	077	39,31	077				
8,00	e8	11,0	7,50	17,0	19	21	61	10	2	20,66	080	35,61	080				
8,00	e8	19,0	7,35	44,0	46	48	88	10	2					31,05	080	54,89	080
8,50	h10	11,0	8,00	18,0	19	21	61	10	2	24,27	085	46,31	085				
8,50	h10	19,0	8,35	45,0	46	48	88	10	2					44,82	085	63,38	085
8,70	h10	11,0	8,50	18,0	19	21	61	10	2	29,78	087	49,91	087				
9,00	h10	11,0	8,50	18,0	19	21	61	10	2	23,74	090	45,68	090				
9,00	h10	19,0	8,35	45,0	46	48	88	10	2					40,70	090	64,12	090
9,50	h10	11,0	9,00	18,0	19	21	61	10	2	29,78	095	46,31	095				
9,50	h10	19,0	9,35	45,0	46	48	88	10	2					46,10	095	66,98	095
9,70	h10	13,0	9,50	21,0	21	23	63	10	2	29,04	097	49,91	097				
10,00	e8	13,0	9,50	21,0	21	23	63	10	2	22,68	100	39,96	100				
10,00	e8	22,0	9,35	53,0	53	55	95	10	2					33,70	100	57,01	100
10,50	h10	13,0	10,00	21,0	23	25	70	12	2	42,60	105	54,15	105				
10,70	h10	13,0	10,50	21,0	23	25	70	12	2	39,53	107	59,13	107				
11,00	h10	13,0	10,50	21,0	23	25	70	12	2	36,88	110	49,28	110				
11,00	h10	22,0	10,50	53,0	55	57	102	12	2					47,05	110	68,36	110
11,50	h10	13,0	11,00	21,0	23	25	70	12	2	42,39	115	54,89	115				

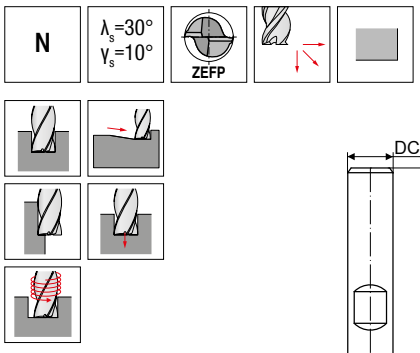
Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

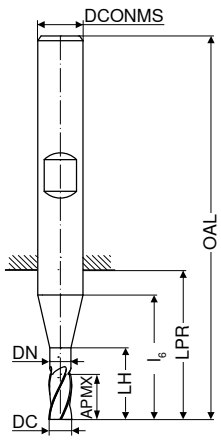
1) Factory standard

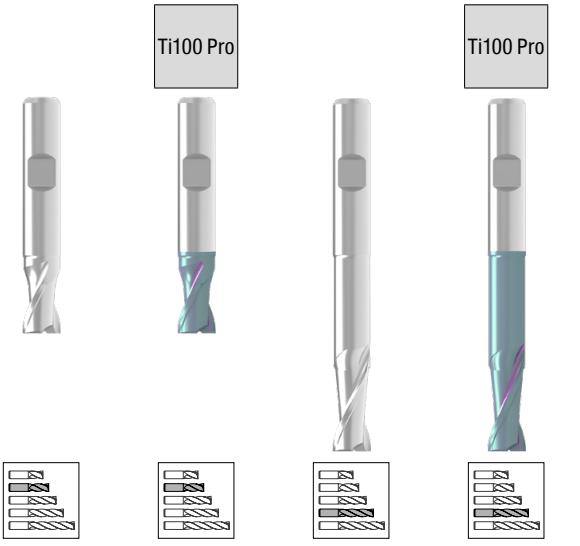
→ v_c/f_z Page 40–42

Continued on next page

Slot milling cutter HSS-E Co 8







DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 100 ... EUR		DIN 327 B U8 Article no. 54 025 ... EUR		Factory standard B U8 Article no. 50 122 ... EUR		Factory standard B U8 Article no. 54 020 ... EUR	
mm		mm	mm	mm	mm	mm	mm	mm									
11,70	h10	16,0	11,50	26,0	26	28	73	12	2	42,39	117	58,40	117				
12,00	e8	16,0	11,50	26,0	26	28	73	12	2	30,94	120	49,28	120				
12,00	e8	26,0	11,50	63,0	63	65	110	12	2					38,79	120	64,96	120
12,70	h10	16,0	11,50	26,0	26	28	73	12	2	47,58	127	81,18	127				
13,00	h10	16,0	11,50	26,0	26	28	73	12	2	42,39	130	72,70	130				
13,00	h10	26,0	11,50	63,0	63	65	110	12	2					63,91	130	94,01	130
13,70	h10	16,0	11,50	26,0	26	28	73	12	2	58,93	137	76,94	137				
14,00	e8	16,0	11,50	26,0	26	28	73	12	2	40,37	140	66,98	140				
14,00	e8	26,0	11,50	63,0	63	65	110	12	2					49,17	140	89,76	140
14,70	h10	16,0	11,50	26,0	26	28	73	12	2	65,07	147						
15,00	h10	16,0	11,50	26,0	26	28	73	12	2	49,17	150	72,70	150				
15,00	h10	26,0	11,50	63,0	63	65	110	12	2					60,51	150	101,30	150
15,70	h10	19,0	15,00	29,0	29	31	79	16	2	64,32	157	84,15	157				
16,00	e8	19,0	15,00	29,0	29	31	79	16	2	45,04	160	72,70	160				
16,00	e8	32,0	15,00	73,0	73	75	123	16	2					58,71	160	98,46	160
16,70	h10	19,0	15,00	29,0	29	31	79	16	2	74,71	167						
17,00	h10	19,0	15,00	29,0	29	31	79	16	2	57,97	170	104,10	170				
17,00	h10	32,0	15,00	73,0	73	75	123	16	2					76,51	170	147,30	170
17,70	h10	19,0	15,00	29,0	29	31	79	16	2	78,31	177	104,10	177				
18,00	e8	19,0	15,00	29,0	29	31	79	16	2	61,68	180	92,73	180				
18,00	e8	32,0	15,00	73,0	73	75	123	16	2					77,04	180	132,50	180
19,00	h10	19,0	15,00	29,0	29	31	79	16	2	74,82	190	115,50	190				
19,00	h10	32,0	15,00	73,0	73	75	123	16	2					83,72	190	153,70	190
19,70	h10	22,0	19,00	36,0	36	38	88	20	2	89,44	197	115,50	197				
20,00	e8	22,0	19,00	36,0	36	38	88	20	2	69,84	200	99,73	200				
20,00	e8	38,0	19,00	89,0	89	91	141	20	2					77,37	200	135,60	200
21,70	h10	22,0	19,00	36,0	36	38	88	20	2	124,00	217	166,40	217				
22,00	e8	22,0	19,00	36,0	36	38	88	20	2	85,42	220	142,10	220				
22,00	e8	38,0	19,00	89,0	89	91	141	20	2					133,50	220	177,00	220
23,70	h10	26,0	23,00	42,0	44	46	102	25	2	131,50	237	191,80	237				
24,00	e8	26,0	23,00	42,0	44	46	102	25	2	111,30	240	172,70	240				
24,00	e8	45,0	23,00	106,0	108	110	166	25	2					165,40	240	246,90	240
24,70	h10	26,0	24,00	44,0	44	46	102	25	2	130,30	247	197,10	247				
25,00	e8	26,0	24,00	44,0	44	46	102	25	2	105,50	250	171,70	250				
25,00	e8	45,0	24,00	108,0	108	110	166	25	2					165,40	250	204,60	250
26,00	h10	26,0	24,00	44,0	44	46	102	25	2	128,20	260	222,60	260				

Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

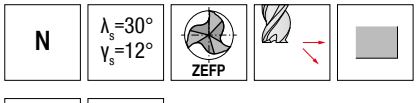
1) Factory standard

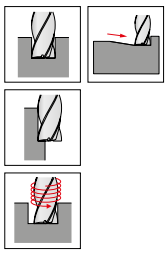
→ v_c/f_z Page 40–42

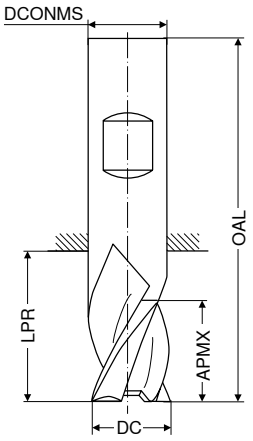
13

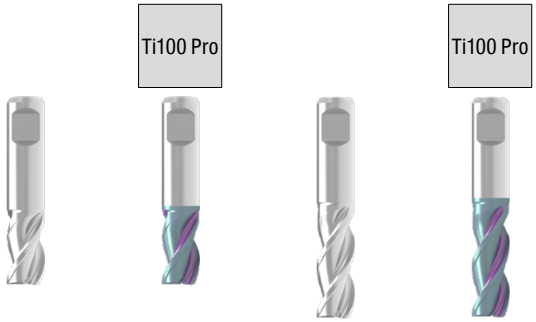
Throw-away milling cutter, HSS-E Co 8

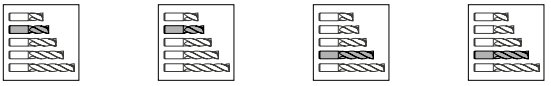
▲ Shank similar to DIN 1835 B













DC e8	APMX	LPR	OAL	DCONMS h6	ZEFP	U6 Article no. 50 092 ...		U8 Article no. 54 014 ...		U6 Article no. 50 093 ...		U8 Article no. 54 042 ...	
mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
1,00	2	8	34	6	3	11,34	010	22,46	010				
1,50	3	8	34	6	3	11,34	015	22,46	015				
1,50	4	10	35	6	3					13,25	015 1)	25,12	015 1)
1,80	3	8	34	6	3	11,34	018	22,46	018				
2,00	4	9	35	6	3	11,34	020	22,46	020				
2,00	7	12	38	6	3					13,25	020 1)	25,12	020
2,30	4	9	35	6	3	11,34	023	22,46	023				
2,50	5	10	36	6	3	11,34	025	22,46	025				
2,50	8	13	39	6	3					13,25	025 1)	25,12	025
2,80	5	10	36	6	3	11,34	028	22,46	028				
3,00	5	10	36	6	3	11,34	030	22,46	030				
3,00	8	13	39	6	3					13,25	030 1)	25,12	030
3,30	6	11	37	6	3	11,34	033	22,46	033				
3,50	6	11	37	6	3	11,34	035	22,46	035				
3,50	10	15	41	6	3					13,25	035 1)	25,12	035
3,80	7	12	38	6	3	11,34	038	22,46	038				
4,00	7	12	38	6	3	11,34	040	22,46	040				
4,00	11	16	42	6	3					13,25	040 1)	25,12	040
4,30	7	12	38	6	3	11,34	043	22,46	043				
4,50	7	12	38	6	3	11,34	045	22,46	045				
4,50	11	16	42	6	3					13,25	045 1)	25,12	045
4,80	8	13	39	6	3	11,34	048	22,46	048				
5,00	8	13	39	6	3	11,34	050	22,46	050				
5,00	13	18	44	6	3					13,25	050 1)	25,12	050
5,30	8	13	39	6	3	11,34	053	22,46	053				
5,50	8	13	39	6	3	11,34	055	22,46	055				
5,50	13	18	44	6	3					13,25	055 1)	25,12	055
5,75	8	13	39	6	3	11,34	057	22,46	057				
6,00	8	13	39	6	3	11,34	060	22,46	060				
6,00	13	18	44	6	3					13,25	060 1)	25,12	060
6,50	10	14	42	8	3	13,15	065	30,63	065				
6,50	16	20	48	8	3					15,68	065 1)	33,49	065
7,00	10	14	42	8	3	13,15	070	30,63	070				
7,00	16	20	48	8	3					15,68	070 1)	33,49	070
7,50	10	14	42	8	3	13,15	075	30,63	075				
7,50	16	20	48	8	3					15,68	075 1)	33,49	075
8,00	11	15	43	8	3	13,15	080	30,63	080				
8,00	19	23	51	8	3					15,68	080 1)	33,49	080
8,50	11	16	48	10	3	17,07	085	34,98	085				
8,50	19	24	56	10	3					19,60	085 1)	37,51	085
9,00	11	16	48	10	3	17,07	090	34,98	090				
9,00	19	24	56	10	3					19,60	090 1)	37,51	090
9,50	11	16	48	10	3	17,07	095	34,98	095				
9,50	19	24	56	10	3					19,60	095 1)	37,51	095
10,00	13	18	50	10	3	17,07	100	34,98	100				
10,00	22	27	59	10	3					19,60	100 1)	37,51	100

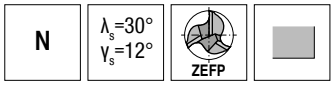
Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys hardened materials	○	○	○	○

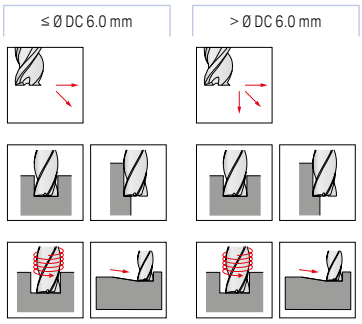
1) Shank tolerance -0,025 / -0,0323

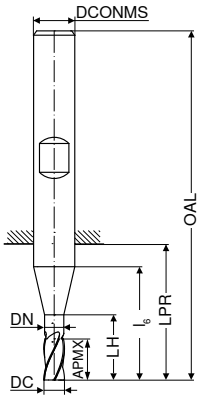
→ v_c/f_z Page 40–42

End milling cutter HSS-E Co 8

▲ Ø ≤ 6 mm, 3 teeth cutting to centre











DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 105 ...		DIN 327 B U8 Article no. 54 021 ...		DIN 844 K B U8 Article no. 50 106 ...		DIN 844 K B U8 Article no. 54 016 ...	
mm		mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
1,80	h10	4		4	10	12	48	6	3	25,97	018	36,98	018				
2,00	e8	4		4	10	12	48	6	3	21,20	020	30,63	020				
2,50	e8	5		5	11	13	49	6	3	23,10	025	30,63	025				
2,80	h10	5		5	11	13	49	6	3	25,97	028	36,98	028				
2,80	h10	8		8	18	20	56	6	3					32,12	028 [1]	42,82	028 [1]
3,00	e8	5		5	11	13	49	6	3	20,46	030	30,63	030				
3,00	e8	8		8	14	16	52	6	3					24,59	030	27,87	030
3,50	h10	6		6	12	14	50	6	3	25,44	035	33,49	035				
3,50	h10	10		10	16	18	54	6	3					26,60	035	27,87	035
3,80	h10	7		7	13	15	51	6	3	25,44	038	36,98	038				
3,80	h10	11		11	25	27	63	6	3					32,12	038 [1]	42,82	038 [1]
4,00	e8	7		7	13	15	51	6	3	20,46	040	30,63	040				
4,00	e8	11		11	17	19	55	6	3					23,95	040	27,87	040
4,50	h10	7		7	13	15	51	6	3	23,10	045	33,49	045				
4,50	h10	11		11	17	19	55	6	3					26,60	045	27,87	045
4,80	h10	8		8	14	16	52	6	3	23,10	048	36,98	048				
5,00	e8	8		8	14	16	52	6	3	20,87	050	30,63	050				
5,00	e8	13		13	19	21	57	6	3					24,59	050	27,87	050
5,50	h10	8		8	14	16	52	6	3	25,44	055	33,49	055				
5,50	h10	13		13	19	21	57	6	3					28,61	055	27,87	055
5,75	h10	8		8	14	16	52	6	3	25,44	057	36,98	057				
6,00	e8	8	5,5	14	14	16	52	6	3	20,87	060	30,63	060				
6,00	e8	13	5,5	19	19	21	57	6	3					23,95	060	27,87	060
6,50	h10	10	6,0	16	18	20	60	10	3	33,70	065	46,31	065				
6,50	h10	16	6,0	22	24	26	66	10	3					32,43	065	39,96	065
6,75	h10	10	6,5	16	18	20	60	10	3	33,70	067	54,15	067				
7,00	e8	10	6,5	16	18	20	60	10	3	33,06	070	45,68	070				
7,00	e8	16	6,5	22	24	26	66	10	3					32,65	070	39,96	070
7,50	h10	10	7,0	16	18	20	60	10	3	33,70	075	46,31	075				
7,50	h10	16	7,0	22	24	26	66	10	3					38,57	075	39,96	075
7,75	h10	11	7,5	17	19	21	61	10	3	33,70	077	48,43	077				
8,00	e8	11	7,5	17	19	21	61	10	3	29,46	080	42,82	080				
8,00	e8	19	7,5	25	27	29	69	10	3					34,12	080	39,96	080
8,50	h10	11	8,0	18	19	21	61	10	3	34,65	085	47,05	085				
8,50	h10	19	8,0	26	27	29	69	10	3					44,82	085	39,96	085
8,70	h10	11	8,5	18	19	21	61	10	3	34,65	087	54,15	087				
9,00	h10	11	8,5	18	19	21	61	10	3	36,88	090	45,68	090				
9,00	h10	19	8,5	26	27	29	69	10	3					37,62	090	39,96	090
9,50	h10	11	9,0	18	19	21	61	10	3	37,20	095	48,43	095				
9,50	h10	19	9,0	26	27	29	69	10	3					42,49	095	61,36	095
9,70	h10	13	9,5	21	21	23	63	10	3	37,20	097	51,40	097				
10,00	e8	13	9,5	21	21	23	63	10	3	28,19	100	44,94	100				
10,00	e8	22	9,5	30	30	32	72	10	3					33,81	100	39,96	100
10,50	h10	13	10,0	21	23	25	70	12	3	48,43	105	55,54	105				
10,70	h10	13	10,5	21	23	25	70	12	3	48,43	107	61,36	107				
11,00	h10	13	10,5	21	23	25	70	12	3	41,43	110	52,03	110				

Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys hardened materials	○	○	○	○

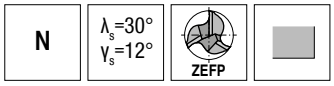
1) Factory standard

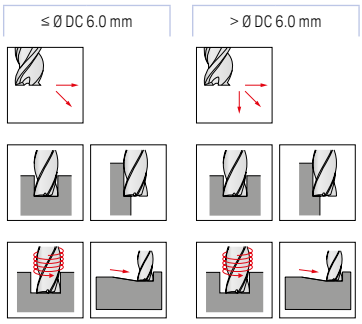
→ v_c/f_z Page 40–42

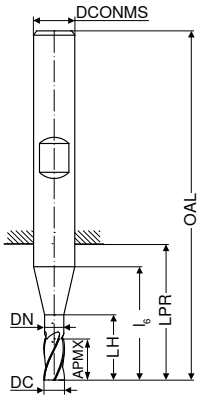
Continued on next page

End milling cutter HSS-E Co 8

▲ Ø ≤ 6 mm, 3 teeth cutting to centre











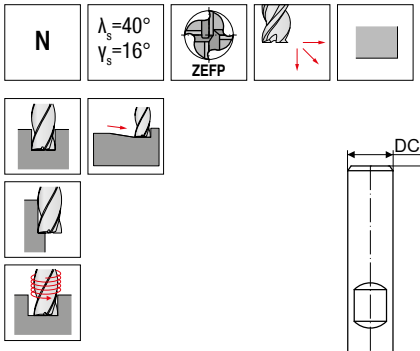
DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 105 ...		DIN 327 B U8 Article no. 54 021 ...		DIN 844 K B U8 Article no. 50 106 ...		DIN 844 K B U8 Article no. 54 016 ...	
mm		mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
11,00	h10	22	10,5	30	32	34	79	12	3					42,49	110	41,23	110
11,50	h10	13	11,0	21	23	25	70	12	3	42,92	115	55,54	115				
11,50	h10	22	11,0	30	32	34	79	12	3					54,48	115	70,58	115
11,70	h10	16	11,5	26	26	28	73	12	3	42,92	117	61,99	117				
12,00	e8	16	11,5	26	26	28	73	12	3	36,88	120	51,40	120				
12,00	e8	26	11,5	36	36	38	83	12	3					40,27	120	48,43	120
12,70	h10	16	11,5	26	26	28	73	12	3	53,94	127	86,90	127				
13,00	h10	16	11,5	26	26	28	73	12	3	53,94	130	75,56	130				
13,00	h10	26	11,5	36	36	38	83	12	3					58,60	130	59,77	130
13,70	h10	16	11,5	26	26	28	73	12	3	57,34	137	81,18	137				
14,00	e8	16	11,5	26	26	28	73	12	3	52,67	140	71,32	140				
14,00	e8	26	11,5	36	36	38	83	12	3					52,03	140	63,38	140
15,00	h10	16	11,5	26	26	28	73	12	3	55,85	150	75,56	150				
15,00	h10	26	11,5	36	36	38	83	12	3					72,91	150	95,38	150
15,50	h10	32	15,0	42	42	44	92	16	3					91,56	155	114,50	155
15,70	h10	19	15,0	29	29	31	79	16	3	58,71	157	91,14	157				
16,00	e8	19	15,0	29	29	31	79	16	3	50,44	160	78,43	160				
16,00	e8	32	15,0	42	42	44	92	16	3					60,40	160	63,38	160
17,00	h10	19	15,0	29	29	31	79	16	3	72,81	170	111,30	170				
17,00	h10	32	15,0	42	42	44	92	16	3					71,85	170	84,15	170
17,70	h10	19	15,0	29	29	31	79	16	3	84,04	177	115,50	177				
18,00	e8	19	15,0	29	29	31	79	16	3	70,69	180	101,30	180				
18,00	e8	32	15,0	42	42	44	92	16	3					66,98	180	92,73	180
19,00	h10	19	15,0	29	29	31	79	16	3	81,18	190	122,90	190				
19,00	h10	32	15,0	42	42	44	92	16	3					87,33	190	92,73	190
19,50	h10	38	19,0	52	52	54	104	20	3					106,00	195	153,70	195
19,70	h10	22	19,0	36	36	38	88	20	3	91,25	197	122,90	197				
20,00	e8	22	19,0	36	36	38	88	20	3	79,70	200	107,00	200				
20,00	e8	38	19,0	52	52	54	104	20	3					80,01	200	102,60	200
21,70	h10	22	19,0	36	36	38	88	20	3	138,80	217	173,80	217				
22,00	e8	22	19,0	36	36	38	88	20	3	124,00	220	153,70	220				
22,00	e8	38	19,0	52	52	54	104	20	3					98,03	220	116,60	220
23,70	h10	26	23,0	42	44	46	102	25	3	166,40	237	204,60	237				
24,00	e8	26	23,0	42	44	46	102	25	3	142,10	240	181,30	240				
24,70	h10	26	24,0	44	44	46	102	25	3	160,10	247	210,90	247				

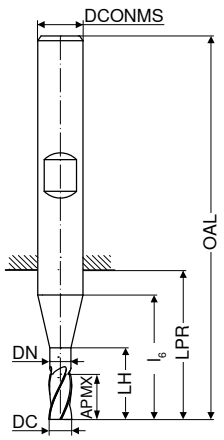
Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

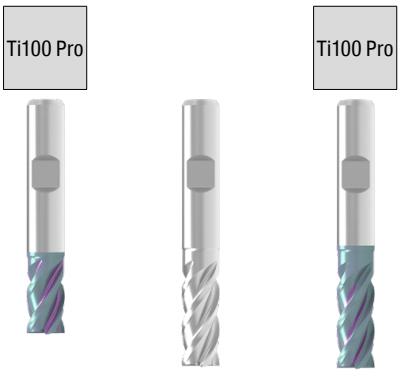
1) Factory standard

→ v_c/f_z Page 40–42

End milling cutter HSS-E Co 8







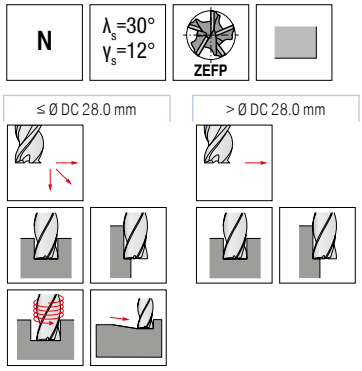
DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	Factory standard B U8 Article no. 54 017 ... EUR		DIN 844 B U8 Article no. 50 124 ... EUR		DIN 844 B U8 Article no. 54 011 ... EUR	
mm		mm	mm	mm	mm	mm	mm	mm							
4	k10	11		11	17	19	55	6	4			36,45	040	51,93	040
5	k10	13		13	19	21	57	6	4			36,45	050	56,27	050
6	e8	8	5,5	14	14	16	52	6	4	28,51	060				
6	k10	13	5,5	19	19	21	57	6	4			36,45	060	56,27	060
8	e8	11	7,5	17	19	21	61	10	4	35,61	080				
8	k10	19	7,5	25	27	29	69	10	4			40,27	080	68,67	080
9	k10	19	8,5	26	27	29	69	10	4			50,97	090	74,92	090
10	e8	13	9,5	21	21	23	63	10	4	37,84	100				
10	k10	22	9,5	30	30	32	72	10	4			49,49	100	68,67	100
12	e8	16	11,5	26	26	28	73	12	4	45,68	120				
12	k10	26	11,5	36	36	38	83	12	4			55,11	120	86,37	120
14	e8	16	11,5	26	26	28	73	12	4	64,12	140				
14	k10	26	11,5	36	36	38	83	12	4			64,75	140	114,50	140
15	k10	26	11,5	36	36	38	83	12	4			83,72	150		
16	e8	19	15,0	29	29	31	79	16	4	65,60	160				
16	k10	32	15,0	42	42	44	92	16	4			73,76	160	125,00	160
17	k10	32	15,0	42	42	44	92	16	4			104,10	170	174,80	170
18	e8	19	15,0	29	29	31	79	16	4	81,18	180				
18	k10	32	15,0	42	42	44	92	16	4			96,01	180	170,70	180
20	e8	22	19,0	36	36	38	88	20	4	92,73	200				
20	k10	38	19,0	52	52	54	104	20	4			108,10	200	179,10	200
25	k10	45	24,0	63	63	65	121	25	5			153,70	250	257,50	250

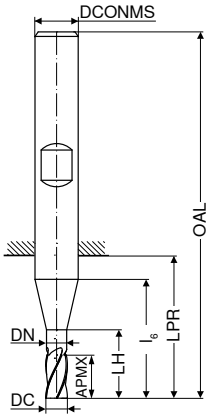
Steel	○	○	○
Stainless steel	●	●	●
Cast iron	○	○	○
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials			

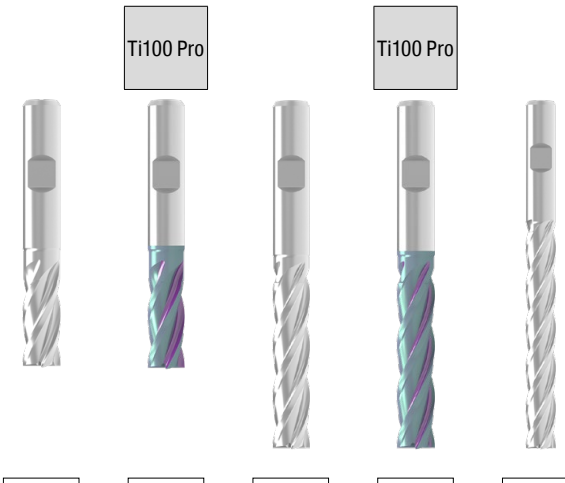
→ v_c/f_z Page 40–42

End milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre









									DIN 69844		DIN 69844		DIN 844		DIN 844		Factory standard	
									U8		U8		U8		U8		U6	
DC k10	APMX	DN	LH	l_6	LPR	OAL	DCONMS h6	ZEFP	Article no. 50 110 ...		Article no. 54 018 ...		Article no. 50 111 ...		Article no. 54 019 ...		Article no. 50 104 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
2,0	7		7	13	15	51	6	4	21,20	020	34,98	020						
2,5	8		8	14	16	52	6	4	22,36	025	33,49	025						
3,0	8		8	14	16	52	6	4	21,20	030	32,75	030						
3,0	12		12	18	20	56	6	4					29,57	030	42,07	030		
3,5	10		10	16	18	54	6	4	21,20	035	34,98	035						
4,0	11		11	17	19	55	6	4	19,29	040	31,37	040						
4,0	19		19	25	27	63	6	4					29,04	040	42,07	040		
4,5	11		11	17	19	55	6	4	21,20	045	34,23	045						
5,0	13		13	19	21	57	6	4	19,29	050	31,37	050						
5,0	24		24	30	32	68	6	4					29,04	050	42,07	050		
5,5	13		13	19	21	57	6	4	21,20	055	34,98	055						
6,0	13	5,5	19	19	21	57	6	4	17,91	060	32,00	060						
6,0	24	5,5	30	30	32	68	6	4					26,28	060	41,23	060		
6,0	56	5,5	62	62	64	100	6	4									45,78	060
6,5	16	6,0	22	24	26	66	10	4	25,12	065	44,19	065						
7,0	16	6,5	22	24	26	66	10	4	25,12	070	43,56	070						
7,0	30	6,5	36	38	40	80	10	4					43,56	070	52,78	070		
7,5	16	7,0	22	24	26	66	10	4	25,12	075	44,19	075						
8,0	19	7,5	25	27	29	69	10	4	22,05	080	42,07	080						
8,0	38	7,5	44	46	48	88	10	4					37,30	080	48,43	080		
8,0	70	7,5	73	73	75	115	10	4									51,72	080
8,5	19	8,0	26	27	29	69	10	4	26,81	085	44,19	085						
9,0	19	8,5	26	27	29	69	10	4	26,92	090	47,80	090						
9,0	38	8,5	45	46	48	88	10	4					45,35	090	57,01	090		
9,5	19	9,0	26	27	29	69	10	4	26,81	095	54,89	095						
10,0	22	9,5	30	30	32	72	10	4	25,54	100	44,19	100						
10,0	45	9,5	53	53	55	95	10	4					39,31	100	52,03	100		
10,0	75	9,5	79	79	81	121	10	4									62,32	100
10,5	22	10,0	30	32	34	79	12	4	42,71	105	60,73	105						
11,0	22	10,5	30	32	34	79	12	4	36,98	110	54,15	110						
11,0	45	10,5	53	55	57	102	12	4					51,62	110	69,20	110		
11,5	22	11,0	30	32	34	79	12	4	41,12	115	55,54	115						
12,0	26	11,5	36	36	38	83	12	4	35,39	120	51,40	120						
12,0	53	11,5	63	63	65	110	12	4					42,49	120	61,36	120		
12,0	85		85	85	85	130	12	4									67,30	120
13,0	26	11,5	36	36	38	83	12	4	53,41	130	75,56	130						
14,0	26	11,5	36	36	38	83	12	4	47,48	140	64,12	140						
14,0	53	11,5	63	63	65	110	12	4					54,48	140	81,18	140		

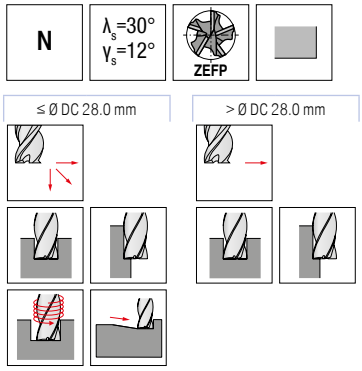
Steel	●	●	●	●	●
Stainless steel	○	●	○	●	○
Cast iron	●	●	●	●	●
Non ferrous metals	○	○	○	○	○
Heat resistant alloys hardened materials	○	○	○	○	○

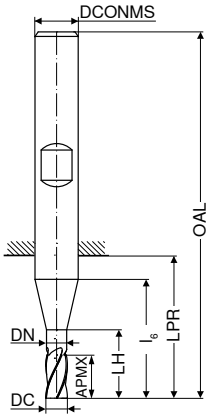
→ v_c/f_z Page 40–42

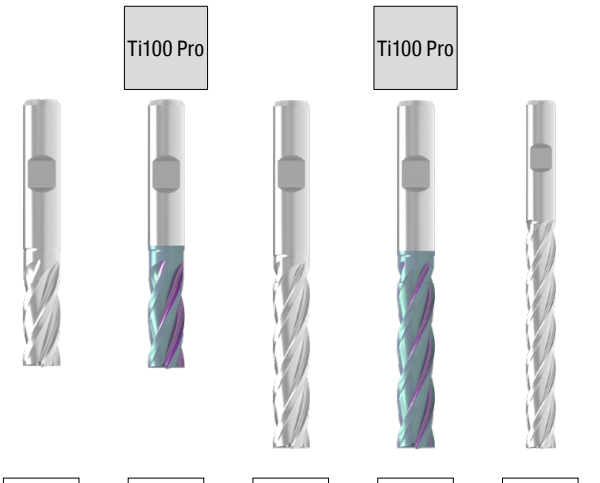
Continued on next page

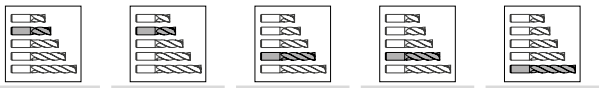
End milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre









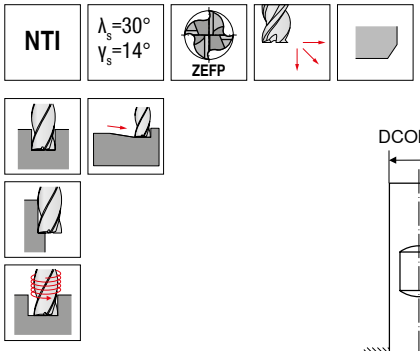
DC k10	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	ZEFP	DIN 69844		DIN 69844		DIN 844		DIN 844		Factory standard	
									B		B		B		B		B	
									U8		U8		U8		U8		U6	
									Article no. 50 110 ...		Article no. 54 018 ...		Article no. 50 111 ...		Article no. 54 019 ...		Article no. 50 104 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
14,0	85		85	85	85	130	12	4									85,42	140
15,0	26	11,5	36	36	38	83	12	4	53,94	150	76,94	150						
15,0	53	11,5	63	63	65	110	12	4					70,69	150	94,01	150		
16,0	32	15,0	42	42	44	92	16	4	49,17	160	75,56	160						
16,0	63	15,0	73	73	75	123	16	4					60,51	160	91,14	160		
16,0	90	15,0	95	95	97	145	16	4									81,18	160
18,0	32	15,0	42	42	44	92	16	4	69,20	180	104,10	180						
18,0	63	15,0	73	73	75	123	16	4					74,92	180	129,30	180		
18,0	100	15,0	110	110	112	160	16	5									149,50	180
20,0	38	19,0	52	52	54	104	20	4	72,59	200	109,20	200						
20,0	75	19,0	89	89	91	141	20	4					86,80	200	135,60	200		
20,0	110	19,0	128	128	130	180	20	5									139,90	200
22,0	38	19,0	52	52	54	104	20	5	100,80	220	145,20	220						
22,0	75	19,0	89	89	91	141	20	5					121,90	220	219,30	220		
22,0	110	19,0	128	128	130	180	20	5									197,10	220
24,0	45	23,0	61	63	65	121	25	5	116,60	240	167,40	240						
24,0	90	23,0	106	108	110	166	25	5					164,30	240	243,80	240		
25,0	45	24,0	63	63	65	121	25	5	116,60	250	160,10	250						
25,0	90	24,0	108	108	110	166	25	5					165,40	250	233,20	250		
25,0	125	24,0	142	142	144	200	25	6									197,10	250
28,0	45	24,0	63	63	65	121	25	5	133,50	280	197,10	280						
28,0	90	24,0	108	108	110	166	25	5					196,00	280	305,20	280		
28,0	140	24,0	147	147	149	205	25	6									276,60	280
30,0	45	24,0	63	63	65	121	25	5	186,50	300	234,20	300						
30,0	90	24,0	108	108	110	166	25	5					216,20	300	363,50	300		
32,0	53	31,0	70	70	73	133	32	6	181,30	320								
32,0	53	31,0	70	70	73	133	32	5			222,60	320						
32,0	106	31,0	123	123	126	186	32	6					205,60	320	354,00	320		
32,0	160	31,0	167	167	170	230	32	6									338,10	320
36,0	53	31,0	70	70	73	133	32	6	205,60	360	321,20	360						
40,0	63	38,0	80	80	85	155	40	6	271,30	400	399,60	400						
40,0	125	38,0	142	142	147	217	40	6					389,00	400	524,60	400		
40,0	180	31,0	197	197	200	260	32	8									562,70	400
45,0	125	38,0	142	142	147	217	40	8					652,80	450	722,80	450		
50,0	150	48,0	172	172	172	252	50	8					753,50	500	839,40	500		

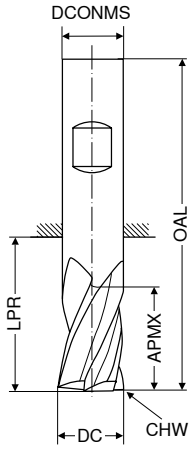
Steel	●	●	●	●	●
Stainless steel	○	●	○	●	○
Cast iron	●	●	●	●	●
Non ferrous metals	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○
hardened materials					

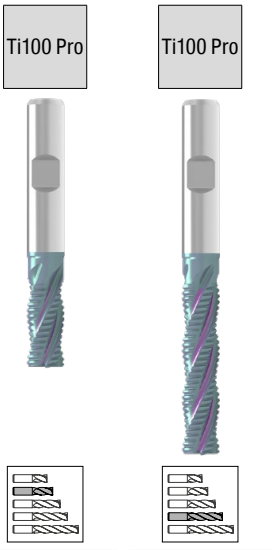
→ v_c/f_z Page 40–42

13

Powdersteel roughing finishing cutter







DIN 69844 | DIN 844

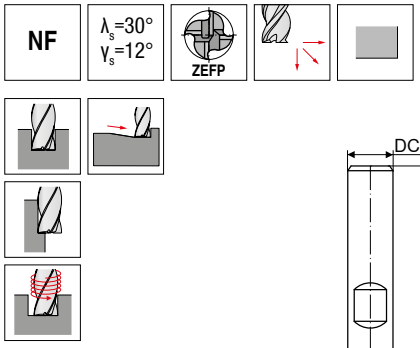
U8 | U8

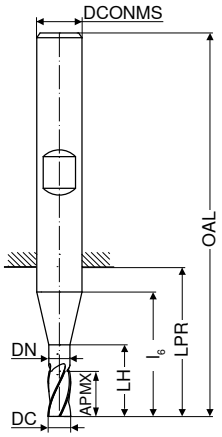
DC k12	APMX	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 54 007 ...		Article no. 54 008 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
6	13	21	57	6	0,3	4	101,50	060		
6	24	32	68	6	0,3	4			145,20	060
7	16	26	66	10	0,3	4	143,10	070		
8	19	29	69	10	0,3	4	133,50	080		
8	38	48	88	10	0,3	4			171,70	080
9	19	29	69	10	0,5	4	153,70	090		
10	22	32	72	10	0,5	4	143,10	100		
10	45	55	95	10	0,5	4			180,10	100
12	26	38	83	12	0,7	4	147,30	120		
12	53	65	110	12	0,7	4			201,30	120
14	26	38	83	12	0,8	4	186,50	140		
14	53	65	110	12	0,8	4			239,50	140
16	32	44	92	16	0,8	4	210,90	160		
16	63	75	123	16	0,8	4			272,40	160
18	32	44	92	16	0,8	4	265,00	180		
18	63	75	123	16	0,8	4			346,50	180
20	38	54	104	20	0,8	4	280,80	200		
20	75	91	141	20	0,8	4			375,10	200
25	45	65	121	25	1,0	5	416,50	250		
25	90	110	166	25	1,0	4			609,30	250
30	90	110	166	25	1,3	5			957,00	300
32	53	73	133	32	1,3	6	557,40	320		
32	106	126	186	32	1,3	5			886,00	320
40	63	85	155	40	1,3	6	957,00	400		
40	125	147	217	40	1,3	6			1.378,00	400

Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 40–42

Roughing-finishing milling cutter HSS-E Co 5













DIN 69844 | DIN 844





U8 | U8

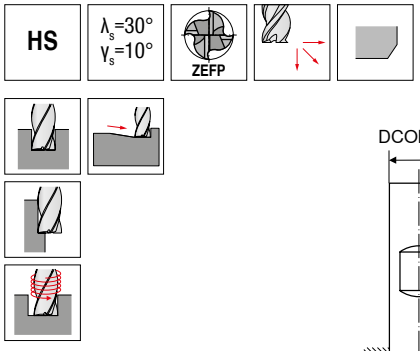
DC k12 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 54 028 ...	EUR	Article no. 54 029 ...	EUR
6	13	5,5	19	19	21	57	6	4	060	48,43		
6	24	5,5	30	30	32	68	6	4			060	69,20
7	16	6,5	22	24	26	66	10	4	070	66,24		
8	19	7,5	25	27	29	69	10	4	080	62,63		
8	38	7,5	44	46	48	88	10	4			080	81,18
9	19	8,5	26	27	29	69	10	4	090	71,32		
10	22	9,5	30	30	32	72	10	4	100	65,60		
10	45	9,5	53	53	55	95	10	4			100	86,90
11	22	10,5	30	32	32	79	12	4	110	78,43		
11	45	10,5	53	55	57	102	12	4			110	115,50
12	26	11,5	36	36	38	83	12	4	120	72,70		
12	53	11,5	63	63	65	110	12	4			120	96,97
13	26	11,5	36	36	38	83	12	4	130	94,01		
14	26	11,5	36	36	38	83	12	4	140	91,14		
15	26	11,5	36	36	38	83	12	4	150	101,30		
15	53	11,5	63	63	65	110	12	4			150	122,90
16	32	15,0	42	42	44	92	16	4	160	99,73		
16	63	15,0	73	73	75	123	16	4			160	131,50
18	32	15,0	42	42	44	92	16	4	180	135,60		
20	38	19,0	52	52	54	104	20	4	200	138,80		
20	75	19,0	89	89	91	141	20	4			200	186,50
22	75	19,0	89	89	91	141	20	4			220	277,70
22	38	19,0	52	52	54	104	20	4	220	182,30		
25	90	24,0	108	108	110	166	25	4			250	305,20
25	45	24,0	63	63	65	121	25	4	250	198,20		
28	90	24,0	108	108	110	166	25	5			280	396,30

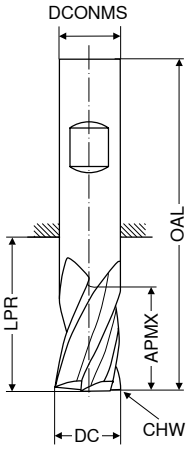
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

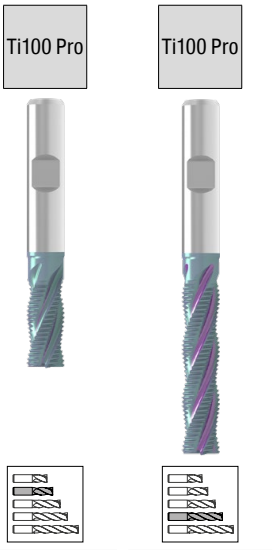
→ v_c/f_z Page 40–42

13

Powdersteel roughing finishing cutter







DIN 69844 | DIN 844

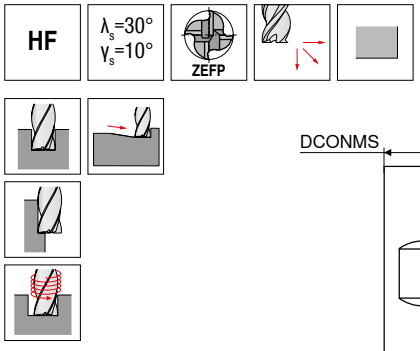
U8 | U8

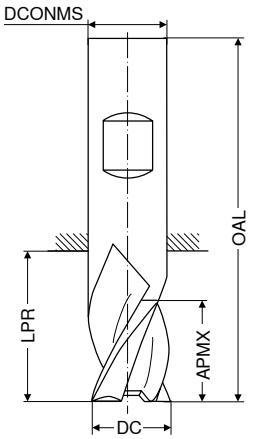
DC k12 mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 54 009 ... EUR		Article no. 54 012 ... EUR	
6	13	21	57	6	0,45	4	101,50	060		
6	24	32	68	6	0,45	4			145,20	060
8	19	29	69	10	0,45	4	133,50	080		
8	38	48	88	10	0,45	4			171,70	080
10	22	32	72	10	0,45	4	143,10	100		
10	45	55	95	10	0,45	4			180,10	100
12	26	38	83	12	0,45	4	147,30	120		
12	53	65	110	12	0,45	4			201,30	120
14	26	38	83	12	0,45	4	186,50	140		
14	53	65	110	12	0,45	4			239,50	140
16	32	44	92	16	0,60	4	210,90	160		
16	63	75	123	16	0,60	4			272,40	160
18	32	44	92	16	0,60	4	265,00	180		
18	63	75	123	16	0,60	4			346,50	180
20	38	54	104	20	0,60	4	280,80	200		
20	75	91	141	20	0,60	4			375,10	200
22	38	54	104	20	0,60	5	368,80	220		
25	45	65	121	25	0,75	5	416,50	250		
25	90	110	166	25	0,75	5			609,30	250
28	45	65	121	25	0,75	5	522,50	280		
28	90	110	166	25	0,75	5			918,80	280
30	45	65	121	25	0,75	5	605,20	300		
30	90	110	166	25	0,75	5			957,00	300
32	53	73	133	32	0,75	6	557,40	320		
32	106	126	186	32	0,75	5			886,00	320
40	63	85	155	40	0,90	6	957,00	400		

Steel	○	○
Stainless steel		
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 40–42

Powdersteel roughing finishing cutter









DIN 844



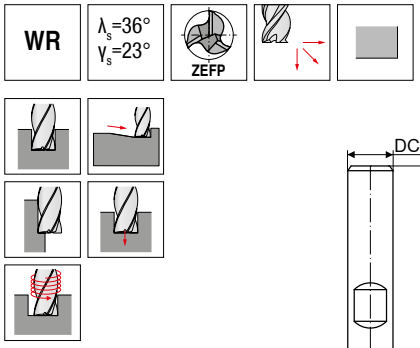
U8

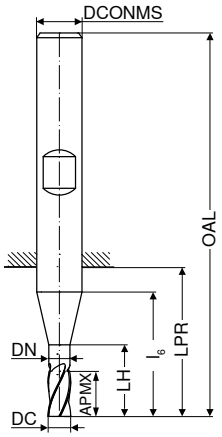
DC k12 mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 54 034 ... EUR	
6	13	21	57	6	4	55,54	060
8	19	29	69	10	4	75,56	080
10	22	32	72	10	4	81,18	100
12	26	38	83	12	4	88,28	120
14	26	38	83	12	4	99,73	140
16	32	44	92	16	4	131,50	160
18	32	44	92	16	4	138,80	180
20	38	54	104	20	4	168,50	200
25	45	65	121	25	4	258,50	250

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 40–42

Rough milling cutter HSS-E Co 8













DIN 844



Factory standard

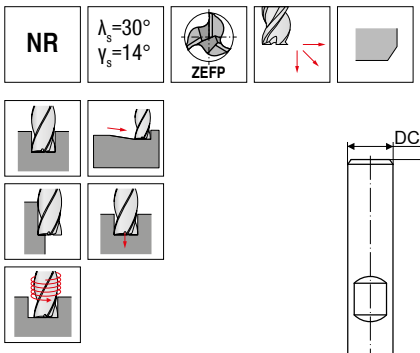


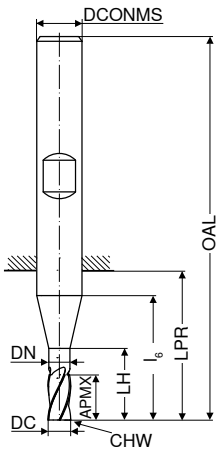
DC k12	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	ZEFP	U8 Article no. 54 013 ...		U8 Article no. 54 010 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	13	5,5	19	19	21	57	6	3	79,27	060		
6	19	5,5	25	25	27	63	6	3			103,70	060
8	19	7,5	25	27	29	69	10	3	105,80	080		
8	28	7,5	34	36	38	78	10	3			121,90	080
10	22	9,5	30	30	32	72	10	3	115,50	100		
10	34	9,5	42	42	44	84	10	3			126,20	100
12	26	11,5	36	36	38	83	12	3	124,00	120		
12	40	11,5	50	50	52	97	12	3			142,10	120
16	32	15,0	42	42	44	92	16	3	172,70	160		
16	48	15,0	58	58	60	108	16	3			190,70	160
20	38	19,0	52	52	54	104	20	3	232,10	200		
20	56	19,0	70	70	72	122	20	3			272,40	200
25	45	24,0	63	63	65	121	25	3	333,80	250		
25	68	24,0	86	86	88	144	25	3			435,60	250
32	80	31,0	97	97	100	160	32	3			608,30	320

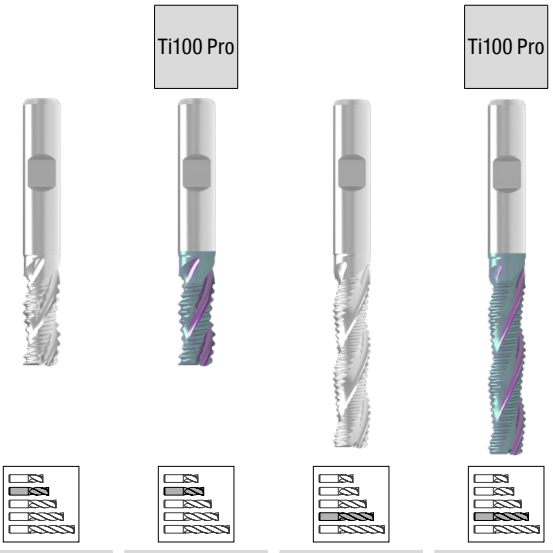
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 40–42

Rough milling cutter HSS-E Co 8







DC k12	APMX	DN	LH	l_6	LPR	OAL	DCONMS h6	CHW	ZEFP	DIN 69844 B U8 Article no. 50 153 ... EUR		DIN 69844 B U8 Article no. 54 026 ... EUR		DIN 844 B U8 Article no. 50 157 ... EUR		DIN 844 B U8 Article no. 54 027 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm	mm									
6	13	5,5	19	19	21	57	6	0,5	3	41,96	060	48,43	060				
6	24	5,5	30	30	32	68	6	0,5	3					49,91	060	69,20	060
7	16	6,5	22	24	26	66	10	0,5	3	55,11	070	66,98	070				
8	19	7,5	25	27	29	69	10	0,7	3	50,34	080	62,63	080				
8	38	7,5	44	46	48	88	10	0,7	3					55,74	080	81,18	080
9	19	8,5	26	27	29	69	10	0,7	3	60,62	090	71,32	090				
9	38	8,5	45	46	48	88	10	0,7	3					82,66	090	94,01	090
10	22	9,5	30	30	32	72	10	0,7	3	53,62	100	65,60	100				
10	45	9,5	53	53	55	95	10	0,7	3					71,00	100	86,90	100
11	22	10,5	30	32	34	79	12	0,7	3	67,93	110	81,18	110				
11	45	10,5	53	55	55	102	12	0,7	3					92,73	110	115,50	110
12	26	11,5	36	36	38	83	12	0,7	3	57,65	120	72,70	120				
12	53	11,5	63	63	65	110	12	0,7	3					76,73	120	96,97	120
14	26	11,5	36	36	38	83	12	0,9	3	66,98	140	91,14	140				
14	53	11,5	63	63	65	110	12	0,9	3					92,52	140	116,60	140
15	26	11,5	36	36	38	83	12	0,9	3	79,06	150	102,60	150				
15	53	11,5	63	63	65	110	12	0,9	3					110,20	150	136,80	150
16	32	15,0	42	42	44	92	16	0,9	3	76,30	160	99,73	160				
16	63	15,0	73	73	75	123	16	0,9	3					95,38	160	131,50	160
18	32	15,0	42	42	44	92	16	0,9	3	96,34	180	135,60	180				
18	63	15,0	73	73	75	123	16	0,9	3					145,20	180	176,00	180
20	38	19,0	52	52	54	104	20	0,9	3	105,70	200	138,80	200				
20	75	19,0	89	89	91	141	20	0,9	3					139,90	200	186,50	200
25	45	24,0	63	63	65	121	25	0,9	3	164,30	250	198,20	250				
25	90	24,0	108	108	110	166	25	0,9	3					205,60	250	305,20	250

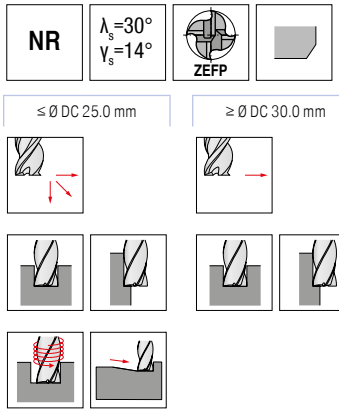
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

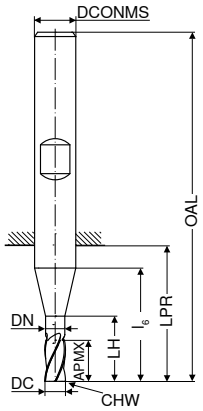
→ v_c/f_z Page 40–42

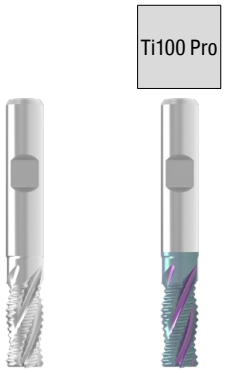
13

Rough milling cutter HSS-E Co 5

▲ > Ø 25,0 mm recessed centre











DIN 69844 | DIN 69844

B | B

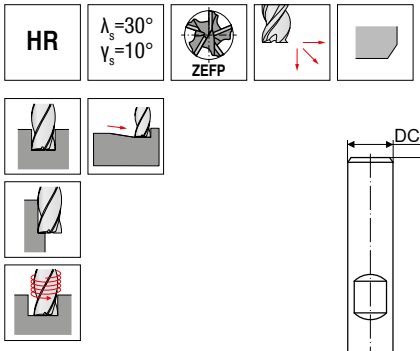
U8 | U8

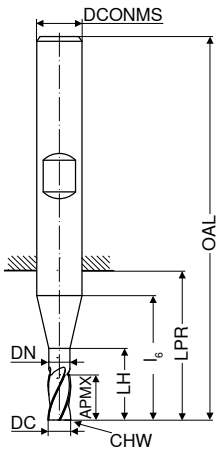
DC k12 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 50 125 ... EUR		Article no. 54 030 ... EUR	
6	13	5,5	19	19	21	57	6	0,5	4	33,17	060	48,43	060
7	16	6,5	22	24	26	66	10	0,5	4	41,86	070	66,98	070
8	19	7,5	25	27	29	69	10	0,7	4	36,24	080	62,63	080
9	19	8,5	26	27	29	69	10	0,7	4	48,86	090	64,12	090
10	22	9,5	30	30	32	72	10	0,7	4	38,68	100	65,60	100
11	22	10,5	30	32	32	79	12	0,7	4	53,52	110	86,90	110
12	26	11,5	36	36	38	83	12	0,7	4	40,80	120	72,70	120
13	26	11,5	36	36	38	83	12	0,7	4			94,01	130
14	26	11,5	36	36	38	83	12	0,9	4	52,99	140	91,14	140
15	26	11,5	36	36	38	83	12	0,9	4			101,30	150
16	32	15,0	42	42	44	92	16	0,9	4	63,59	160	99,73	160
18	32	15,0	42	42	44	92	16	0,9	4	68,36	180	135,60	180
20	38	19,0	52	52	54	104	20	0,9	4	84,46	200	138,80	200
22	38	19,0	52	52	54	104	20	0,9	4			182,30	220
24	45	23,0	61	63	65	121	25	0,9	4			195,00	240
25	45	24,0	63	63	65	121	25	0,9	4	108,10	250	198,20	250
30	45	24,0	63	63	65	121	25	1,1	5			298,90	300
32	53	31,0	70	70	73	133	32	1,1	6			280,80	320
40	63	38,0	80	80	85	155	40	1,1	6			504,40	400

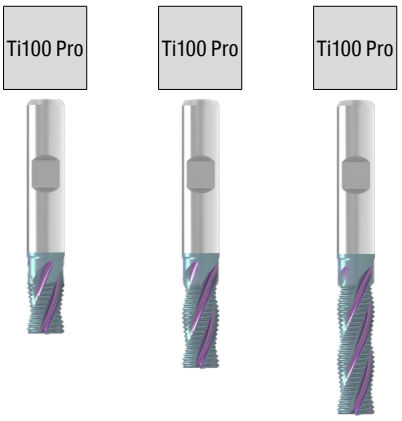
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

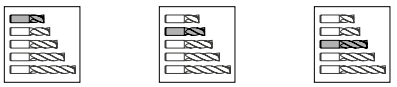
→ v_c/f_z Page 40–42

Powdersteel Fine rough milling cutter









										Factory standard		DIN 844		Factory standard	
										B		B		B	
										U8		U8		U8	
DC k12	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 54 031 ...		Article no. 54 032 ...		Article no. 54 033 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
6	8	5,5	14	14	16	52	6	0,35	4	63,38	060				
6	13	5,5	19	19	21	57	6	0,35	4			48,43	060		
8	11	7,5	17	19	21	61	10	0,45	4	71,32	080				
8	19	7,5	25	27	29	69	10	0,45	4			68,36	080		
8	28	7,5	34	36	38	78	10	0,45	4					93,26	080
10	13	9,5	21	21	23	63	10	0,45	4	71,32	100				
10	22	9,5	30	30	32	72	10	0,45	4			75,56	100		
10	34	9,5	42	42	44	84	10	0,45	4					100,00	100
12	16	11,5	26	26	28	73	12	0,60	4	84,15	120				
12	26	11,5	36	36	38	83	12	0,60	4			85,52	120		
12	40	11,5	50	50	52	97	12	0,60	4					116,60	120
14	16	11,5	26	26	28	73	12	0,60	4	108,10	140				
14	26	11,5	36	36	38	83	12	0,60	4			95,38	140		
14	40	11,5	50	50	52	97	12	0,60	4					152,60	140
16	19	15,0	29	29	31	79	16	0,70	4	118,70	160				
16	32	15,0	42	42	44	92	16	0,70	4			118,70	160		
16	48	15,0	58	58	60	108	16	0,70	4					174,80	160
18	19	15,0	29	29	31	79	16	0,70	4	142,10	180				
18	32	15,0	42	42	44	92	16	0,70	4			145,20	180		
18	48	15,0	58	58	60	108	16	0,70	4					216,20	180
20	22	19,0	36	36	38	88	20	0,70	4	160,10	200				
20	38	19,0	52	52	54	104	20	0,70	4			166,40	200		
20	56	19,0	70	70	72	122	20	0,70	4					219,30	200
22	22	19,0	36	36	38	88	20	0,70	4	214,00	220				
22	38	19,0	52	52	54	104	20	0,70	4			232,10	220		
22	56	19,0	70	70	72	122	20	0,70	4					305,20	220
25	26	24,0	44	44	46	102	25	0,70	4	252,20	250				
25	45	24,0	63	63	65	121	25	0,70	4			227,90	250		
25	68	24,0	86	86	88	144	25	0,70	4					342,30	250
28	26	24,0	44	44	46	102	25	0,90	5	316,90	280				
30	45	24,0	63	63	65	121	25	0,90	5			387,90	300		
32	32	31,0	49	49	52	112	32	0,90	6	337,00	320				
32	53	31,0	70	70	73	133	32	0,90	6			364,50	320		

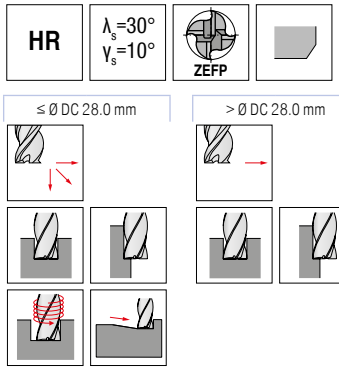
Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

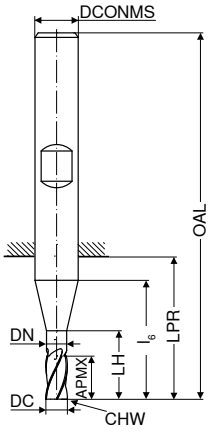
→ v_c/f_z Page 40–42

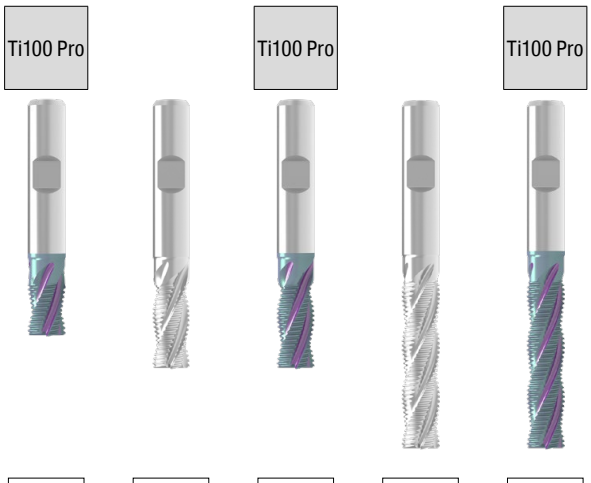
13

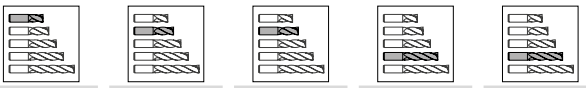
Fine profile milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre







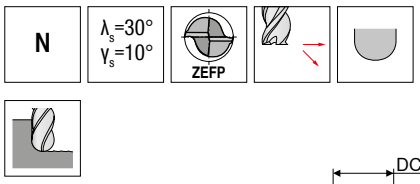


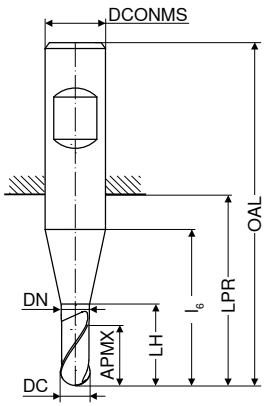
DC k12	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	CHW	ZEFP	Factory standard		DIN 69844		DIN 69844		DIN 844		DIN 844	
										B		B		B		B		B	
										U8		U8		U8		U8		U8	
										Article no. 54 022 ...		Article no. 50 140 ...		Article no. 54 023 ...		Article no. 50 141 ...		Article no. 54 024 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
4	11		11	17	19	55	6	0,35	3			37,10	040	47,05	040				
5	13		13	19	21	57	6	0,35	3			37,10	050	47,05	050				
6	8	5,5	14	14	16	52	6	0,35	4	50,55	060								
6	13	5,5	19	19	21	57	6	0,35	4			37,10	060	40,59	060				
6	24	5,5	30	30	32	68	6	0,35	4							57,12	060	76,94	060
8	11	7,5	17	19	21	61	10	0,45	4	62,63	080								
8	19	7,5	25	27	29	69	10	0,45	4			39,31	080	44,94	080				
8	38	7,5	44	46	48	88	10	0,45	4							65,92	080	91,14	080
10	13	9,5	21	21	23	63	10	0,45	4	55,54	100								
10	22	9,5	30	30	32	72	10	0,45	4			42,60	100	48,43	100				
10	45	9,5	53	53	55	95	10	0,45	4							71,00	100	95,38	100
12	16	11,5	26	26	28	73	12	0,60	4	68,36	120								
12	26	11,5	36	36	38	83	12	0,60	4			47,16	120	57,01	120				
12	53	11,5	63	63	65	110	12	0,60	4							79,16	120	107,00	120
14	16	11,5	26	26	28	73	12	0,60	4	86,90	140								
14	26	11,5	36	36	38	83	12	0,60	4			51,72	140	64,12	140				
14	53	11,5	63	63	65	110	12	0,60	4							85,95	140	122,90	140
16	19	15,0	29	29	31	79	16	0,70	4	91,14	160								
16	32	15,0	42	42	44	92	16	0,70	4			55,42	160	74,08	160				
16	63	15,0	73	73	75	123	16	0,70	4							103,10	160	144,10	160
18	19	15,0	29	29	31	79	16	0,70	4	118,70	180								
18	32	15,0	42	42	44	92	16	0,70	4			70,69	180	91,14	180				
18	63	15,0	73	73	75	123	16	0,70	4							119,80	180	176,00	180
20	22	19,0	36	36	38	88	20	0,70	4	122,90	200								
20	38	19,0	52	52	54	104	20	0,70	4			82,23	200	108,10	200				
20	75	19,0	89	89	91	141	20	0,70	4							139,90	200	204,60	200
22	38	19,0	52	52	54	114	20	0,70	4			110,20	220	136,80	220				
22	75	19,0	89	89	91	141	20	0,70	4							172,70	220	279,80	220
25	45	24,0	63	63	65	121	25	0,70	4			154,80	250	147,30	250				
25	90	24,0	108	108	110	166	25	0,70	4									327,50	250
28	45	24,0	63	63	65	121	25	0,90	5					223,60	280				
28	90	24,0	108	108	110	166	25	0,90	5									412,30	280
30	45	24,0	63	63	65	121	25	0,90	5					191,80	300				
30	90	24,0	108	108	110	166	25	0,90	5									449,40	300
32	53	31,0	70	70	73	133	32	0,90	6					228,90	320				
32	106	31,0	123	123	126	186	32	0,90	6									457,80	320

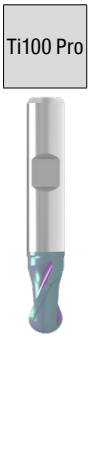
Steel	●	●	●	●	●
Stainless steel	●	○	●	○	●
Cast iron	●	●	●	●	●
Non ferrous metals	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○
hardened materials					

→ v_c/f_z Page 40–42

Ball nosed end milling cutter HSS-E Co 8













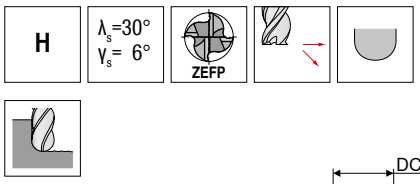
									Factory standard		Factory standard		Factory standard	
									B		B		B	
									U8		U8		U8	
DC h10	APMX	DN	LH	l_6	LPR	OAL	DCONMS h6	ZEFP	Article no. 50 320 ...		Article no. 54 041 ...		Article no. 50 321 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
2	4		4	10	12	48	6	2	35,18	020	45,68	020		
3	5		5	11	13	49	6	2	33,17	030	44,94	030		
3	8		8	18	20	56	6	2					49,28	030
4	7		7	13	15	51	6	2	33,17	040	44,94	040		
4	11		11	25	27	63	6	2					49,28	040
5	8		8	14	16	52	6	2	33,17	050	44,94	050		
5	13		13	30	32	68	6	2					49,28	050
6	8	5,50	14	14	16	52	6	2	33,17	060	44,94	060		
6	13	5,50	30	30	32	68	6	2					52,03	060
7	10	6,50	16	18	20	60	10	2	44,82	070	65,60	070		
7	16	6,35	36	38	40	80	10	2					58,50	070
8	11	7,50	17	19	21	61	10	2	36,35	080	61,36	080		
8	19	7,35	44	46	48	88	10	2					53,09	080
9	11	8,50	18	19	21	61	10	2	42,07	090	69,20	090		
9	19	8,35	45	46	48	88	10	2					62,10	090
10	13	9,50	21	21	23	63	10	2	41,86	100	64,12	100		
10	22	9,35	53	53	55	95	10	2					66,45	100
11	13	10,50	21	23	25	70	12	2	48,64	110				
11	22	10,50	53	55	57	102	12	2					71,75	110
12	16	11,50	26	26	28	73	12	2	46,95	120	72,70	120		
12	26	11,50	63	63	65	110	12	2					67,61	120
13	16	11,50	26	26	28	73	12	2	54,05	130	104,10	130		
14	16	11,50	26	26	28	73	12	2	54,89	140	95,38	140		
14	26	11,50	63	63	65	110	12	2					78,53	140
15	16	11,50	26	26	28	73	12	2	64,01	150	114,50	150		
15	26	11,50	63	63	65	110	12	2					102,00	150
16	19	15,50	29	29	31	79	16	2	66,55	160	114,50	160		
16	32	15,00	73	73	75	123	16	2					102,20	160
18	19	15,50	29	29	31	79	16	2	82,98	180	136,80	180		
18	32	15,00	73	73	75	123	16	2					129,30	180
20	22	19,00	36	36	38	88	20	2	88,28	201	135,60	201		
22	22	19,00	36	36	38	88	20	2	113,40	220				
24	26	23,00	42	44	46	102	25	2	115,50	240	215,20	240		
24	45	23,00	106	108	110	166	25	2					191,80	240
25	26	24,00	44	44	46	102	25	2	115,50	250				
25	45	24,00	108	108	110	166	25	2					180,10	250
26	26	24,00	44	44	46	102	25	2	168,50	260				
28	26	24,00	44	44	46	102	25	2	159,00	280				
30	26	24,00	44	44	46	102	25	2	183,40	300				
30	45	24,00	108	108	110	166	25	2					260,70	300

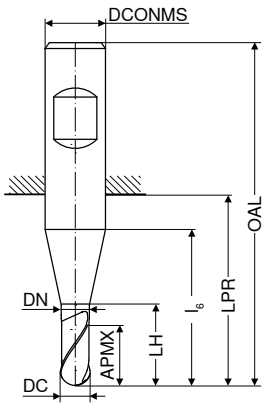
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

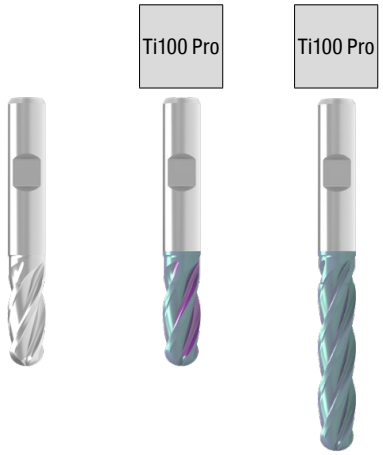
→ v_c/f_z Page 40–42

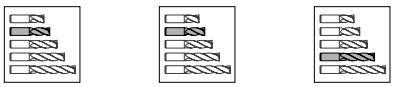
13

Ball nosed cutter HSS-E Co 8









DIN 1889 B | DIN 1889 B | DIN 1889 B



U8 | U8 | U8

DC k12 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 308 ... EUR		Article no. 54 038 ... EUR		Article no. 54 039 ... EUR	
6	13	5,5	19	19	21	57	6	4	74,92	060	79,80	060		
6	24	5,5	30	30	32	68	6	4					96,97	060 [1]
8	19	7,5	25	27	29	69	10	4	82,35	080	104,10	080		
8	38	7,5	44	46	48	88	10	4					116,60	080 [1]
10	22	9,5	30	30	32	72	10	4	84,46	100	114,50	100		
10	45	9,5	53	53	55	95	10	4					126,20	100
12	26	11,5	36	36	38	83	12	4	95,59	120	129,30	120		
12	53	11,5	63	63	65	110	12	4					146,20	120
16	32	15,0	42	42	44	92	16	4	126,20	160	173,80	160		
16	63	15,0	73	73	75	123	16	4					205,60	160
20	38	19,0	52	52	54	104	20	4			243,80	200		
20	75	19,0	89	89	91	141	20	4					291,40	200
25	45	24,0	63	63	65	121	25	5			306,30	250		

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

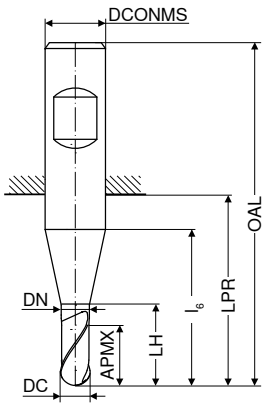
1) Factory standard

→ v_c/f_z Page 40–42

Ball nosed fine rough milling cutter HSS-E Co 8

HR | λ_s=30° γ_s=10° | ZEFP

Ti100 Pro







DIN 1889 B



U8

DC $_{js14}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 54 040 ... EUR	
6	13	5,5	19	19	21	57	6	4	101,30	**060**
8	19	7,5	25	27	29	69	10	4	124,00	**080**
10	22	9,5	30	30	32	72	10	4	125,00	**100**
12	26	11,5	36	36	38	83	12	4	147,30	**120**
16	32	15,0	42	42	44	92	16	4	207,70	**160**
20	38	19,0	52	52	54	104	20	4	267,10	**200**

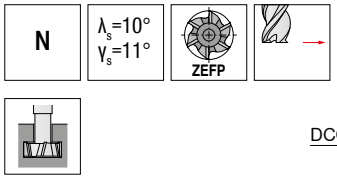
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

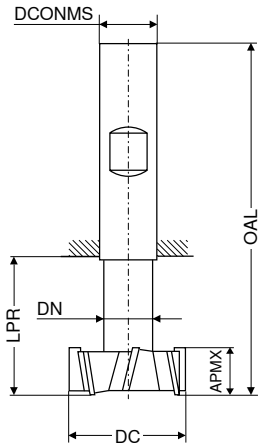
→ v_c/f_z Page 40–42

13

T-slot milling cutter HSS-E Co 5, cross pitched

▲ for slots according to DIN 650







DIN 851 A

B 

U6

DC $_{d11}$ mm	APMX $_{d11}$ mm	DN $_{h12}$ mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 50 240 ...	
							EUR	
11,0	4	4	13,5	53,5	10	6	81,18	**110**
12,5	6	5	17,0	57,0	10	6	78,53	**125**
16,0	8	7	22,0	62,0	10	6	86,80	**160**
18,0	8	8	25,0	70,0	12	6	91,03	**180**
19,0	9	8	26,0	71,0	12	6	110,20	**190** 1)
21,0	9	10	29,0	74,0	12	6	113,40	**210**
22,0	10	10	30,0	75,0	12	6	116,60	**220** 1)
25,0	11	12	34,0	82,0	16	8	136,80	**250**
28,0	12	13	37,0	85,0	16	8	164,30	**280** 1)
32,0	14	15	42,0	90,0	16	8	185,40	**320**
36,0	16	17	47,0	103,0	25	8	278,70	**360** 1)
40,0	18	19	52,0	108,0	25	10	313,70	**400**
45,0	20	21	57,0	113,0	25	10	348,70	**450** 1)
50,0	22	25	64,0	124,0	32	10	383,70	**500**
60,0	28	30	79,0	139,0	32	10	512,90	**600**

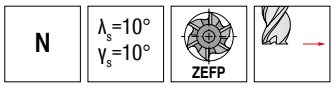
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

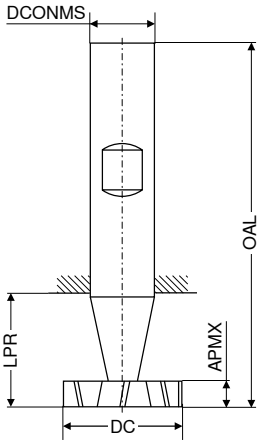
→ v_c/f_z Page 43

Slot milling cutter HSS-E Co 5, cross-pitched

▲ for slots according to DIN 6888
▲ CDX = $a_{p\,max.}$









DIN 850
B

U6

DC h12	APMX e8	LPR	OAL	DCONMS h6	CDX	ZEFP	Article no. 50 234 ...	
mm	mm	mm	mm	mm	mm		EUR	
10,5	2,0	14	50	6	3,25	6	61,79	100
10,5	2,5	14	50	6	3,15	6	61,79	101
10,5	3,0	14	50	6	3,15	6	61,79	102
13,5	2,0	16	56	10	4,45	6	61,79	130 1)
13,5	3,0	16	56	10	4,45	6	61,79	132
13,5	4,0	16	56	10	4,45	6	61,79	133
16,5	3,0	16	56	10	5,95	6	67,30	161
16,5	4,0	16	56	10	5,95	6	67,30	162
16,5	5,0	16	56	10	5,75	6	67,30	163
19,5	3,0	23	63	10	6,95	8	74,18	190 1)
19,5	4,0	23	63	10	6,95	8	74,18	191
19,5	5,0	23	63	10	6,75	8	74,18	192
22,5	4,0	23	63	10	8,25	8	88,07	220 1)
22,5	5,0	23	63	10	8,25	8	88,07	221
22,5	6,0	23	63	10	8,00	8	88,07	222
25,5	5,0	23	63	10	9,00	10	88,07	250 1)
25,5	6,0	23	63	10	9,00	10	88,07	251
28,5	6,0	23	63	10	10,00	10	129,30	281
28,5	8,0	23	63	10	10,00	10	129,30	283
32,5	6,0	26	71	12	12,00	10	131,50	321 1)
32,5	8,0	26	71	12	12,00	10	131,50	322
38,5	8,0	26	71	12	13,35	10	195,00	381 1)
45,5	10,0	26	71	12	16,85	12	237,40	450

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

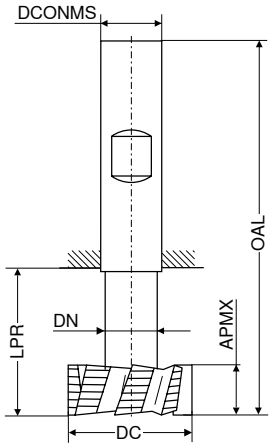
→ v_c/f_z Page 43

13

T-slot milling cutter HSS-E Co 5

▲ for slots according to DIN 650

NF | λ_s=20° γ_s=11° | ZEFP





DIN 851 A

B 

U6

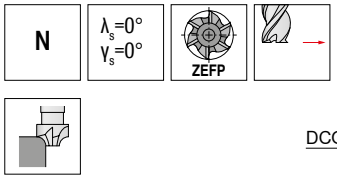
DC $_{d11}$ mm	APMX mm	DN $_{h12}$ mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 50 241 ... EUR	
21	9	10	29	74	12	6	131,50	**210**
22	10	10	30	75	12	6	145,20	**220** 1)
25	11	12	34	82	16	6	156,80	**250**
28	12	13	37	85	16	6	171,70	**280** 1)
32	14	15	42	90	16	6	216,20	**320**
36	16	17	47	103	25	6	263,90	**360** 1)
40	18	19	52	108	25	8	341,20	**400**
45	20	21	57	113	25	8	357,10	**450** 1)

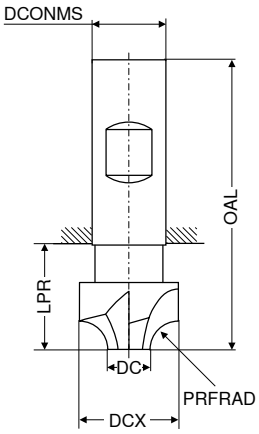
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

→ v_c/f_z Page 43

Quarter-round profile milling cutter HSS-E Co 5, concave







DIN 6518

B

U6

PRFRAD h11	DCX	DC	LPR	OAL	DCONMS h6	ZEFP	Article no. 50 248 ...	
mm	mm	mm	mm	mm	mm		EUR	
1,0	8	6	20	60	10	4	47,58	**010**
1,5	9	6	20	60	10	4	58,18	**015**
2,0	10	6	20	60	10	4	53,94	**020**
2,5	11	6	20	60	10	4	60,73	**025**
3,0	12	6	15	60	12	4	55,21	**030**
4,0	14	6	15	60	12	4	71,43	**040**
5,0	16	6	15	60	12	4	74,18	**050**
6,0	20	8	19	67	16	4	96,75	**060**
8,0	24	8	23	71	16	4	129,30	**080**
9,0	26	8	29	85	25	4	136,80	**090**
10,0	28	8	29	85	25	4	157,90	**100**
12,0	34	10	34	90	25	4	240,60	**120**
15,0	46	16	44	100	25	6	330,60	**150**
16,0	48	16	44	100	25	6	389,00	**160**

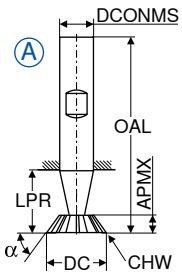
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

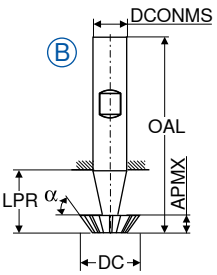
→ v_c/f_z Page 43

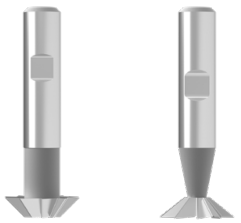
13

Single angle miling cutters HSS-E Co 5

H | λ_s=0° γ_s=0° | ZEFP







α°	DC mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Fig.	DIN 1833 B U6 Article no. 50 246 ... EUR		DIN 1833 B U6 Article no. 50 245 ... EUR	
45	16	4,0	15	60	12	0,3	10	A			71,43	016
	16	4,0	15	60	12		10	B	81,18	016		
	20	5,0	18	63	12	0,3	10	A			103,70	020
	20	5,0	18	63	12		10	B	109,20	020		
	25	6,3	22	67	12	0,3	10	A			126,20	025
	25	6,3	22	67	12		10	B	126,20	025		
60	16	6,3	15	60	12	0,3	10	A			81,18	116
	16	6,3	15	60	12		10	B	81,18	116		
	20	8,0	18	63	12	0,3	10	A			103,70	120
	20	8,0	18	63	12		10	B	103,70	120		
	25	10,0	22	67	12	0,3	10	A			112,30	125
	25	10,0	22	67	12		10	B	126,20	125		
70	16	7,0	15	60	12	0,3	10	A			81,18	216 1)
	20	9,0	18	63	12	0,3	10	A			103,70	220 1)
	25	11,0	19	67	16	0,3	10	A			126,20	225 1)

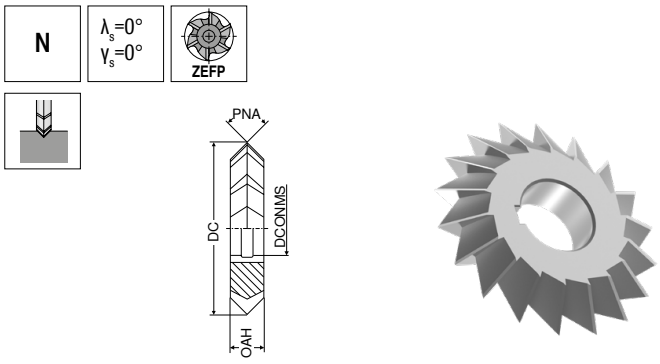
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

1) Factory standard

→ v_c/f_z Page 44

Double angle milling cutter HSS

▲ with keyway to DIN 138



DIN 847

U6

PNA °	DC mm	OAH mm	DCONMS mm	ZEFP	Article no. 50 360 ... EUR	
45	50	8	16	22	131,50	045
	63	10	22	24	164,30	145
	80	12	27	26	260,70	245
	100	18	32	28	389,00	345
60	50	10	16	18	131,50	060
	63	14	22	20	164,30	160
	80	18	27	22	302,00	260
	100	25	32	24	484,30	360
90	50	14	16	16	153,70	090
	63	20	22	18	196,00	190
	80	22	27	20	321,20	290
	100	32	32	24	535,20	390
120	50	14	16	16	174,80	120 1)
	63	20	22	16	254,40	121 1)

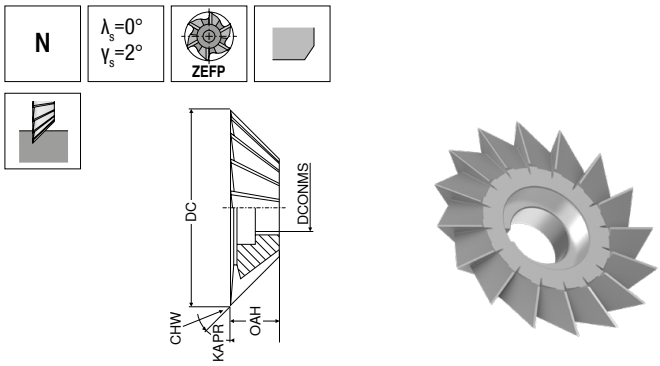
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

→ v_c/f_z Page 44

Shell type single angle milling cutter HSS

▲ with keyway to DIN 138



DIN 842 A

U6

KAPR °	DC mm	OAH mm	DCONMS mm	CHW mm	ZEFP	Article no. 50 362 ... EUR	
45	40	10	10	0,3	14	151,50	045
	50	13	13	0,3	16	207,70	145
	63	18	16	0,3	18	261,80	245
	80	22	22	0,3	20	369,80	345
	100	28	27	0,3	22	561,70	445
50	50	16	13	0,3	16	207,70	150
60	40	13	10	0,3	14	133,50	060
	50	16	13	0,3	16	164,30	160
	63	20	16	0,3	18	225,80	260
	80	25	22	0,3	20	369,80	360
	100	32	27	0,3	22	561,70	460
	125	40	32	0,3	28	925,20	560

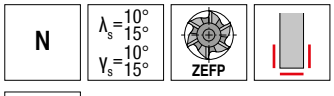
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 44

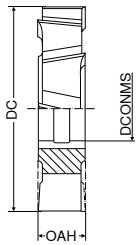
13

Side and face milling cutter HSS-E Co 5

▲ Coarse cross-pitched
▲ with keyway to DIN 138









DIN 885 A

U6

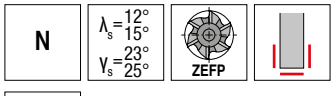
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 348 ...	
mm	mm	mm		EUR	
50	4	16	12	102,30	100
50	5	16	12	104,10	102
50	6	16	12	105,80	104
50	8	16	12	118,70	106
50	10	16	12	128,20	108
63	4	22	12	111,30	200
63	5	22	12	118,70	202
63	6	22	12	117,60	204
63	8	22	12	130,30	206
63	10	22	12	143,10	208
63	12	22	12	164,30	210
63	14	22	12	184,40	212
80	5	27	14	150,50	300
80	6	27	14	152,60	302
80	8	27	14	164,30	304
80	10	27	14	168,50	306
80	12	27	14	186,50	308
80	14	27	14	216,20	310
80	16	27	14	233,20	312
80	18	27	14	269,20	314
80	20	27	14	291,40	316
100	6	32	14	219,30	400
100	8	32	14	218,30	402
100	10	32	14	231,00	404
100	12	32	14	251,20	406
100	14	32	14	281,90	408
100	16	32	14	294,60	410
100	18	32	14	348,70	412
100	20	32	14	341,20	414
100	25	32	14	442,90	418
125	8	32	16	288,30	500
125	10	32	16	308,40	502
125	12	32	16	333,80	504
125	14	32	16	376,30	506
125	16	32	16	397,40	508
125	18	32	16	431,30	510
125	20	32	16	461,00	512
125	25	32	16	554,20	516
160	10	40	18	456,80	600
160	12	40	18	507,60	602
160	14	40	18	537,30	604
160	16	40	18	577,60	606
160	18	40	18	644,40	608
160	20	40	18	652,80	610
160	25	40	18	799,00	614
160	32	40	18	1.015,00	618

Steel	○
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

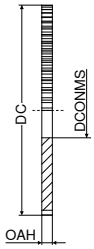
→ v_c/f_z Page 45

Narrow side and face milling cutter HSS-E Co 5

▲ Coarse cross-pitched
▲ with keyway to DIN 138









Factory standard

U6

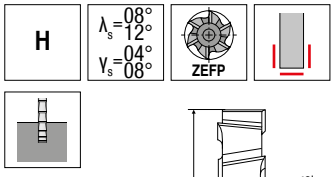
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 342 ...	
mm	mm	mm		EUR	
63	1,6	22	16	109,20	200
63	2,0	22	16	96,44	202
63	2,5	22	16	98,24	204
63	3,0	22	16	101,10	206
80	1,6	27	20	116,60	300
80	2,0	27	20	113,40	302
80	2,5	27	20	115,50	304
80	3,0	27	20	118,70	306
80	4,0	27	20	128,20	310
100	1,6	32	24	149,50	400
100	2,0	32	24	147,30	402
100	2,5	32	24	147,30	404
100	3,0	32	24	150,50	406
100	4,0	32	24	161,10	410
100	5,0	32	24	172,70	414
125	1,6	32	26	186,50	500
125	2,0	32	26	179,10	502
125	2,5	32	26	184,40	504
125	3,0	32	26	187,60	506
125	4,0	32	26	204,60	510
125	5,0	32	26	218,30	514
125	6,0	32	26	234,20	516
160	2,0	40	30	291,40	600
160	2,5	40	30	281,90	602
160	3,0	40	30	286,10	604
160	4,0	40	30	301,00	606
160	5,0	40	30	320,00	608
160	6,0	40	30	341,20	610
160	8,0	40	22	392,10	612

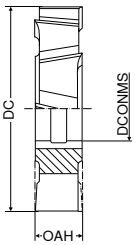
Steel	
Stainless steel	●
Cast iron	
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 45

Side and face milling cutter HSS-E Co 5

▲ Fine cross-pitched version
▲ with keyway to DIN 138







DIN 885 A

U6

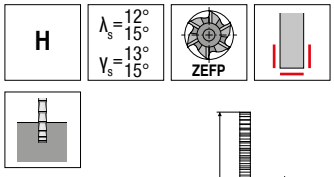
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 349 ...	
mm	mm	mm		EUR	
50	4	16	16	120,90	100
50	5	16	16	120,90	102
50	6	16	16	129,30	104
50	8	16	16	136,80	106
50	10	16	16	150,50	108
63	4	22	18	132,50	200
63	5	22	18	140,90	202
63	6	22	18	135,60	204
63	8	22	18	152,60	206
63	10	22	18	170,70	208
63	12	22	18	192,90	210
63	14	22	18	217,30	212
80	5	27	20	178,10	300
80	6	27	20	183,40	302
80	8	27	20	191,80	304
80	10	27	18	195,00	306
80	12	27	18	220,50	308
80	14	27	18	255,40	310
80	16	27	18	276,60	312
80	18	27	18	320,00	314
80	20	27	18	320,00	316
100	6	32	22	257,50	400
100	8	32	22	255,40	402
100	10	32	20	275,50	404
100	12	32	20	296,70	406
100	14	32	20	330,60	408
100	16	32	20	350,80	410
100	18	32	20	409,00	412
100	20	32	20	412,30	414
100	25	32	20	510,90	418
125	8	32	24	340,20	500
125	10	32	22	364,50	502
125	12	32	22	394,30	504
125	14	32	22	442,90	506
125	16	32	22	460,00	508
125	18	32	22	530,90	510
125	20	32	22	539,50	512
125	25	32	22	646,50	516
160	10	40	26	542,60	600
160	12	40	26	591,30	602
160	14	40	26	635,90	604
160	16	40	26	684,60	606
160	18	40	26	752,40	608
160	20	40	26	753,50	610
160	25	40	26	937,90	614
160	32	40	26	1.179,00	618

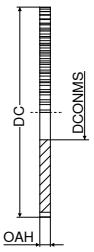
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 45

Narrow side and face milling cutter HSS-E Co 5

▲ Fine cross-pitched version
▲ with keyway to DIN 138







DIN 1834 A

U6

DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 340 ...	
mm	mm	mm		EUR	
63	1,6	22	28	104,30	200
63	2,0	22	28	89,87	202
63	2,5	22	28	91,78	204
63	3,0	22	28	94,11	206
80	1,6	27	32	108,10	300
80	2,0	27	32	105,50	302
80	2,5	27	32	107,00	304
80	3,0	27	32	110,20	306
80	4,0	27	32	118,70	310
100	1,6	32	36	131,50	400
100	2,0	32	36	130,30	402
100	2,5	32	36	130,30	404
100	3,0	32	36	132,50	406
100	4,0	32	36	140,90	410
100	5,0	32	36	154,80	414
125	1,6	32	40	170,70	500
125	2,0	32	40	164,30	502
125	2,5	32	40	169,50	504
125	3,0	32	40	172,70	506
125	4,0	32	40	183,40	510
125	5,0	32	40	196,00	514
125	6,0	32	40	217,30	516
160	2,0	40	48	271,30	600
160	2,5	40	48	261,80	602
160	3,0	40	48	266,00	604
160	4,0	40	48	284,00	606
160	5,0	40	48	298,90	608
160	6,0	40	48	323,20	610
160	8,0	40	36	366,70	612

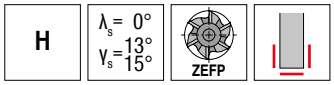
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 45

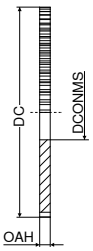
13

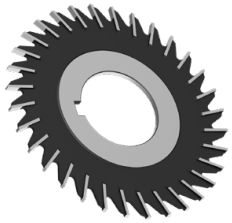
Narrow side and face milling cutter HSS-E Co 5

- straight cut
- with keyway to DIN 138









DC js16	OAH k11	DCONMS H7	ZEFP	DIN 1834 B U6 Article no. 50 341 ...	
mm	mm	mm		EUR	
63	1,6	22	32	119,80	200
63	2,0	22	32	106,00	202
63	2,5	22	32	108,10	204
63	3,0	22	32	111,30	206
80	1,6	27	36	129,30	300
80	2,0	27	36	125,00	302
80	2,5	27	36	126,20	304
80	3,0	27	36	131,50	306
80	4,0	27	36	138,80	310
100	1,6	32	40	152,60	400
100	2,0	32	40	152,60	402
100	2,5	32	40	152,60	404
100	3,0	32	40	154,80	406
100	4,0	32	40	168,50	410
100	5,0	32	40	177,00	414
125	1,6	32	44	206,70	500
125	2,0	32	44	197,10	502
125	2,5	32	44	204,60	504
125	3,0	32	44	208,70	506
125	4,0	32	44	222,60	510
125	5,0	32	44	239,50	514
125	6,0	32	44	262,80	516
160	2,0	40	52	320,00	600
160	2,5	40	52	307,30	602
160	3,0	40	52	313,70	604
160	4,0	40	52	330,60	606
160	5,0	40	52	351,80	608
160	6,0	40	52	375,10	610
160	8,0	40	40	430,30	612

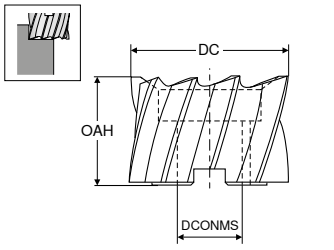
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

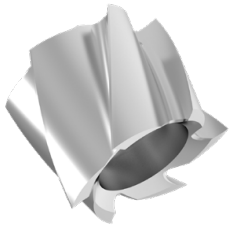
→ v_c/f_z Page 45

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

W | λ_s=30° γ_s=24° | ZEFP





DC $_{k10}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 255 ...	
mm	mm	mm		EUR	
40	32	16	6	212,00	040
50	36	22	6	242,70	050
63	40	27	6	308,40	063
80	45	27	6	499,20	080
100	50	32	6	785,30	100

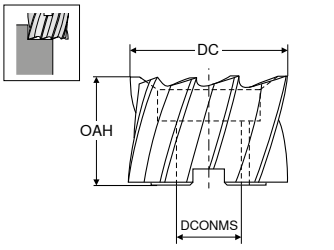
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

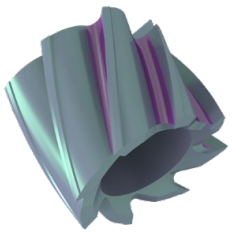
→ v_c/f_z Page 46+47

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

N | λ_s=25° γ_s=10° | ZEFP | Ti100 Pro





DC $_{k10}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 54 035 ...	
mm	mm	mm		EUR	
40	32	16	8	240,60	040
50	36	22	8	308,40	050
63	40	27	8	391,00	063
80	45	27	10	584,00	080
100	50	32	12	914,60	100

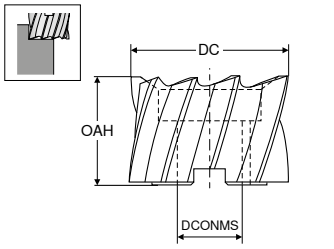
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

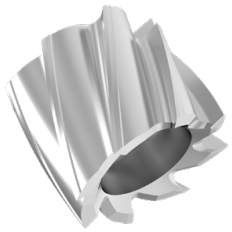
→ v_c/f_z Page 46+47

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

N | λ_s=25° γ_s=10° | ZEFP





DC $_{k10}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 250 ...	
mm	mm	mm		EUR	
40	32	16	8	168,50	040
50	36	22	8	220,50	050
63	40	27	8	303,10	063
80	45	27	10	457,80	080
100	50	32	12	723,80	100

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

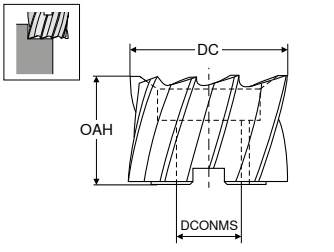
→ v_c/f_z Page 46+47

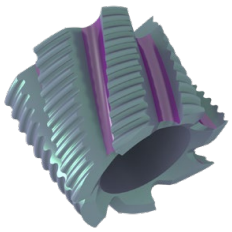
Roughing-finishing face milling cutters HSS-Co 5

▲ with keyway to DIN 138

▲ Manufacturing tolerance lies on the plus range of the tolerance js14

NF | λ_s=25° γ_s=12° | ZEFP | Ti100 Pro





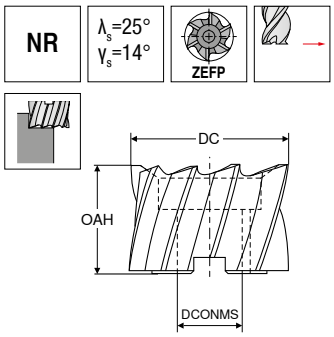
DC $_{js14}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 54 036 ...	
mm	mm	mm		EUR	
40	32	16	7	228,90	040
50	36	22	8	293,60	050
63	40	27	8	448,20	063
80	45	27	10	656,00	080
100	50	32	12	995,10	100

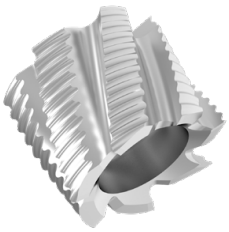
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Roughing face milling cutters HSS-E Co 5

- with keyway to DIN 138
- Manufacturing tolerance lies on the plus range of the tolerance js14





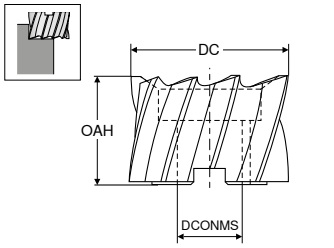
DC js14	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 260 ... EUR	
mm	mm	mm			
40	32	16	7	171,70	040
50	36	22	8	226,80	050
63	40	27	8	305,20	063
80	45	27	10	428,20	080
100	50	32	12	658,10	100

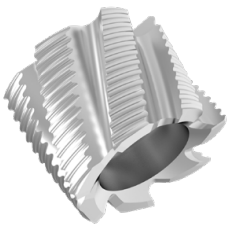
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Roughing-finishing face milling cutters HSS-E Co 8

- with keyway to DIN 138
- Manufacturing tolerance lies on the plus range of the tolerance js14





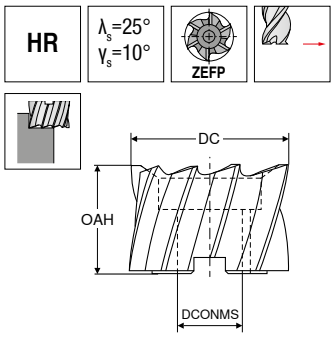
DC js14	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 297 ... EUR	
mm	mm	mm			
40	32	16	7	171,70	040
50	36	22	8	226,80	050
63	40	27	8	305,20	063
80	45	27	10	428,20	080
100	50	32	12	658,10	100

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

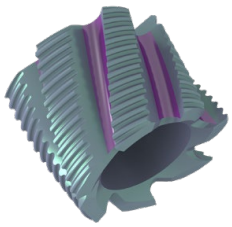
→ v_c/f_z Page 46+47

Roughing-finishing face milling cutters HSS-E Co 8

- with keyway to DIN 138
- Manufacturing tolerance lies on the plus range of the tolerance js14



Ti100 Pro



DC js14	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 54 037 ... EUR	
mm	mm	mm			
40	32	16	7	240,60	040
50	36	22	8	301,00	050
63	40	27	8	465,20	063
80	45	27	10	682,50	080
100	50	32	12	1.031,00	100

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data – slot and end milling cutters

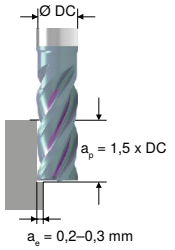
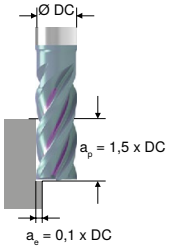
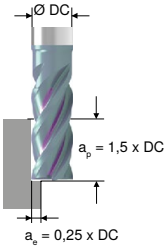
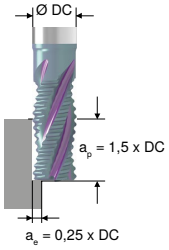
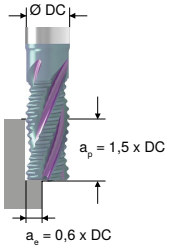
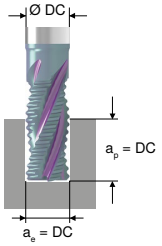
		uncoated	Ti100 Pro	Powder steel	● 1st choice		○ suitable
				Ti100 Pro			
Index	Kf f_z	v_c in m/min			Emulsion	Compressed air	MMS
1.1	1,2	30–40	60–80	65–90	●		
1.2	1,2	25–35	50–65	55–75	●		
1.3	1,2	20–30	45–55	50–65	●		
1.4	1	15–25	40–55	45–65	●		
1.5	1,2	20–30	45–55	50–60	●		
1.6	1	15–20	30–35	35–45	●		
1.7	1,2	20–30	40–55	45–65	●		
1.8	0,8	15–20	30–35	35–45	●		
1.9	1,2	20–30	45–55	50–60	●		
1.10	1	15–20	30–35	35–45	●		
1.11	0,8	15–20	30–35	35–45	●		
1.12	0,8	15–20	30–35	35–45	●		
1.13							
1.14							
1.15	0,8	12–18	25–30	30–40	●		
1.16	0,8	10–15	20–25	25–35	●		
2.1	1	10–15	20–30	25–35	●		
2.2	1	10–15	20–30	25–35	●		
2.3	1	8–12	15–25	20 -30	●		
2.4	0,9	7–10	15–20	20–30	●		
2.5	1	5–8	10–15	15–20	●		
2.6	1	10–15	20–30	25–35	●		
2.7							
3.1	1	18–25	35–45	40 -55	●		
3.2	1	18–25	25–30	30–40	●		
3.3	1	15–20	30–35	35–45	●		
3.4	1	15–20	30–35	35–45	●		
3.5	1	15–25	35–40	40–50	●		
3.6	1	15–20	35–40	40–50	●		
3.7	1	15–20	30–35	35–45	●		
3.8	0,8	12–18	25–30	30–40	●		
4.1	1,9	150–180	240–280	260–300	●		
4.2	1,9	100–130	130–160	150–180	●		
4.3	1,8		100–140	140–160	●		
4.4	1,7		60–130	80–150	●		
4.5							
4.6	1,2	30–50	60–80	80–100	●		
4.7	1,1		110–150	130–170	●		
4.8	0,9	5–10	10–15	20–25	●		
4.9							
4.10							
4.11	1,1		100–140	130–170	●		
4.12	1,1	80–120	120–150	140–180	●		
4.13	2	20–30	25–45	40–60	●		
4.14	2	30–40	50–70	70–90	●		
4.15							
4.16	1,8	90–120	140–170	160–190		●	
4.17	1		30–40	40–50		●	
4.18	1,1		10–20	15–25	●		
4.19							
5.1	1,1	5–10	10–15	15–20	●		
5.2							
5.3							
5.4							
5.5							
5.6							
5.7							
5.8							
5.9	1	10–15	15–25	25–35	●		
5.10	1,1	10–15	15–20	25–35	●		
5.11							
6.1							
6.2							
6.3							
6.4							
6.5							

For full slot milling reduce the cutting speed (v_c), indicated in this table by approx. 15–20 %!

Kf f_z = Correction factor for feed per tooth

Feed per tooth for HSS end mills

Appoximate values (in mm) for the feed per tooth (f_z)

	Peripheral milling										Full slot milling	
												
	f_z in mm		f_z in mm		f_z in mm		f_z in mm		f_z in mm		f_z in mm	
Ø DC mm	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated
2	0,008	0,009	0,008	0,009	0,008	0,009						
3	0,011	0,012	0,010	0,012	0,009	0,010						
4	0,017	0,018	0,014	0,015	0,013	0,014	0,015	0,016	0,013	0,014	0,011	0,012
5	0,024	0,026	0,018	0,020	0,014	0,015	0,019	0,021	0,016	0,018	0,014	0,016
6	0,032	0,035	0,022	0,024	0,015	0,017	0,024	0,027	0,020	0,022	0,018	0,019
8	0,047	0,051	0,029	0,032	0,020	0,022	0,032	0,036	0,027	0,030	0,024	0,026
10	0,065	0,072	0,037	0,041	0,026	0,028	0,042	0,047	0,035	0,039	0,031	0,034
12	0,084	0,091	0,044	0,049	0,031	0,034	0,051	0,057	0,043	0,047	0,037	0,041
14	0,100	0,106	0,054	0,059	0,037	0,041	0,063	0,069	0,053	0,058	0,045	0,050
16	0,111	0,121	0,061	0,067	0,042	0,046	0,072	0,079	0,060	0,066	0,052	0,057
18	0,126	0,136	0,070	0,077	0,048	0,053	0,084	0,093	0,071	0,078	0,061	0,067
20	0,141	0,151	0,076	0,083	0,052	0,057	0,092	0,101	0,077	0,084	0,066	0,073
22	0,160	0,166	0,085	0,094	0,059	0,065	0,104	0,114	0,087	0,096	0,075	0,082
25	0,170	0,188	0,095	0,104	0,065	0,072	0,117	0,129	0,098	0,108	0,084	0,093
28	0,196	0,210	0,109	0,120	0,075	0,083	0,136	0,150	0,114	0,125	0,098	0,108
32	0,212	0,240	0,124	0,137	0,086	0,094	0,157	0,173	0,131	0,145	0,113	0,125
36	0,224	0,240	0,144	0,159	0,099	0,109	0,170	0,194	0,142	0,162	0,126	0,140
40	0,240	0,240	0,157	0,173	0,108	0,119	0,184	0,202	0,154	0,169	0,132	0,146
45	0,240	0,240	0,157	0,173	0,108	0,119	0,200	0,220	0,170	0,180	0,140	0,160
50	0,240	0,240	0,157	0,173	0,108	0,119	0,200	0,220	0,170	0,180	0,140	0,160

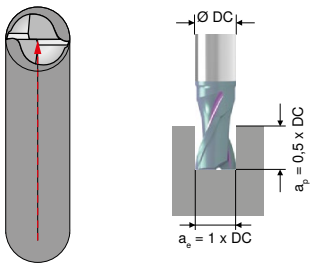
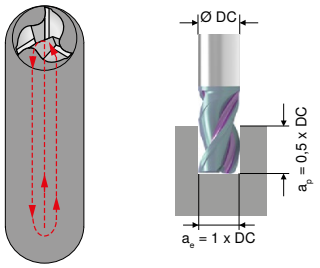
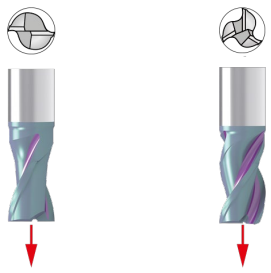
Attention:
In the case of uncoated milling cutters climb milling is preferred to conventional milling. When using coated milling cutters climb milling is necessary in order to achieve optimum results.

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 40**.

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Feed per tooth when milling parallel key slots with HSS slot drills

Appoximate values (in mm) for the feed per tooth (f_z)

	Full slot milling (in one cut)		Profile slot milling (internal profile milling)				Circular ramping			
										
			Roughing cut		Finishing cut					
	f_z in mm		f_z in mm				f_z in mm			
Ø DC mm	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated
2	0,005	0,006	0,005	0,006	0,008	0,009	0,003	0,003	0,002	0,002
3	0,009	0,010	0,009	0,010	0,015	0,016	0,004	0,005	0,003	0,003
4	0,012	0,013	0,012	0,013	0,022	0,024	0,006	0,007	0,004	0,004
5	0,016	0,017	0,016	0,017	0,030	0,033	0,008	0,009	0,005	0,006
6	0,020	0,022	0,020	0,022	0,039	0,043	0,010	0,011	0,007	0,007
8	0,026	0,029	0,026	0,029	0,055	0,061	0,013	0,014	0,009	0,010
10	0,034	0,037	0,034	0,037	0,075	0,082	0,017	0,019	0,011	0,012
12	0,040	0,044	0,040	0,044	0,093	0,101	0,020	0,022	0,013	0,015
14	0,049	0,054	0,049	0,054	0,117	0,118	0,024	0,027	0,016	0,018
16	0,056	0,062	0,056	0,062	0,135	0,135	0,028	0,031	0,019	0,021
18	0,065	0,072	0,065	0,072	0,151	0,151	0,033	0,036	0,022	0,024
20	0,071	0,078	0,071	0,078	0,167	0,167	0,035	0,039	0,024	0,026
22	0,080	0,088	0,080	0,088	0,184	0,184	0,040	0,044	0,027	0,029
25	0,089	0,098	0,089	0,098	0,208	0,208	0,044	0,049	0,030	0,033
28	0,103	0,113	0,103	0,113	0,233	0,233	0,051	0,056	0,034	0,037
32	0,118	0,130	0,118	0,130	0,260	0,260	0,060	0,065	0,040	0,043
36	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
40	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
45	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
50	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043

Attention:
In the case of uncoated milling cutters climb milling is preferred to conventional milling. When using coated milling cutters climb milling is necessary in order to achieve optimum results.

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 40.**

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Cutting data standard values – form cutters

		50 241 ...			50 240 ...					50 234 ...					50 248 ...				● 1st choice		○ suitable
		Ø DC 21–25 mm	Ø DC 28–36 mm	Ø DC 40–45 mm	Ø DC 11–16 mm	Ø DC 18–22 mm	Ø DC 25–32 mm	Ø DC 36–45 mm	Ø DC 50–60 mm		Ø DC 10–17 mm	Ø DC 19–26 mm	Ø DC 28–33 mm	Ø DC 33–46 mm	Ø DC 8–11 mm	Ø DC 12–24 mm	Ø DC 26–34 mm	Ø DC 46–48 mm	Emulsion	Compressed air	MMS
Index	v_c m/min	f_z mm			f_z mm					v_c m/min	f_z mm				f_z mm						
1.1	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.2	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.3	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.4	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.5	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.6	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
1.7	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
1.8																					
1.9	20	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	20	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
1.10																					
1.11																					
1.12																					
1.13																					
1.14																					
1.15																					
1.16																					
2.1	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.2	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.3	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.4																					
2.5																					
2.6	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.7																					
3.1	28	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	24	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.2																			●		
3.3	22	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	22	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.4	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.5	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.6	15	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	15	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12			
3.7	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.8	15	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	15	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12			
4.1	100	0,1	0,12	0,15	0,02	0,045	0,045	0,045	0,055	90	0,03	0,04	0,06	0,07	0,035	0,07	0,14	0,15			
4.2	100	0,1	0,12	0,15	0,02	0,045	0,045	0,045	0,055	90	0,03	0,04	0,06	0,07	0,035	0,07	0,14	0,15	●		
4.3	80	0,09	0,11	0,13	0,015	0,04	0,035	0,04	0,045	80	0,03	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.4	60	0,09	0,11	0,13	0,015	0,04	0,035	0,04	0,045	60	0,03	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.5																					
4.6	25	0,08	0,1	0,12	0,015	0,04	0,035	0,03	0,035	25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.7	20	0,08	0,1	0,12	0,015	0,04	0,035	0,03	0,035	20	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.8																					
4.9																					
4.10																					
4.11	50	0,09	0,11	0,13	0,015	0,03	0,03	0,03	0,04	45	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.12	25	0,09	0,11	0,13	0,015	0,03	0,03	0,03	0,04	25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.13	80	0,12	0,15	0,18	0,025	0,06	0,055	0,055	0,07	80	0,04	0,05	0,07	0,09	0,045	0,1	0,18	0,18	●		
4.14	65	0,12	0,15	0,18	0,025	0,06	0,055	0,055	0,07	65	0,04	0,05	0,07	0,09	0,045	0,1	0,18	0,18	●		
4.15																					
4.16	70	0,1	0,12	0,15	0,018	0,04	0,03	0,035	0,045	70	0,03	0,035	0,05	0,06	0,025	0,06	0,1	0,12	●		
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3																					
5.4																					
5.5																					
5.6																					
5.7																					
5.8																					
5.9	20	0,06	0,08	0,1	0,012	0,025	0,025	0,025	0,035	20	0,015	0,025	0,035	0,045	0,02	0,05	0,07	0,09			
5.10																					
5.11																					
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

13

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values – form cutters

		50 245 ... / 50 246 ...			50 360 ...					50 362 ...				● 1st choice		○ suitable
		Ø DC 16 mm a_e= 3,2	Ø DC 20 mm a_e= 4	Ø DC 25 mm a_e= 5		Ø DC 50 mm a_e= 5	Ø DC 63 mm a_e= 6,3	Ø DC 80 mm a_e= 8	Ø DC 100 mm a_e= 10	Ø DC 40–50 mm	Ø DC 63 mm	Ø DC 80 mm	Ø DC 100 mm			
Index	v_c m/min	f_z mm			v_c m/min	f_z mm				f_z mm				Emulsion	Compressed air	MMS
1.1	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.2	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.3	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.4	28	0,01	0,015	0,018	22	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
1.5	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.6	22	0,01	0,015	0,018	20	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
1.7	22	0,01	0,015	0,018	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.8																
1.9	20	0,01	0,015	0,015	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.10																
1.11																
1.12																
1.13																
1.14																
1.15																
1.16																
2.1	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
2.2	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
2.3	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
2.4																
2.5																
2.6	10	0,007	0,01	0,015										●		
2.7																
3.1	24	0,01	0,012	0,015	19	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.2					12	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.3	22	0,01	0,012	0,015	15	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.4	20	0,01	0,012	0,015	12	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.5	20	0,01	0,012	0,015	16	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.6	15	0,01	0,012	0,015												
3.7	20	0,01	0,012	0,015	13	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.8	15	0,01	0,012	0,015												
4.1	90	0,01	0,015	0,02												
4.2	90	0,01	0,015	0,02	70	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
4.3	80	0,01	0,015	0,02	60	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
4.4	60	0,01	0,015	0,02	60	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
4.5																
4.6	25	0,01	0,015	0,02	18	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.7	20	0,01	0,015	0,02	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.8																
4.9																
4.10																
4.11	45	0,01	0,015	0,02	40	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.12	25	0,01	0,015	0,015	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.13	80	0,018	0,02	0,025	65	0,015	0,02	0,025	0,03	0,008	0,012	0,018	0,022	●		
4.14	65	0,018	0,02	0,025	60	0,015	0,02	0,025	0,03	0,008	0,012	0,018	0,022	●		
4.15																
4.16	70	0,01	0,015	0,0175	45	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,01	●		
4.17																
4.18																
4.19																
5.1																
5.2																
5.3																
5.4																
5.5																
5.6																
5.7																
5.8																
5.9	20	0,008	0,01	0,015	20	0,008	0,01	0,012	0,016	0,005	0,007	0,009	0,012	●		
5.10																
5.11																
6.1																
6.2																
6.3																
6.4																
6.5																

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data – side and face cutters

		uncoated						● 1st choice		○ suitable
		Ø DC 50 mm	Ø DC 63 mm	Ø DC 80 mm	Ø DC 100 mm	Ø DC 125 mm	Ø DC 160 mm			
Index	v_c in m/min	f_z mm						Emulsion	Compressed air	MMS
1.1	30–40	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.2	30–40	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.3	30–40	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.4	20–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.5	20–25	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.6	15–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.7	20–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.8	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.9	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.10	15–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.11	12–18	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.12	15–20	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.13										
1.14										
1.15	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.16	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
2.1	12–18	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.2	10–15	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.3	8–12	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.4	7–10	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
2.5	5–8	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.6	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
2.7										
3.1	20–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.2	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.3	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.4	15–20	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.5	25–35	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.6	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.7	25–35	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.8	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.1	150–180	0,06–0,075	0,075–0,09	0,009–0,1	0,01–0,12	0,12–0,135	0,135–0,15	●		
4.2	100–130	0,06–0,075	0,075–0,09	0,009–0,1	0,01–0,12	0,12–0,135	0,135–0,15	●		
4.3	80–100	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
4.4	40–60	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
4.5										
4.6	30–50	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
4.7	90–110	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.8	5–10	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
4.9										
4.10										
4.11	80–100	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.12	80–120	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.13	20–30	0,08–0,1	0,1–0,12	0,12–0,14	0,14–0,16	0,16–0,18	0,18–0,2	●		
4.14	30–40	0,08–0,1	0,1–0,12	0,12–0,14	0,14–0,16	0,16–0,18	0,18–0,2	●		
4.15										
4.16	90–120	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12		●	
4.17										
4.18										
4.19										
5.1	5–10	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9	10–15	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
5.10	10–15	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

Feed correction factor (Kf f_z) for side and face cutters in relation to the cutting depth (a_e)

a_e	Kf f_z
0,05 x DC	1,4
0,1 x DC	1,0
0,15 x DC	0,8
0,2 x DC	0,7
0,25 x DC	0,6

The indicated feed rates apply to straight pitched cutters with a cutting depth of 0.1 x DC! With cross-pitched cutters the feed rate is to be reduced by 50 %!

13

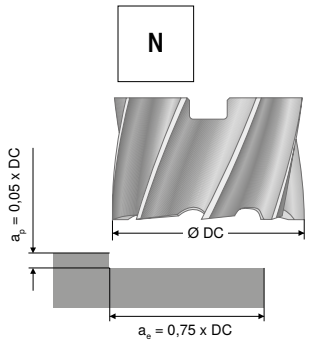
Cutting data – face mills

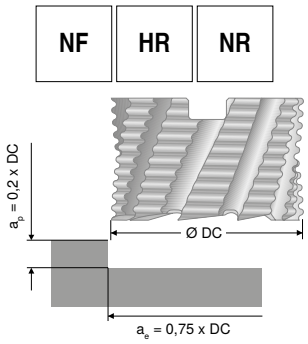
		uncoated	Ti100 Pro	● 1st choice		○ suitable
				Emulsion	Compressed air	MMS
Index	Kf f_z	v_c in m/min				
1.1	**1,2**	**25–30**	**50–60**	●		
1.2	**1,2**	**25–30**	**45–55**	●		
1.3	**1,2**	**25–30**	**45–55**	●		
1.4	**1**	**20–25**	**40–50**	●		
1.5	**1,2**	**20–25**	**40–50**	●		
1.6	**1**	**15–30**	**30–40**	●		
1.7	**1,2**	**20–25**	**40–50**	●		
1.8	**0,8**	**10–15**	**20–30**	●		
1.9	**1,2**	**18–25**	**35–45**	●		
1.10	**1**	**15–30**	**30–40**	●		
1.11	**0,8**	**12–18**	**25–35**	●		
1.12	**0,8**	**15–20**	**30–40**	●		
1.13						
1.14						
1.15	**0,8**	**10–15**	**20–30**	●		
1.16	**0,8**	**10–15**	**20–30**	●		
2.1	**1**	**12–18**	**20–25**	●		
2.2	**1**	**10–15**	**15–20**	●		
2.3	**1**	**8–12**	**20–25**	●		
2.4	**0,9**	**7–10**	**15–20**	●		
2.5	**1**	**5–8**	**10–15**	●		
2.6	**1**	**10–15**	**15–20**	●		
2.7						
3.1	**1**	**20–30**	**30–40**	●		
3.2	**1**	**18–25**	**30–35**	●		
3.3	**1**	**18–25**	**30–35**	●		
3.4	**1**	**15–20**	**25–30**	●		
3.5	**1**	**25–35**	**35–40**	●		
3.6	**1**	**18–25**	**30–35**	●		
3.7	**1**	**25–35**	**35–40**	●		
3.8	**1**	**18–25**	**30–35**	●		
4.1	**1,5**	**150–180**		●		
4.2	**1,5**	**100–130**		●		
4.3	**1,3**	**80–100**		●		
4.4	**1,3**	**40–60**		●		
4.5						
4.6	**1,2**	**30–50**	**60–80**	●		
4.7	**1,1**	**90–110**	**120–150**	●		
4.8	**0,9**	**5–10**	**10–15**	●		
4.9						
4.10						
4.11	**1,1**	**80–100**	**110–140**	●		
4.12	**1,1**	**80–120**	**120–150**	●		
4.13	**2**	**20–30**	**25–45**	●		
4.14	**2**	**30–40**	**50–70**	●		
4.15						
4.16	**1,3**	**90–120**	**120–140**		●	
4.17	**1**		**30–40**		●	
4.18	**1,1**		**15–25**	●		
4.19						
5.1	1,1	5–10	10–15	●		
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9	1	10–15	15–25	●		
5.10	1,1	10–15	15–20	●		
5.11	0,8		10–15	●		
6.1						
6.2						
6.3						
6.4						
6.5						

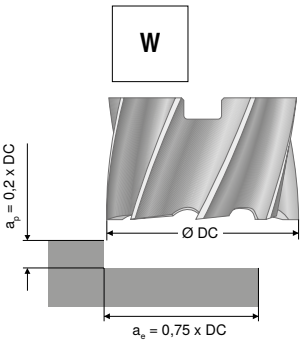
Kf f_z = Correction factor for feed per tooth

Feed per tooth for HSS face mills

Appoximate values (in mm) for the feed per tooth (f_z)







	f_z in mm		f_z in mm		f_z in mm
Ø DC mm	uncoated	Ti100 Pro	uncoated	Ti100 Pro	uncoated
40	0,049	0,054	0,064	0,070	0,060
50	0,055	0,060	0,071	0,078	0,066
63	0,061	0,067	0,079	0,087	0,074
80	0,065	0,071	0,084	0,092	0,078
100	0,059	0,065	0,076	0,084	0,071

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 46**.

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Formula for cutting data calculation

Designation	Abbreviation	Unit	Formula
Number of revolutions	n	min^{-1}	$n = \frac{v_c \times 1000}{DC \times \pi}$
Cutting speed	v_c	m/min	$v_c = \frac{DC \times \pi \times n}{1000}$
Feed per tooth	f_z	mm	$f_z = \frac{v_f}{ZEFP \times n}$ $f_z = h_m \times \sqrt{\frac{DC}{a_e}}$
Feed per revolution	f	mm	$f = f_z \times ZEFP$
Feed rate	v_f	mm/min	$v_f = f_z \times ZEFP \times n$
Average chip thickness	h_m	mm	$h_m = f_z \times \sqrt{\frac{a_e}{DC}}$

ZEFP = Number of teeth
a_e = Cutting width (for side milling cutter cutting depth)
DC = Cutting diameter

Coating

Ti100 Pro

- ▲ Ti multilayer coating
- ▲ HV0.05 = 3500
- ▲ Coefficient of friction (against steel) = 0.7
- ▲ Maximum application temperature: 900 °C

New products for machining technicians

NEW MonsterMill – TCR



TCR

→ Page 23–27

High-performance milling cutter for machining titanium and heat-resistant materials

---

NEW MonsterMill – HCR



HCR

→ Page 28–33

The specialist for hardened steels

NEW CircularLine – CCR-Ti



CCR Ti

→ Page 46

Trochoidal milling cutter for titanium and heat-resistant materials

---

NEW CircularLine – CCR-H



CCR H

→ Page 47

Trochoidal milling cutter for hardened steels

NEW MultiChange – Torus cutter



AL

→ Page 119

High-volume milling cutter for aluminium machining

NEW MultiChange – Shoulder mill



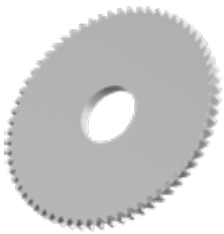
PCR UNI | PCR ALU

→ Page 120

PCR plunge milling cutter – now also with MultiChange interface

---

NEW Circular saw blades



→ Page 228–230



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters 14
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation 2
Toolfinder 3–5
List of contents 6–12
Product programme 13–242
Technical Information
Selection guide for cutters for plastic, fiberglass, carbon fibre 231
Cutting Data 243–355
Approximate feed rates 356
Slot milling via Trochoidoidal procedures 357
General references 358–362
Coatings 363

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank



Shank type


Length: extra short / short / medium / long / extra long


Central internal coolant


Lateral internal coolant



Cutting edge preparation


Sharp


Chamfer (CHW = chamfer width in mm)


Radius


Full Radius



Application



High volume machining



High-feed milling



Hard materials


Machining example


The red arrows describe the possible feed directions



Number of teeth

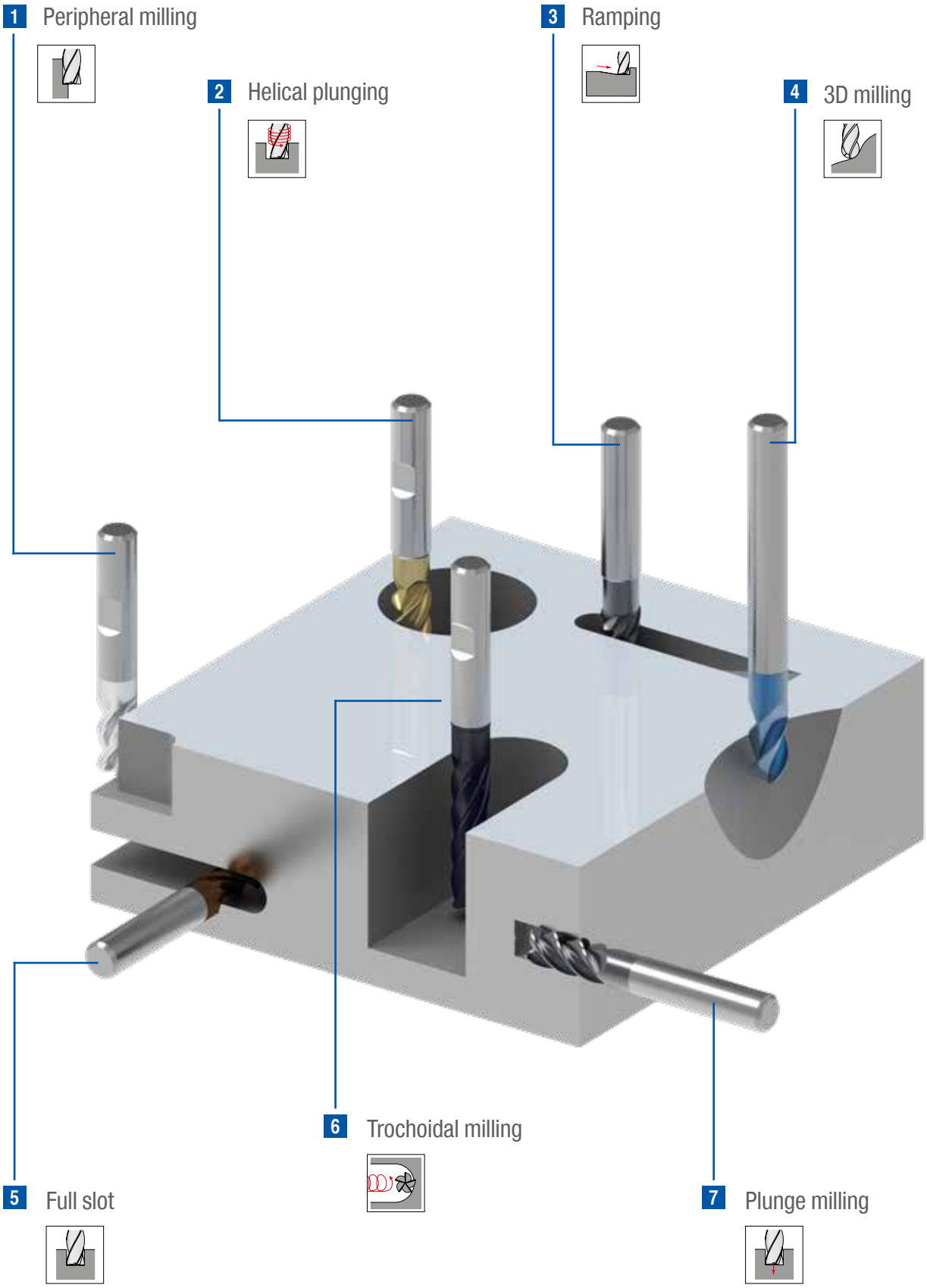


Cutting geometry
λ_s = Helix Angle
γ_s = Rake Angle


Trochoidal milling

● = **Main Application**
○ = Extended application

Toolfinder for High Performance Milling Cutters



Toolfinder for High Performance Milling Cutters

	1 Peripheral milling	2 Helical plunging	3 Ramping	4 3D milling
Steel	S-Cut MonsterMill – SCR SilverLine	MCR MonsterMill – PCR	MCR MonsterMill – PCR	MonsterMill – SCR SilverLine
Stainless steel	S-Cut MonsterMill – ICR SilverLine	MonsterMill – PCR MonsterMill – ICR	MonsterMill – PCR MonsterMill – ICR	SilverLine
Cast iron	S-Cut MonsterMill – SCR SilverLine	MCR MonsterMill – PCR	MCR MonsterMill – PCR	MonsterMill – SCR SilverLine
Non-ferrous metals	AluLine	MonsterMill – PCR AluLine	MonsterMill – PCR AluLine	AluLine
Heat resistant alloys	MonsterMill – ICR MonsterMill – TCR	MonsterMill – ICR MonsterMill – TCR	MonsterMill – ICR MonsterMill – TCR	MonsterMill – TCR
Hardened steel < 55 HRC	BlueLine	BlueLine	BlueLine	BlueLine
Hardened steel > 55 HRC	MonsterMill – HCR	MonsterMill – HCR	MonsterMill – HCR	MonsterMill – HCR

MonsterMill – SCR
Page 13–20

▲ THE specialist for machining steel

SCR



HA
HB

ZEFP: 3–6
Ø DC mm: 3–20

MonsterMill – ICR
Page 21+22

▲ THE specialist for machining stainless steel

ICR



HB

ZEFP: 3–5
Ø DC mm: 1,5–20

MonsterMill – TCR
Page 23–27

▲ THE specialist for machining titanium

TCR



HB

ZEFP: 2–5
Ø DC mm: 2–20

MonsterMill – HCR
Page 28–33

▲ THE specialist for finish machining up to 70 HRC hardness

HCR



HA

ZEFP: 2–4
Ø DC mm: 0,2–12

MonsterMill – PCR
Page 34–36

▲ THE specialist for ramping and helical milling
▲ Available versions: PCR-UNI, PCR-ALU

PCR



HB

ZEFP: 4
Ø DC mm: 5–20

MonsterMill – MCR
Page 37

▲ THE specialist for rough machining

MCR



HB

ZEFP: 3–4
Ø DC mm: 1–20

	5 Full slot	6 Trochoidal milling	7 Plunge milling
	S-Cut MonsterMill – SCR SilverLine	CircularLine	MonsterMill – PCR
	S-Cut MonsterMill – ICR SilverLine	CircularLine	
	S-Cut MonsterMill – SCR SilverLine	CircularLine	MonsterMill – PCR
	AluLine	CircularLine	MonsterMill – PCR
	MonsterMill – ICR MonsterMill – TCR	CircularLine	
	BlueLine	CircularLine	
		CircularLine	

CircularLine
Page 38–47

- THE specialist for trochoidal milling
- Available versions: CCR-UNI, CCR-AL, CCR-Ti, CCR-H

CCR



HB

ZEFP: 4–6

Ø DC mm: 6–20

AluLine
Page 48–69

- THE specialist for machining non-ferrous metals

W



HA
HB

ZEFP: 2–6

Ø DC mm: 2–25

SilverLine
Page 70–81

- The all-rounder

N



HA
HB

ZEFP: 3–6

Ø DC mm: 3–25

S-Cut
Page 82–87

- All-rounder with soft cut and low power consumption

SC UNI



HB

ZEFP: 4–5

Ø DC mm: 3–25

BlueLine
Page 88–113

- For all types of machining in hardened steels up to 65 HRC

H



HA
HB

ZEFP: 2–10

Ø DC mm: 0,1–20

14

Overview High Performance Milling Cutters

MonsterMill

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance
	SCR	4–6	3–20	●	○	●	○	○	○		■	■		■	HPC	■		13–18
	SCR	3–4	3–16	●	○	●	○	○	○				■	■	HPC	■		19
	SCR	4	3–16	●		●	○		○			■		■	HPC	■		20
	ICR	3–5	1,5–20	○	●	○	○	●	○		■			■	HPC	■		21+22
	TCR	4–5	4–20		○			●				■		■	HPC	■	□	23–25
	TCR	4	2–16		○			●					■	■		■	□	26
	TCR	2–5	2–16		○			●				■		■	HPC	■	□	27
	HCR	2–4	0,2–12	○					●			■		■		■		28–30
	HCR	2–4	0,2–12	○					●				■	■		■		31–33
	PCR UNI	4	5,7–20	●	○	●						■		■	HPC	■		34+35
	PCR ALU	4	5–20				●					■		■	HPC	■		36
	MCR	3–4	1–20	●	○	●	○	○	○		■			■	HPC	■		37

CircularLine

	CCR UNI	5–6	6–20	●	○	●		○			■	■		■	HPC	■		38–42
	CCR AL	4	6–20				●				■	■		■		■		43–45
	CCR Ti	5	6–20		○			●				■		■	HPC	■	□	46
	CCR H	6	6–20						●			■		■		■		47

Overview High Performance Milling Cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance
AluLine																		
	W	2	2–20				● HA				■			■		■	□	48+49
	W	3	3–20				● HA			■				■		■	□	50+51
	W	3	3–20				● HA		HB		■			■	HPC	■		52–54
	W	3	5–20				● HA		HB			■		■			□	55+56
	W	3	3–20				● HA					■		■	HPC	■		57–59
	WF	3	5–20				● HA		HB			■		■		■		60
	WR	3	6–20				● HA		HB		■			■	HPC	■		61+62
	W	4	3–25				● HA		HB		■			■	HPC	■	□	63–67
	W	6	6–20				● HA			■				■	HPC	■		68
	W	2	3–20				● HA						■	■			□	69
SilverLine																		
	N	3	3–20	●	●	○	○	●	HB		■	■		■	HPC	■		70+71
	N	4	3–20	●	●	●	○	●	HB		■	■		■	HPC	■		72–77
	N	6	6–25	●	●	○	○	●	HA	■				■		■		78
	N	3	4–20	●	●	○	○	●	HA				■	■	HPC	■		79
	H	4	6–20	●		●	○		● HA			■		■	HPC	■		80+81
S-Cut																		
	SC UNI	4	3–25	●	●	●	○	○	○ HB	■	■	■		■	HPC	■		82–86
	SC UNI	5	6–20	●	●	●		○	HB		■			■	HPC	■		87

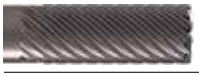
14

Overview High Performance Milling Cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance
BlueLine																		
	H	2	0,2–3	● HA					●	■				■		■		88–90
	H	2	0,2–3	● HA					●				■	■		■		91–93
	H	2	0,4–3	● HA					●			■		■		■		94–97
	H	2	0,5–20	● HA					●		■			■		■		98
	H	4–6	1–20	● HA					● HB			■		■		■		99–101
	H	4–10	2–20	● HA					● HB	■		■		■		■		102+103
	H	2	0,1–20	● HA					● HB				■	■		■		104–108
	H	3	3–12	● HA					●				■	■		■		109
	H	4	2–20	○ HA					● HB				■	■		■		110
	H	2	0,5–16	● HA					● HB			■		■		■		111–113
Micro-Cutter																		
	N	2	0,2–2	● HA		●	●	●	●	■				■		■		114
	N	2	0,2–2	● HA		●	●	●	●				■	■		■		115+116
	N	2	0,5–2	● HA		●	●	●	●			■		■		■		117
MultiChange																		
	PDC	2	8–16				●				■						□	119
	AL	3	10–20				●					■				■		119
	PCR	4	9,7–20	●	○	●	●					■			HPC	■		120
	N	3–6	8–20	●	○	●	●		○	■	■	■	■		HPC	■		119–123

End Mills Overview

End Mills with Finishing Geometry

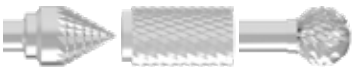
	Tool type	Number of teeth	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Standard
	W	2	0,2–25				●			■	■	■			HPC	■	□	124–132
	W	3	3–25				●			■		■			HPC	■	□	133–135
	W	4	6–20				●			■					HPC	■	□	136+137
	W	5–7	6–20				●			■					HPC	■	□	138
	N	2	0,2–20	●	○	●	○	○	○	■	■					■	□	139–146
	N	3	3–20	○	●	○	○	●		■							□	147
	N	3	0,5–20	●	●	●	●	●	○	■	■					■	□	148–152
	N	4	1,5–20	●	○	●	○	○	○	■	■				HPC	■	□	153–155
	N	4	3–25	●	○	●	○	○	○		■					■	□	156
	N	4	2–12	○	●	○	●	●	○			■			HPC	■		157
	N	4	3–20	●	○	●	○	○	○			■				■		158
	N	4	3–20	●	●	●	○	●		■	■	■			HPC	■		159–163
	N	6–8	4–32	○	●	○	●	●	●		■	■				■	□	164–166
	N	5–13	4–25	○	●	○	○	●			■					■		167
	N	8–16	6–20	○	●	○	●	●	○	■						■		168
	H	4	4–20	●					○		■	■				■		169+170
	H	6–8	4–32	○	●	○	●	●	●	■	■					■		171+172

14

Overview of end milling, ball-nosed and torus cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Standard
End Mills with Roughing and Finishing Geometry																		
	WF	4	5–20				●	○								■		173
	NTR	3–4	6–20	●	○	●	○	○	○							■		174
End Mills with Roughing Geometry																		
	WR	3	3–20				●								HPC	■		175
	NR	4–6	4–25	●	●	●	○	●								■		176–178
	HR	4–5	6–25	●	●	●		○								■		179–181
Ball Nosed End Mills with Finishing Geometry																		
	W	2	0,2–20				●	○							HPC	■	□	182–187
	N	2	0,1–20	●	○	●	○	○	○							■	□	188–193
	N	2	1–12	●	○	●	○	○	○							■		194
	N	2	3–20	●	●	○	○	●							HPC	■		195
	N	4	3–20	●	●	○	●	●	○						HPC	■		196–198
	H	2	0,2–20	●	○	●	○	○	○							■		199–201
Ball Nosed End Mills with Roughing Geometry																		
	NR	4	6–20	●	○	●	○	○								■		202
Torus Milling Cutters with Finishing Geometry																		
	W	2	0,2–12				●									■		203–206
	W	2	2–12				●									■		207
	W	4	4–12				●									■		208+209
	N	2	0,5–16	●	○	●	○	○	○							■		210
	H	2	0,2–12	●	○	●	○	○	○							■		211–214
	H	4–8	3–16	●		○	○		●							■		215

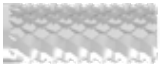
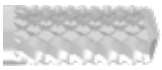
Overview Special Milling Cutters

	Tool type	Number of teeth	Diameter in mm	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	
		ZEFP	Ø DC															WNT \ Performance / WNT \ Standard
Intermediate Size Torus End Mills																		
	H	4	7–17	○ HA	●	○	●	●	○			■		■		■		216
High Feed Cutter																		
	N	4	6–16	● HA	○	○	○	○	●			■		■	HFC	■		217+218
Form / Chamfering and Die Sinking / Deburring Cutters																		
	W	1	3–6	○ HA	○	○	●	○									□	219
	N	4	4–12	● HB	○	●	○	○	○							■	□	220
	N	4	4–12	● HB	○	●	○	○	○							■	□	221
	N	4	3–12	● HA	○	●	○	○	○							■	□	222
	N	4	PRFRAD 0,5–6	● HA	○	●	○	○	○							■		223
	N	4–6	2–16	● HA	○	●	○	○	○ HB							■		224+225
			3–16	●	○	●	○	○	●								□	226+227
Circular saw blades																		
	NR	24–160	15–63	●	●	●	●	●	○								□	228–230

14

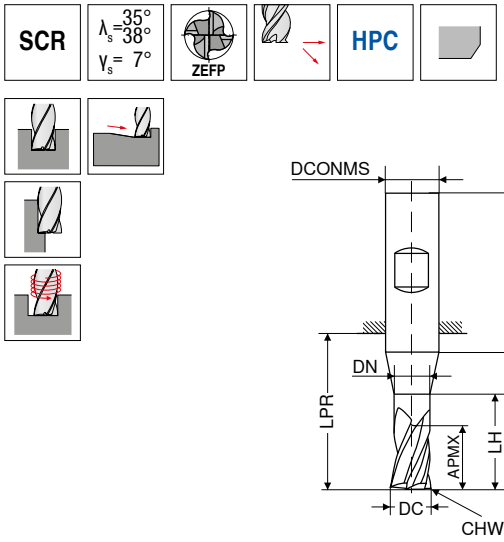
Overview Special Milling Cutters

Plastics-, GFK-, CFK-Cutters

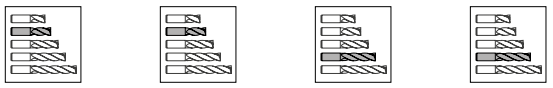
	Tool type	Number of teeth	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Standard
	W		2–20				●										☐	232
	W		2–20				●										☐	233
	W		2–20				●									■		234
	W		5–44				●									■		235+236
	W	2	2–12				●									■		237
	W	1	1,5–20				●										☐	238
	W	1	1,5–12				●									■		239
	W	2	2–12				●									■		240
	W	3	3–20				●									■		241
	N	2	2–12	●	○	●	○	○									☐	242

MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC







DIN 6527 HA | DIN 6527 HB | DIN 6527 HA | DIN 6527 HB

V2 | V2 | V2 | V2

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 600 ... EUR		Article no. 52 601 ... EUR		Article no. 52 602 ... EUR		Article no. 52 603 ... EUR	
3,0	5	2,9	9	14	14	50	6	0,07	4	41,43	030	41,43	030				
3,0	8	2,9	14	20	22	58	6	0,07	4					41,43	030	41,43	030
3,5	5	3,4	9	14	14	50	6	0,07	4	41,43	035	41,43	035				
3,5	8	3,4	14	20	22	58	6	0,07	4					41,43	035	41,43	035
4,0	8	3,8	12	18	18	54	6	0,07	4	41,43	040	41,43	040				
4,0	11	3,8	18	20	22	58	6	0,07	4					41,43	040	41,43	040
4,5	9	4,3	12	18	18	54	6	0,07	4	42,21	045	42,21	045				
4,5	13	4,3	18	20	22	58	6	0,07	4					42,21	045	42,21	045
5,0	9	4,8	16	18	18	54	6	0,07	4	42,21	050	42,21	050				
5,0	13	4,8	19	20	22	58	6	0,07	4					42,21	050	42,21	050
5,5	9	5,3	16	18	18	54	6	0,07	4	40,88	055	40,88	055				
5,5	13	5,3	19	20	22	58	6	0,07	4					40,88	055	40,88	055
6,0	10	5,8		16	18	54	6	0,07	4	40,88	060	40,88	060				
6,0	13	5,8		20	22	58	6	0,07	4					40,88	060	40,88	060
6,5	12	6,3	18	20	23	59	8	0,07	4	54,44	065	54,44	065				
6,5	19	6,3	23	25	28	64	8	0,07	4					54,44	065	54,44	065
7,0	12	6,8	18	20	23	59	8	0,07	4	54,44	070	54,44	070				
7,0	19	6,8	23	25	28	64	8	0,07	4					54,44	070	54,44	070
7,5	12	7,3	18	20	23	59	8	0,12	4	54,44	075	54,44	075				
7,5	19	7,3	23	25	28	64	8	0,12	4					54,44	075	54,44	075
8,0	12	7,7		20	23	59	8	0,12	4	54,44	080	54,44	080				
8,0	19	7,7		25	28	64	8	0,12	4					54,44	080	54,44	080
8,5	15	8,2	22	24	27	67	10	0,20	4	71,09	085	71,09	085				
8,5	22	8,2	28	30	33	73	10	0,20	4					71,09	085	71,09	085
9,0	15	8,7	22	24	27	67	10	0,20	4	71,09	090	71,09	090				
9,0	22	8,7	28	30	33	73	10	0,20	4					71,09	090	71,09	090
9,5	15	9,2	22	24	27	67	10	0,20	4	71,09	095	71,09	095				
9,5	22	9,2	28	30	33	73	10	0,20	4					71,09	095	71,09	095
10,0	15	9,5		24	27	67	10	0,20	4	71,09	100	71,09	100				
10,0	22	9,5		30	33	73	10	0,20	4					71,09	100	71,09	100
11,0	18	10,5	24	26	28	73	12	0,20	4	112,40	110	112,40	110				
11,0	26	10,5	32	35	39	84	12	0,20	4					112,40	110	112,40	110
11,5	18	11,0	24	26	28	73	12	0,20	4	112,40	115	112,40	115				
11,5	26	11,0	32	35	39	84	12	0,20	4					112,40	115	112,40	115
12,0	18	11,5		26	28	73	12	0,20	4	112,40	120	112,40	120				
12,0	26	11,5		35	39	84	12	0,20	4					112,40	120	112,40	120
14,0	21	13,5		28	30	75	14	0,20	4	144,40	140	144,40	140				
14,0	26	13,5		35	39	84	14	0,20	4					144,40	140	144,40	140
15,0	24	14,5	30	32	35	83	16	0,20	4	177,50	150	177,50	150				
15,0	32	14,5	38	40	45	93	16	0,20	4					177,50	150	177,50	150
15,5	24	15,0	30	32	35	83	16	0,20	4	177,50	155	177,50	155				
15,5	32	15,0	38	40	45	93	16	0,20	4					177,50	155	177,50	155

Steel	●	●	●	●
Stainless steel	○	●	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

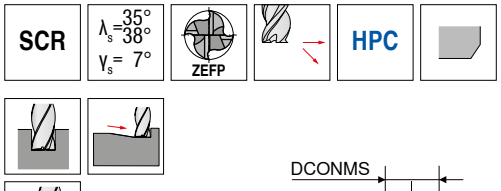
→ v_c/f_z Page 244+245

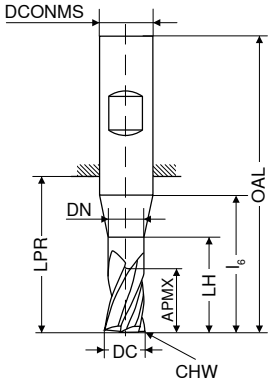
14

Continued on next page

MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC









DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HA | HB | HA | HB

V2 | V2 | V2 | V2

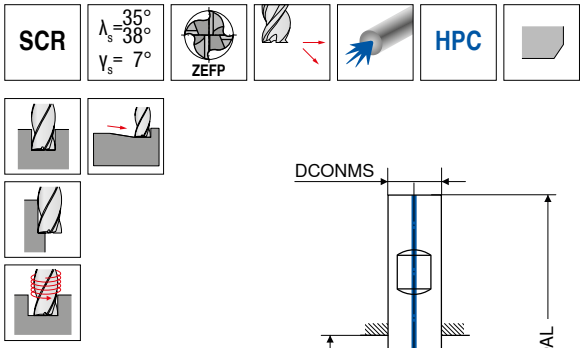
DC $_{f8}$	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h5}$	CHW	ZEFP	Article no. 52 600 ...		Article no. 52 601 ...		Article no. 52 602 ...		Article no. 52 603 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
16,0	24	15,5		32	35	83	16	0,20	4	177,50	**160**	177,50	**160**				
16,0	24	15,5		32	35	83	16	0,20	5	188,60	**161** [1]	188,60	**161** [1]				
16,0	32	15,5		40	45	93	16	0,20	5					188,60	**161** [1]	188,60	**161** [1]
16,0	32	15,5		40	45	93	16	0,20	4					177,50	**160**	177,50	**160**
17,0	27	16,5	32	34	37	85	18	0,20	4	241,40	**170**	241,40	**170**				
17,0	32	16,5	48	50	52	100	18	0,20	4					241,40	**170**	241,40	**170**
18,0	27	17,5		34	37	85	18	0,20	4	241,40	**180**	241,40	**180**				
18,0	27	17,5		34	37	85	18	0,20	5	255,70	**181** [1]	255,70	**181** [1]				
18,0	32	17,5		50	52	100	18	0,20	5					255,70	**181** [1]	255,70	**181** [1]
18,0	32	17,5		50	52	100	18	0,20	4					241,40	**180**	241,40	**180**
19,0	30	18,5	38	40	43	93	20	0,30	4	274,50	**190**	274,50	**190**				
19,0	38	18,5	48	50	54	104	20	0,30	4					274,50	**190**	274,50	**190**
19,5	30	19,0	38	40	43	93	20	0,30	4	274,50	**195**	274,50	**195**				
19,5	38	19,0	48	50	54	104	20	0,30	4					274,50	**195**	274,50	**195**
20,0	30	19,5		40	43	93	20	0,30	4	274,50	**200**	274,50	**200**				
20,0	30	19,5		40	43	93	20	0,30	5	289,90	**201** [1]	289,90	**201** [1]				
20,0	38	19,5		50	54	104	20	0,30	5					289,90	**201** [1]	289,90	**201** [1]
20,0	38	19,5		50	54	104	20	0,30	4					274,50	**200**	274,50	**200**

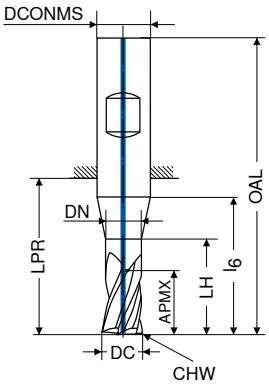
Steel	●	●	●	●
Stainless steel	○	●	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 244+245

MonsterMill – End milling cutter





Ti1200





DIN 6527

HB 

V2

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 606 ... EUR	
3	8	2,9	14	20	22	58	6	0,07	4	50,81	**030**
4	11	3,8	18	20	22	58	6	0,07	4	50,81	**040**
5	13	4,8	19	20	22	58	6	0,07	4	51,58	**050**
6	13	5,8		20	22	58	6	0,07	4	50,03	**060**
8	19	7,7		25	28	64	8	0,12	4	65,47	**080**
10	22	9,5		30	33	73	10	0,20	4	84,20	**100**
12	26	11,5		35	39	84	12	0,20	4	133,30	**120**
14	26	13,5		35	39	84	14	0,20	4	184,10	**140**
16	32	15,5		40	45	93	16	0,20	4	226,00	**160**
18	32	17,5		50	52	100	18	0,20	4	313,00	**180**
20	38	19,5		50	54	104	20	0,30	4	362,70	**200**

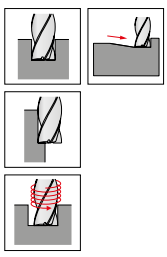
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

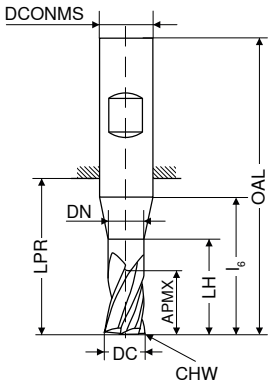
→ v_c/f_z Page 244+245

14

MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC













Factory standard | Factory standard

HB | HB

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	V2 Article no. 52 604 ... EUR		V2 Article no. 52 605 ... EUR	
3	5	2,9	14	20	22	58	6	0,07	4	41,43	030		
3	5	2,9	19	23	26	62	6	0,07	4			48,28	030
4	8	3,8	18	20	22	58	6	0,07	4	41,43	040		
4	8	3,8	23	25	26	62	6	0,07	4			48,28	040
5	9	4,8	19	20	22	58	6	0,07	4	42,21	050		
5	9	4,8	24	25	26	62	6	0,07	4			49,26	050
6	10	5,8		20	22	58	6	0,07	4	40,88	060		
6	10	5,8		25	26	62	6	0,07	4			47,83	060
8	12	7,7		25	28	64	8	0,12	4	54,44	080		
8	12	7,7		30	32	68	8	0,12	4			63,26	080
10	15	9,5		30	33	73	10	0,20	4	71,09	100		
10	15	9,5		35	40	80	10	0,20	4			81,78	100
12	18	11,5		35	39	84	12	0,20	4	112,40	120		
12	18	11,5		45	48	93	12	0,20	4			129,00	120
14	21	13,5		35	39	84	14	0,20	4	144,40	140		
14	21	13,5		50	54	99	14	0,20	4			174,10	140
16	24	15,5		40	45	93	16	0,20	4	177,50	160		
16	24	15,5		40	45	93	16	0,20	5	188,60	161 [1]		
16	24	15,5		55	60	108	16	0,20	4			210,50	160
16	24	15,5		55	60	108	16	0,20	5			221,50	161 [1]
18	27	17,5		50	52	100	18	0,20	4	241,40	180		
18	27	17,5		50	52	100	18	0,20	5	255,70	181 [1]		
18	27	17,5		60	66	114	18	0,20	4			298,80	180
18	27	17,5		60	66	114	18	0,20	5			314,10	181 [1]
20	30	19,5		50	54	104	20	0,30	4	274,50	200		
20	30	19,5		50	54	104	20	0,30	5	289,90	201 [1]		
20	30	19,5		70	76	126	20	0,30	4			335,10	200
20	30	19,5		70	76	126	20	0,30	5			351,60	201 [1]

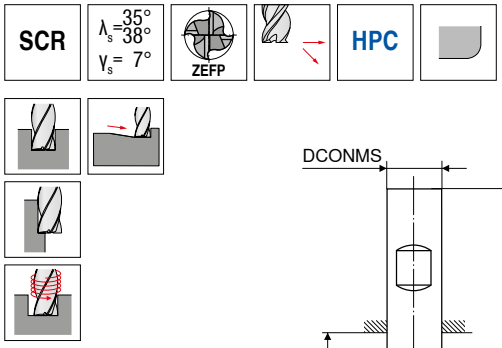
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 244-247

MonsterMill – End milling cutter with corner radius

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC | Ti1200





Factory standard

HB

V2

DC f8	RE ±0,01	APMX	DN	LH	l_6	LPR	OAL	DCONMS h5	ZEFP	Article no. 52 607 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR	
3	0,10	8	2,9	14	20	22	58	6	4	46,96	030
3	0,30	8	2,9	14	20	22	58	6	4	46,96	031
3	0,50	8	2,9	14	20	22	58	6	4	46,96	032
4	0,10	11	3,8	18	20	22	58	6	4	46,96	040
4	0,40	11	3,8	18	20	22	58	6	4	46,96	041
4	0,50	11	3,8	18	20	22	58	6	4	46,96	042
5	0,10	13	4,8	19	20	22	58	6	4	47,94	050
5	0,50	13	4,8	19	20	22	58	6	4	47,94	051
5	1,00	13	4,8	19	20	22	58	6	4	47,94	052
6	0,10	13	5,8		20	22	58	6	4	46,29	060
6	0,50	13	5,8		20	22	58	6	4	46,29	061
6	1,00	13	5,8		20	22	58	6	4	46,29	062
8	0,15	19	7,7		25	28	64	8	4	61,71	080
8	0,50	19	7,7		25	28	64	8	4	61,71	081
8	1,00	19	7,7		25	28	64	8	4	61,71	082
8	2,00	19	7,7		25	28	64	8	4	61,71	083
10	0,15	22	9,5		30	33	73	10	4	80,57	100
10	0,50	22	9,5		30	33	73	10	4	80,57	101
10	1,00	22	9,5		30	33	73	10	4	80,57	102
10	1,50	22	9,5		30	33	73	10	4	80,57	103
10	2,00	22	9,5		30	33	73	10	4	80,57	104
12	0,20	26	11,5		35	39	84	12	4	127,80	120
12	0,50	26	11,5		35	39	84	12	4	127,80	121
12	1,00	26	11,5		35	39	84	12	4	127,80	122
12	1,50	26	11,5		35	39	84	12	4	127,80	123
12	2,00	26	11,5		35	39	84	12	4	127,80	124
14	1,00	26	13,5		35	39	84	14	4	164,20	140
16	0,30	32	15,5		40	45	93	16	4	201,80	160
16	0,50	32	15,5		40	45	93	16	4	201,80	161
16	1,00	32	15,5		40	45	93	16	4	201,80	162
16	2,00	32	15,5		40	45	93	16	4	201,80	163
16	4,00	32	15,5		40	45	93	16	4	201,80	164
20	0,30	38	19,5		50	54	104	20	4	311,90	200
20	0,50	38	19,5		50	54	104	20	4	311,90	201
20	1,00	38	19,5		50	54	104	20	4	311,90	202
20	2,00	38	19,5		50	54	104	20	4	311,90	203

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

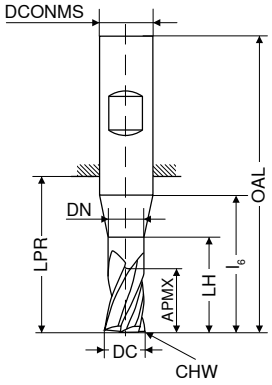
→ v_c/f_z Page 244+245

14

MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC









DIN 6527 | DIN 6527 | DIN 6527 | Factory standard

HA | HA | HB | HA

V2 | V2 | V2 | V2

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 608 ... EUR		Article no. 52 608 ... EUR		Article no. 52 608 ... EUR		Article no. 52 608 ... EUR	
5	9	4,8	16	18	18	54	6	0,12	6	55,55	050						
5	13	4,8	19	20	22	58	6	0,12	6			55,55	051				
5	13	4,8	24	25	26	62	6	0,12	6							62,93	052
6	10	5,8		16	18	54	6	0,12	6	53,68	060						
6	13	5,8		20	22	58	6	0,12	6			53,68	061				
6	13	5,8		25	26	62	6	0,12	6							61,16	062
8	12	7,7		20	23	59	8	0,12	6	71,42	080						
8	19	7,7		25	28	64	8	0,12	6			71,42	081				
8	19	7,7		30	32	68	8	0,12	6							80,79	082
10	15	9,5		24	27	67	10	0,20	6	93,35	100						
10	22	9,5		30	33	73	10	0,20	6			93,35	101	93,35	103		
10	22	9,5		35	40	80	10	0,20	6							104,60	102
12	18	11,5		26	28	73	12	0,20	6	147,80	120						
12	26	11,5		35	39	84	12	0,20	6			147,80	121	147,80	123		
12	26	11,5		45	48	93	12	0,20	6							164,20	122
16	24	15,5		32	35	83	16	0,20	6	234,80	160						
16	32	15,5		40	45	93	16	0,20	6			234,80	161	234,80	163		
16	32	15,5		55	60	108	16	0,20	6							271,10	162
20	30	19,5		40	43	93	20	0,30	6	361,50	200						
20	38	19,5		50	54	104	20	0,30	6			361,50	201	361,50	203		
20	38	19,5		70	76	126	20	0,30	6							432,10	202

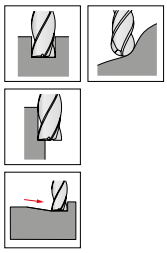
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

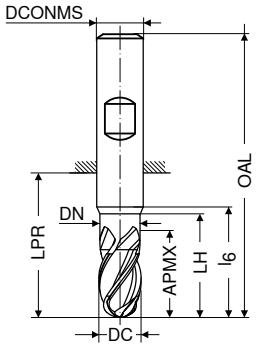
→ v_c/f_z Page 244–247

MonsterMill – Ball nosed cutter

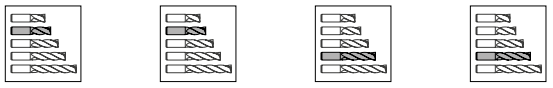
▲ Radius accuracy: -0,015 mm for Ø ≤ 6,0 mm / -0,02 mm for Ø > 6,0 mm

SCR | λ_s=35° 38° γ_s= 7° | ZEFP | HPC









DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HA | HB | HA | HB

V2 | V2 | V2 | V2

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 52 611 ... EUR		Article no. 52 611 ... EUR		Article no. 52 612 ... EUR		Article no. 52 612 ... EUR	
3	5	2,9	9	14	14	50	6	3	51,91	030						
3	8	2,9	14	20	22	58	6	3					54,01	030		
4	11	3,8	18	20	22	58	6	3					54,01	040		
4	8	3,8	12	18	18	54	6	3	51,91	040						
5	13	4,8	19	20	22	58	6	3					54,89	050		
5	9	4,8	16	18	18	54	6	3	52,90	050						
6	10	5,8		16	18	54	6	4	51,25	060	51,25	061				
6	13	5,8		20	22	58	6	4					53,24	060	53,24	061
8	19	7,7		25	28	64	8	4					70,76	080	70,76	081
8	12	7,7		20	23	59	8	4	68,11	080	68,11	081				
10	22	9,5		30	33	73	10	4					92,25	100	92,25	101
10	15	9,5		24	27	67	10	4	88,84	100	88,84	101				
12	26	11,5		35	39	84	12	4					145,50	120	145,50	121
12	18	11,5		26	28	73	12	4	140,00	120	140,00	121				
16	32	15,5		40	45	93	16	4					231,50	160	231,50	161
16	24	15,5		32	35	83	16	4	223,80	160	223,80	161				

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

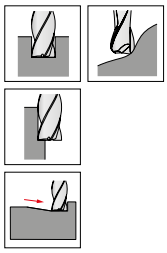
→ v_c/f_z Page 244+245

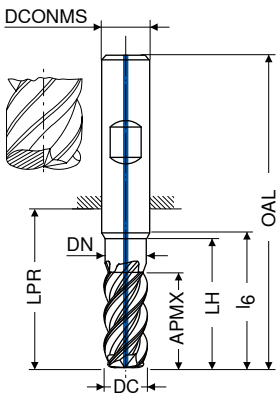
14

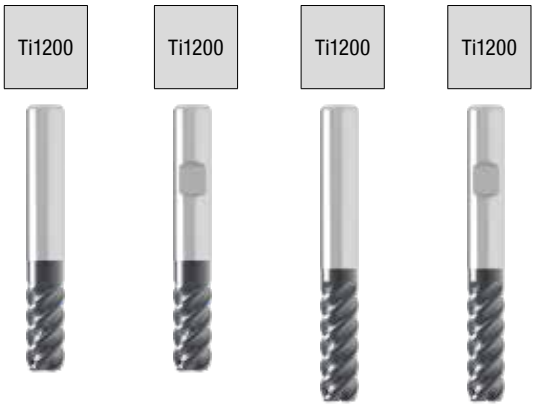
MonsterMill – Torus face milling cutter

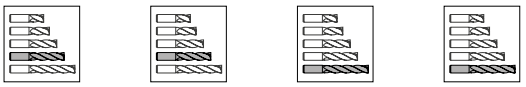
▲ r_{3D} = programmed corner radius

SCR | λ_s=45° γ_s= 7° | ZEFP | HPC | ≤ 60 HRC









DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

LPR with Shank DIN 6535 HB

HA | HB | HA | HB

V2 | V2 | V2 | V2

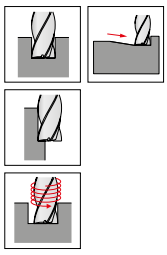
DC $_{-0,04}$	r_{3D}	APMX	DN	LH	LPR	OAL	l_6	DCONMS $_{h5}$	t_{max}	ZEFP	Article no. 52 609 ...		Article no. 52 609 ...		Article no. 52 610 ...		Article no. 52 610 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	0,4	3	2,9	14,00	21	57	20	6	0,10	4	101,50	**030**	101,50	**031**				
4	0,5	4	3,8	18,00	21	57	20	6	0,15	4	104,00	**040**	104,00	**041**				
5	0,6	5	4,8	18,00	21	57	20	6	0,20	4	115,80	**050**	115,80	**051**				
6	0,8	13	5,8	19,90	21	57	20	6	0,20	4	105,40	**060**	105,40	**061**				
8	1,0	19	7,7	24,85	27	63	25	8	0,30	4	121,30	**080**	121,30	**081**				
8	1,0	19	7,7	29,85	32	68	30	8	0,30	4					143,30	**080**	143,30	**081**
10	1,2	22	9,5	29,75	32	72	30	10	0,40	4	143,30	**100**	143,30	**101**				
10	1,2	22	9,5	34,75	40	80	35	10	0,40	4					152,10	**100**	152,10	**101**
12	1,6	26	11,5	34,75	38	83	35	12	0,40	4	183,00	**120**	183,00	**121**				
12	1,6	26	11,5	44,75	47	93	45	12	0,40	4					199,50	**120**	199,50	**121**
16	2,2	32	15,5	39,75	44	92	40	16	0,50	4	287,70	**160**	287,70	**161**				
16	2,2	32	15,5	54,75	60	108	55	16	0,50	4					303,10	**160**	303,10	**161**

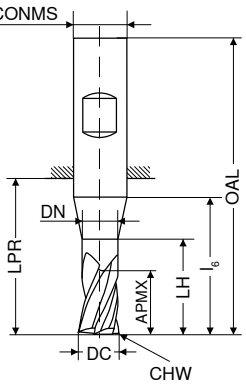
Steel	●	●	●	●
Stainless steel				
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys				
hardened materials	○	○	○	○

→ v_c/f_z Page 248–251

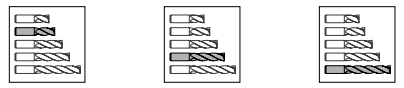
MonsterMill – End milling cutter











										DIN 6527		Factory standard		Factory standard	
										HB		HB		HB	
										V1		V1		V1	
DC e8	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 784 ...		Article no. 52 784 ...		Article no. 52 784 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
1,5	2,3	1,4	6	14	21	57	6	0,04	3	56,76	017				
2,0	3,0	1,9	8	15	21	57	6	0,04	3	56,76	022				
2,5	3,8	2,4	10	16	21	57	6	0,07	3	56,76	027				
3,0	5,0	2,9	14	18	21	57	6	0,07	3	55,66	032				
3,0	8,0	2,9	14	18	21	57	6	0,07	3			59,63	034		
3,0	5,0	2,9	19	23	26	62	6	0,07	3					59,63	036
4,0	8,0	3,8	18	20	21	57	6	0,07	3	56,76	042				
4,0	11,0	3,8	18	20	21	57	6	0,07	3			60,62	044		
4,0	8,0	3,8	23	25	26	62	6	0,07	3					60,62	046
5,0	9,0	4,8	19	20	21	57	6	0,12	3	57,76	052				
5,0	13,0	4,8	19	20	21	57	6	0,12	3			61,61	054		
5,0	9,0	4,8	24	25	26	62	6	0,12	3					61,61	056
6,0	10,0	5,8	20		21	57	6	0,12	4	58,64	062				
6,0	13,0	5,8	20		21	57	6	0,12	4			62,49	064		
6,0	10,0	5,8	25		26	62	6	0,12	4					62,49	066
8,0	12,0	7,7	25		27	63	8	0,12	4	69,33	082				
8,0	19,0	7,7	25		27	63	8	0,12	4			73,07	084		
8,0	12,0	7,7	30		32	68	8	0,12	4					72,08	086
10,0	15,0	9,5	30		32	72	10	0,20	4	88,39	102				
10,0	22,0	9,5	30		32	72	10	0,20	4			94,12	104		
10,0	15,0	9,5	35		40	80	10	0,20	4					94,12	106
12,0	18,0	11,5	35		38	83	12	0,20	4	117,90	122				
12,0	26,0	11,5	35		38	83	12	0,20	4			124,60	124		
12,0	18,0	11,5	45		48	93	12	0,20	4					126,80	126
14,0	21,0	13,5	35		38	83	14	0,20	4	162,00	142				
14,0	26,0	13,5	35		38	83	14	0,20	4			170,90	144		
14,0	21,0	13,5	50		54	99	14	0,20	4					183,00	146
16,0	24,0	15,5	40		44	92	16	0,20	4	194,00	161				
16,0	24,0	15,5	40		44	92	16	0,20	5	201,80	162 [1]				
16,0	32,0	15,5	40		44	92	16	0,20	4			203,80	163		
16,0	32,0	15,5	40		44	92	16	0,20	5			216,00	164 [1]		
16,0	24,0	15,5	55		60	108	16	0,20	4					216,00	165
16,0	24,0	15,5	55		60	108	16	0,20	5					222,60	166 [1]
18,0	27,0	17,5	40		44	92	18	0,20	4	250,20	181				
18,0	27,0	17,5	40		44	92	18	0,20	5	264,60	182 [1]				
18,0	32,0	17,5	40		44	92	18	0,20	4			266,80	183		
18,0	32,0	17,5	40		44	92	18	0,20	5			278,80	184 [1]		
18,0	27,0	17,5	60		66	114	18	0,20	4					287,70	185
18,0	27,0	17,5	60		66	114	18	0,20	5					302,00	186 [1]
20,0	30,0	19,5	50		54	104	20	0,30	4	292,00	201				
20,0	30,0	19,5	50		54	104	20	0,30	5	306,40	202 [1]				
20,0	38,0	19,5	50		54	104	20	0,30	4			308,60	203		
20,0	38,0	19,5	50		54	104	20	0,30	5			325,10	204 [1]		
20,0	30,0	19,5	70		76	126	20	0,30	4					327,30	205
20,0	30,0	19,5	70		76	126	20	0,30	5					343,80	206 [1]

Steel	○	○	○
Stainless steel	●	●	●
Cast iron	○	○	○
Non ferrous metals	○	○	○
Heat resistant alloys	●	●	●
hardened materials	○	○	○

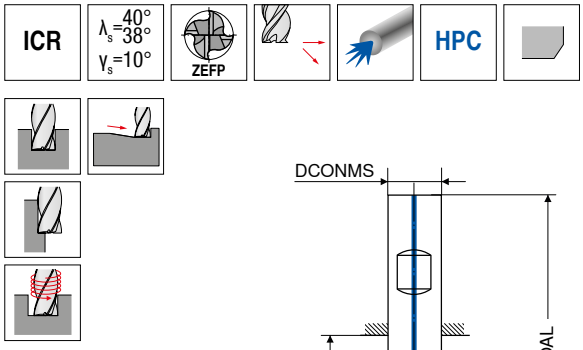
1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

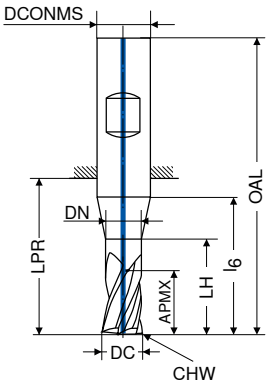
→ v_c/f_z Page 252–257

14

MonsterMill – End Milling Cutter

▲ with axial through coolant











DIN 6527

HB

V1

DC e8 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 786 ... EUR	
3	8	2,9	14	18	21	57	6	0,07	3	65,36	**034**
4	11	3,8	18	20	21	57	6	0,07	3	66,34	**044**
5	13	4,8	19	20	21	57	6	0,12	3	67,34	**054**
6	13	5,8	20		21	57	6	0,12	4	68,22	**064**
8	19	7,7	25		27	63	8	0,12	4	80,02	**084**
10	22	9,5	30		32	72	10	0,20	4	101,90	**104**
12	26	11,5	35		38	83	12	0,20	4	135,50	**124**
14	26	13,5	35		38	83	14	0,20	4	198,30	**144**
16	32	15,5	40		44	92	16	0,20	4	233,60	**163**
16	32	15,5	40		44	92	16	0,20	5	245,80	**164** 1)
18	32	17,5	40		44	92	18	0,20	4	308,60	**183**
18	32	17,5	40		44	92	18	0,20	5	325,10	**184** 1)
20	38	19,5	50		54	104	20	0,30	4	365,90	**203**
20	38	19,5	50		54	104	20	0,30	5	382,40	**204** 1)

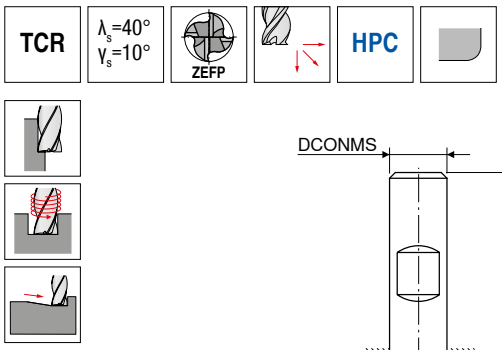
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	○

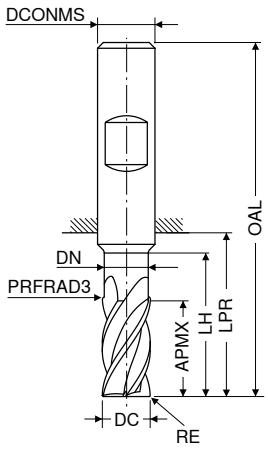
1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

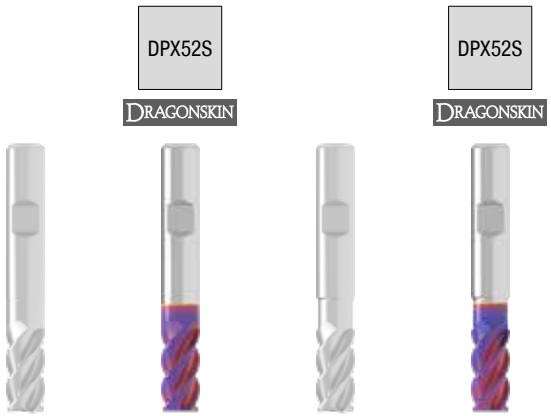
→ v_c/f_z Page 252–255

MonsterMill – End milling cutter with corner radius

▲ PRFRAD3 = 1 mm







DC e8	RE	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard	Factory standard	Factory standard	Factory standard
									HB	HB	HB	HB
									NEW V1	NEW V1	NEW V1	NEW V1
mm	mm	mm	mm	mm	mm	mm	mm		Article no. 52 503 ...	Article no. 52 504 ...	Article no. 52 505 ...	Article no. 52 506 ...
									EUR	EUR	EUR	EUR
4	0,1	11		14	21	57	6	4	51,20 04000	58,07 04000		
4	0,1	11	3,8	17	21	57	6	5			55,75 04000 [1)]	62,63 04000 [1)]
5	0,1	13	4,8	19	21	57	6	5			58,30 05000 [1)]	65,18 05000 [1)]
5	0,1	13		16	21	57	6	4	51,20 05000	58,07 05000		
6	0,1	13	5,8	19	21	57	6	5			58,30 06000 [1)]	65,18 06000 [1)]
6	0,1	13			21	57	6	4	51,20 06000	58,07 06000		
8	0,2	21	7,7	25	27	63	8	5			71,02 08000 [1)]	80,72 08000 [1)]
8	0,2	21			27	63	8	4	71,02 08000	80,72 08000		
10	0,2	22	9,7	30	32	72	10	5			102,10 10000 [1)]	114,10 10000 [1)]
10	0,2	22			32	72	10	4	86,30 10000	98,28 10000		
12	0,2	26	11,6	36	38	83	12	5			128,70 12000 [1)]	142,10 12000 [1)]
12	0,2	26			38	83	12	4	92,42 12000	106,00 12000		
16	0,3	36	15,5	42	44	92	16	5			177,40 16000 [1)]	194,10 16000 [1)]
16	0,3	36			44	92	16	4	160,50 16000	177,00 16000		
20	0,3	41	19,5	52	54	104	20	5			285,50 20000 [1)]	305,90 20000 [1)]
20	0,3	41			54	104	20	4	233,80 20000	254,20 20000		

Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

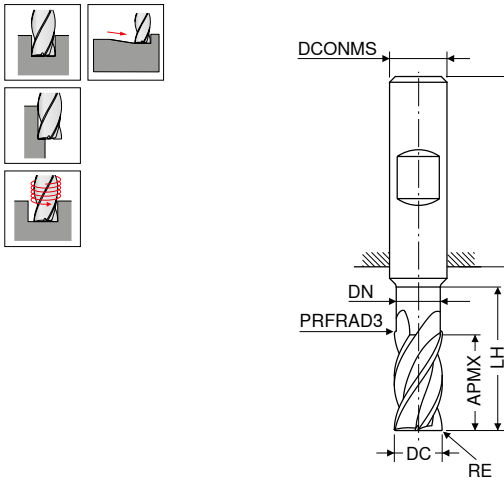
→ v_c/f_z Page 258+259

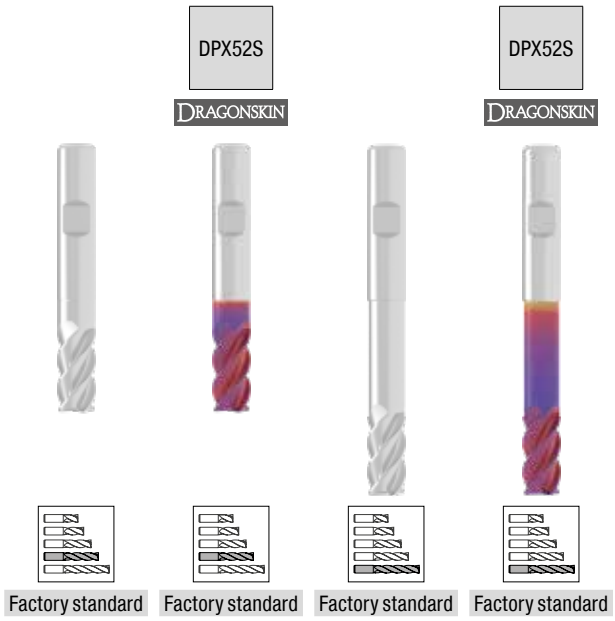
14

MonsterMill – End milling cutter with corner radius

▲ PRFRAD3 = 1 mm

TCR | λ_s=40° γ_s=10° | ZEFP | HPC





Factory standard | Factory standard | Factory standard | Factory standard

HB | HB | HB | HB

NEW V1 | NEW V1 | NEW V1 | NEW V1

DC e8	RE	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 52 507 ...		Article no. 52 508 ...		Article no. 52 507 ...		Article no. 52 508 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
4	0,4	8,5	3,8	20	26	62	6	4					53,73	04104	60,60	04104
4	0,5	8,5	3,8	20	26	62	6	4					53,73	04105	60,60	04105
4	0,8	8,5	3,8	20	26	62	6	4					53,73	04108	60,60	04108
4	0,2	11,0		14	21	57	6	4	51,20	04002	58,07	04002				
4	0,4	11,0		14	21	57	6	4	51,20	04004	58,07	04004				
4	0,5	11,0		14	21	57	6	4	51,20	04005	58,07	04005				
5	0,5	10,5	4,8	25	34	70	6	4					60,35	05105	67,23	05105
5	0,8	10,5	4,8	25	34	70	6	4					60,35	05108	67,23	05108
5	0,5	13,0		16	21	57	6	4	53,73	05005	60,60	05005				
5	1,0	13,0		16	21	57	6	4	53,73	05010	60,60	05010				
6	0,4	13,0			21	57	6	4	53,73	06004	60,60	06004				
6	0,5	13,0			21	57	6	4	53,73	06005	60,60	06005				
6	0,6	13,0			21	57	6	4	53,73	06006	60,60	06006				
6	0,6	13,0	5,8	30	34	70	6	4					63,93	06106	70,80	06106
6	0,8	13,0			21	57	6	4	53,73	06008	60,60	06008				
6	0,8	13,0	5,8	30	34	70	6	4					63,93	06108	70,80	06108
6	1,0	13,0	5,8	30	34	70	6	4					63,93	06110	70,80	06110
6	1,0	13,0			21	57	6	4	56,52	06010	63,40	06010				
6	1,5	13,0			21	57	6	4	56,52	06015	63,40	06015				
8	0,8	17,0	7,7	40	44	80	8	4					89,13	08108	98,80	08108
8	1,0	17,0	7,7	40	44	80	8	4					89,13	08110	98,80	08110
8	1,5	17,0	7,7	40	44	80	8	4					89,13	08115	98,80	08115
8	2,0	17,0	7,7	40	44	80	8	4					89,13	08120	98,80	08120
8	0,5	21,0			27	63	8	4	71,02	08005	80,72	08005				
8	0,8	21,0			27	63	8	4	71,02	08008	80,72	08008				
8	1,0	21,0			27	63	8	4	74,10	08010	83,77	08010				
8	1,2	21,0			27	63	8	4	74,10	08012	83,77	08012				
8	1,5	21,0			27	63	8	4	74,10	08015	83,77	08015				
8	2,0	21,0			27	63	8	4	74,10	08020	83,77	08020				
10	0,5	21,0	9,7	50	54	94	10	4					109,70	10105	121,70	10105
10	1,0	21,0	9,7	50	54	94	10	4					109,70	10110	121,70	10110
10	1,5	21,0	9,7	50	54	94	10	4					109,70	10115	121,70	10115
10	2,0	21,0	9,7	50	54	94	10	4					109,70	10120	121,70	10120
10	0,5	22,0			32	72	10	4	86,30	10005	98,28	10005				
10	1,0	22,0			32	72	10	4	89,13	10010	101,10	10010				
10	1,2	22,0			32	72	10	4	89,13	10012	101,10	10012				
10	1,5	22,0			32	72	10	4	89,13	10015	101,10	10015				
10	1,6	22,0			32	72	10	4	89,13	10016	101,10	10016				
10	2,0	22,0			32	72	10	4	89,13	10020	101,10	10020				
12	0,5	25,0	11,6	60	65	110	12	4					137,80	12105	151,20	12105
12	1,0	25,0	11,6	60	65	110	12	4					137,80	12110	151,20	12110
12	1,5	25,0	11,6	60	65	110	12	4					137,80	12115	151,20	12115
12	2,0	25,0	11,6	60	65	110	12	4					137,80	12120	151,20	12120

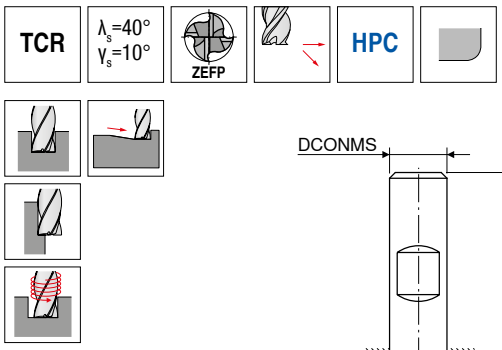
Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	○	○
hardened materials				

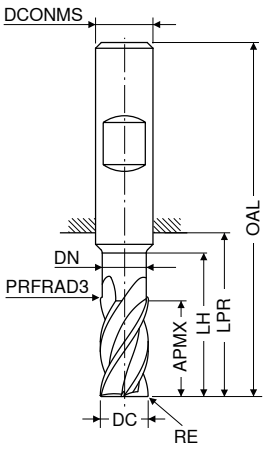
→ v_c/f_z Page 258+259

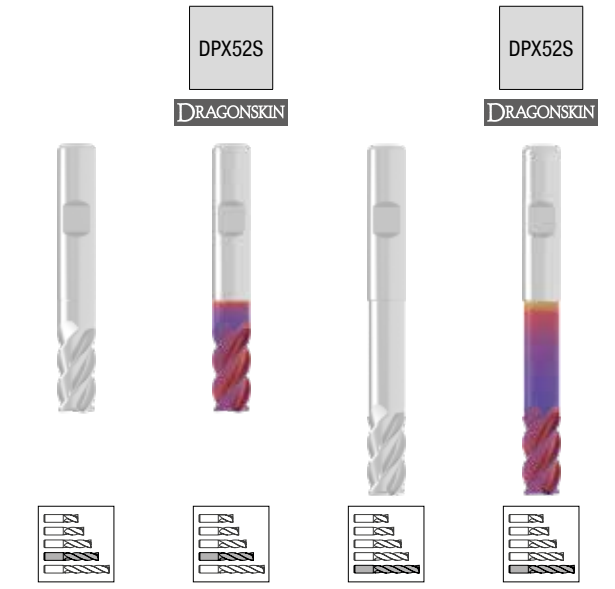
Continued on next page

MonsterMill – End milling cutter with corner radius

▲ PRFRAD3 = 1 mm





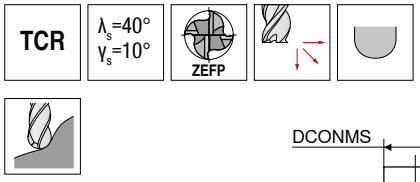


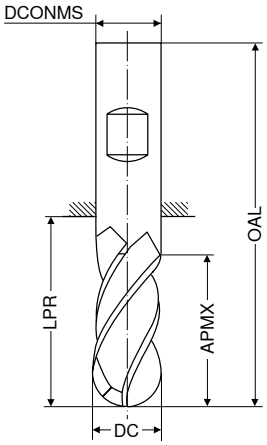
DC e8	RE	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard		Factory standard		Factory standard		Factory standard	
									HB		HB		HB		HB	
									NEW V1		NEW V1		NEW V1		NEW V1	
									Article no. 52 507 ...		Article no. 52 508 ...		Article no. 52 507 ...		Article no. 52 508 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
12	3,0	25,0	11,6	60	65	110	12	4					141,00	12130	154,50	12130
12	4,0	25,0	11,6	60	65	110	12	4					141,00	12140	154,50	12140
12	0,5	26,0			38	83	12	4	92,42	12005	106,00	12005				
12	1,0	26,0			38	83	12	4	95,50	12010	109,00	12010				
12	1,2	26,0			38	83	12	4	95,50	12012	109,00	12012				
12	1,5	26,0			38	83	12	4	95,50	12015	109,00	12015				
12	1,6	26,0			38	83	12	4	95,50	12016	109,00	12016				
12	2,0	26,0			38	83	12	4	95,50	12020	109,00	12020				
12	2,5	26,0			38	83	12	4	95,50	12025	109,00	12025				
12	3,0	26,0			38	83	12	4	95,50	12030	109,00	12030				
14	1,0	29,0	13,6	70	75	120	14	4					190,90	14110	207,50	14110
14	2,0	29,0	13,6	70	75	120	14	4					190,90	14120	207,50	14120
14	3,0	29,0	13,6	70	75	120	14	4					194,30	14130	210,80	14130
14	4,0	29,0	13,6	70	75	120	14	4					194,30	14140	210,80	14140
16	1,0	33,0	15,5	80	84	132	16	4					229,20	16110	245,80	16110
16	2,0	33,0	15,5	80	84	132	16	4					229,20	16120	245,80	16120
16	3,0	33,0	15,5	80	84	132	16	4					232,20	16130	248,80	16130
16	4,0	33,0	15,5	80	84	132	16	4					232,20	16140	248,80	16140
16	1,0	36,0			44	92	16	4	167,50	16010	184,10	16010				
16	1,6	36,0			44	92	16	4	167,50	16016	184,10	16016				
16	2,0	36,0			44	92	16	4	167,50	16020	184,10	16020				
16	2,5	36,0			44	92	16	4	167,50	16025	184,10	16025				
16	3,0	36,0			44	92	16	4	167,50	16030	184,10	16030				
16	3,2	36,0			44	92	16	4	171,60	16032	188,10	16032				
16	4,0	36,0			44	92	16	4	171,60	16040	188,10	16040				
18	1,0	38,0	17,5	90	94	142	18	4					298,70	18110	319,10	18110
18	2,0	38,0	17,5	90	94	142	18	4					298,70	18120	319,10	18120
18	3,0	38,0	17,5	90	94	142	18	4					302,00	18130	322,40	18130
18	4,0	38,0	17,5	90	94	142	18	4					302,00	18140	322,40	18140
20	2,0	41,0			54	104	20	4	233,80	20020	254,20	20020				
20	3,0	41,0			54	104	20	4	233,80	20030	254,20	20030				
20	4,0	41,0			54	104	20	4	238,10	20040	258,40	20040				
20	5,0	41,0			54	104	20	4	238,10	20050	258,40	20050				
20	6,3	41,0			54	104	20	4	241,40	20063	261,80	20063				
20	1,0	42,0	19,5	100	104	154	20	4					326,50	20110	346,80	20110
20	2,0	42,0	19,5	100	104	154	20	4					326,50	20120	346,80	20120
20	3,0	42,0	19,5	100	104	154	20	4					329,50	20130	349,90	20130
20	4,0	42,0	19,5	100	104	154	20	4					329,50	20140	349,90	20140

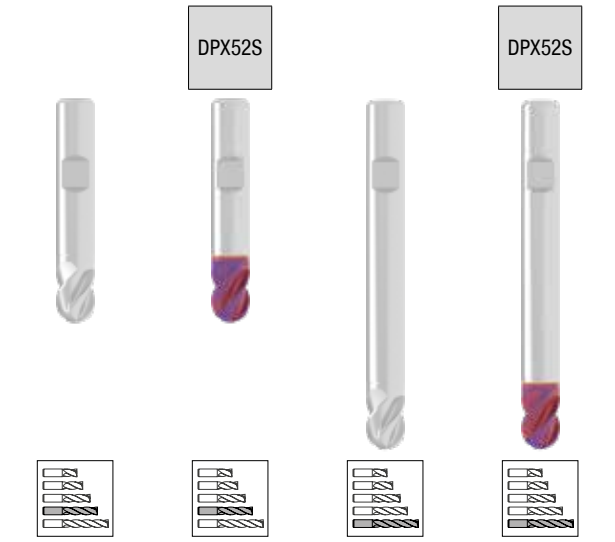
Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	○	○
hardened materials				

→ v_c/f_z Page 258+259

MonsterMill – Ball nosed cutter







DC e8	APMX	LPR	OAL	DCONMS h5	ZEFP	Factory standard HB	NEW V1 Article no. 52 513 ...	Factory standard HB	NEW V1 Article no. 52 514 ...	Factory standard HB	NEW V1 Article no. 52 513 ...	Factory standard HB	NEW V1 Article no. 52 514 ...
mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
2	4	18	54	6	4	43,56	02000	53,73	02000				
2	4	44	80	6	4					63,40	02100	75,90	02100
3	5	44	80	6	4					63,40	03100	75,90	03100
3	5	18	54	6	4	43,56	03000	53,73	03000				
4	8	44	80	6	4					63,40	04100	75,90	04100
4	8	18	54	6	4	43,56	04000	53,73	04000				
5	9	44	80	6	4					67,23	05100	79,42	05100
5	9	18	54	6	4	47,12	05000	59,85	05000				
6	10	44	80	6	4					67,23	06100	79,42	06100
6	10	18	54	6	4	47,12	06000	59,85	06000				
8	12	64	100	8	4					68,47	08100	85,05	08100
8	12	22	58	8	4	52,45	08000	68,00	08000				
10	14	60	100	10	4					88,85	10100	109,00	10100
10	14	26	66	10	4	70,27	10000	89,88	10000				
12	16	55	100	12	4					114,30	12100	136,50	12100
12	16	28	73	12	4	90,15	12000	117,60	12000				
16	20	52	100	16	4					157,60	16100	195,30	16100
16	20	34	82	16	4	139,60	16000	176,50	16000				

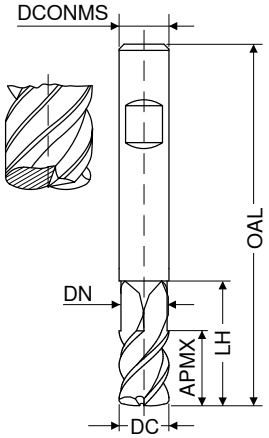
Steel				
Stainless steel	●	●	●	●
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

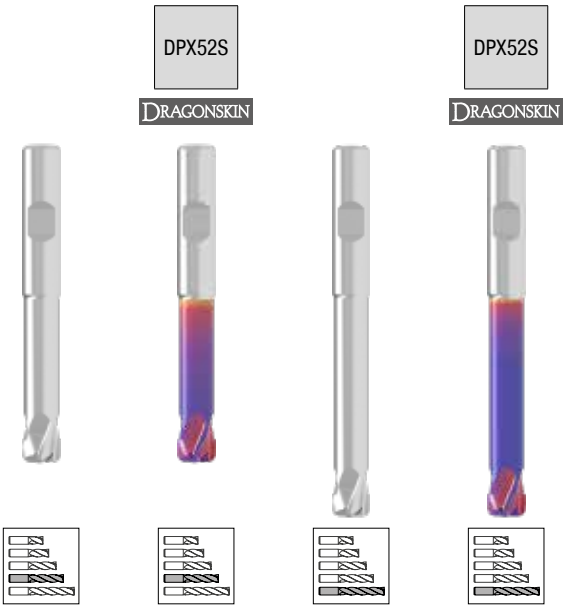
→ v_c/f_z Page 260+261

MonsterMill – Torus face milling cutter

▲ r_{3D} = programmed corner radius
▲ APMX does not correspond to the maximum cutting depth

TCR | λ_s=15° γ_s=10° | ZEFP | HPC





DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB | HB

NEW V1 | NEW V1 | NEW V1 | NEW V1

DC e8 mm	r_{3D} mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 52 511 ... EUR		Article no. 52 512 ... EUR		Article no. 52 511 ... EUR		Article no. 52 512 ... EUR	
2	0,3	1,5	1,7	13	18	54	6	2	51,95	02000	58,82	02000				
2	0,3	1,5	1,7	18	39	75	6	2					55,53	02100	62,40	02100
3	0,3	1,5	2,7	15	18	54	6	2	51,95	03000	58,82	03000				
3	0,3	1,5	2,7	20	39	75	6	2					55,53	03100	62,40	03100
4	0,5	2,5	3,6	16	22	58	6	2	51,95	04000	58,82	04000				
4	0,5	2,5	3,6	24	49	85	6	2					58,30	04100	65,18	04100
5	0,5	3,5	4,6	18	29	65	6	4	56,27	05000	63,15	05000				
5	0,5	3,5	4,6	28	64	100	6	4					66,20	05100	73,07	05100
6	1,0	3,5	5,2	20	29	65	6	4	56,27	06000	63,15	06000				
6	1,0	3,5	5,2	28	64	100	6	4					66,20	06100	73,07	06100
8	1,5	4,8	7,0	24	34	70	8	5	65,95	08000	75,63	08000				
8	1,5	4,8	7,0	40	64	100	8	5					86,07	08100	95,72	08100
10	2,0	5,8	9,0	26	45	85	10	5	89,38	10000	101,40	10000				
10	2,0	5,8	9,0	48	60	100	10	5					121,70	10100	133,70	10100
12	2,0	6,8	11,0	30	48	93	12	5	121,70	12000	135,20	12000				
12	2,0	6,8	11,0	56	75	120	12	5					157,60	12100	171,10	12100
16	2,5	8,8	14,5	35	52	100	16	5	145,60	16000	162,20	16000				
16	2,5	8,8	14,5	65	102	150	16	5					191,80	16100	208,30	16100

Steel				
Stainless steel	●	●	●	●
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

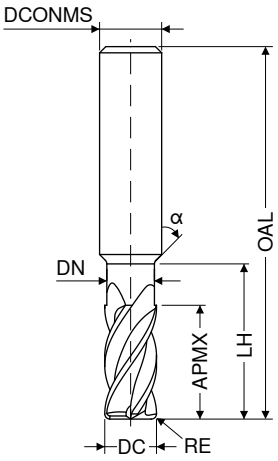
→ v_c/f_z Page 260+261

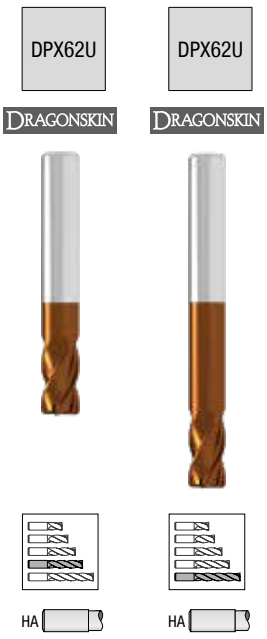
14

MonsterMill – Finish milling cutter with corner radius

- Radius accuracy +/- 0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=-3° | ZEFP | 54–70 HRC





DC	RE	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 603 ...		NEW V1 Article no. 53 604 ...	
mm	mm	mm	mm	mm		mm	mm			EUR		EUR	
0,2	0,05	0,5		0,5	30	48	4	2,5 x DC	2	51,26	30205		
0,2	0,05	0,5	0,18	1,0	30	48	4	5 x DC	2	51,26	40205		
0,3	0,05	0,6	0,27	1,0	30	48	4	3,3 x DC	2	48,58	30305		
0,3	0,05	0,6	0,27	2,0	30	48	4	6,7 x DC	2	48,58	40305		
0,4	0,05	0,7	0,35	1,0	30	48	4	2,5 x DC	2	48,58	30405		
0,4	0,05	0,7	0,35	2,0	30	48	4	5 x DC	2	48,58	40405		
0,4	0,05	0,7	0,35	3,0	30	48	4	7,5 x DC	2	48,58	50405		
0,5	0,05	0,7	0,45	1,0	30	48	4	2 x DC	2	47,20	30505		
0,5	0,05	0,7	0,45	2,0	30	48	4	4 x DC	2	47,20	40505		
0,5	0,05	0,7	0,45	2,5	30	48	4	5 x DC	2	47,20	50505		
0,5	0,05	0,7	0,45	3,0	30	48	4	6 x DC	2	47,20	60505		
0,5	0,05	0,7	0,45	4,0	30	48	4	8 x DC	2	47,20	70505		
0,6	0,05	0,8	0,55	2,0	30	48	4	3,3 x DC	2	45,92	30605		
0,6	0,05	0,8	0,55	3,0	30	48	4	5 x DC	2	45,92	40605		
0,6	0,05	0,8	0,55	4,5	30	48	4	7,5 x DC	2	45,92	50605		
0,6	0,05	0,8	0,55	6,0	30	48	4	10 x DC	2			45,92	30605
0,8	0,05	1,0	0,75	2,0	30	48	4	2,5 x DC	2	45,92	30805		
0,8	0,05	1,0	0,75	4,0	30	48	4	5 x DC	2	45,92	40805		
0,8	0,05	1,0	0,75	6,0	30	48	4	7,5 x DC	2	45,92	50805		
0,8	0,05	1,0	0,75	8,0	30	48	4	10 x DC	2			47,36	30805
0,8	0,05	1,0	0,75	10,0	30	48	4	12,5 x DC	2			47,36	40805
1,0	0,10	1,5	0,95	2,0	30	48	4	2 x DC	4	51,98	31001		
1,0	0,10	1,5	0,95	4,0	30	48	4	4 x DC	4	53,08	41001		
1,0	0,10	1,5	0,95	6,0	30	48	4	6 x DC	4	53,08	51001		
1,0	0,10	1,5	0,95	8,0	30	48	4	8 x DC	4	54,42	61001		
1,0	0,10	1,5	0,95	10,0	30	48	4	10 x DC	4			54,42	31001
1,0	0,10	1,5	0,95	14,0	30	48	4	14 x DC	4			54,42	41001
1,5	0,10	2,0	1,45	4,0	30	48	4	2,7 x DC	4	52,80	31501		
1,5	0,10	2,0	1,45	6,0	30	48	4	4 x DC	4	54,00	41501		
1,5	0,10	2,0	1,45	10,0	30	48	4	6,7 x DC	4	54,00	51501		
1,5	0,10	2,0	1,45	12,0	30	48	4	8 x DC	4	55,18	61501		
1,5	0,10	2,0	1,45	15,0	30	60	4	10 x DC	4			55,86	31501
1,5	0,10	2,0	1,45	20,0	30	60	4	13,3 x DC	4			57,22	41501
2,0	0,20	2,5	1,90	4,0	30	48	4	2 x DC	4	52,80	32002		
2,0	0,20	2,5	1,90	6,0	30	48	4	3 x DC	4	54,00	42002		
2,0	0,20	2,5	1,90	8,0	30	48	4	4 x DC	4	54,00	52002		
2,0	0,20	2,5	1,90	10,0	30	48	4	5 x DC	4	54,00	62002		
2,0	0,20	2,5	1,90	12,0	30	48	4	6 x DC	4	55,18	72002		
2,0	0,20	2,5	1,90	16,0	30	60	4	8 x DC	4	55,86	82002		
2,0	0,20	2,5	1,90	20,0	30	60	4	10 x DC	4			57,22	32002
2,0	0,20	2,5	1,90	25,0	30	60	4	12,5 x DC	4			57,22	42002
3,0	0,20	3,5	2,90	8,0	30	60	6	2,7 x DC	4	60,32	33002		

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

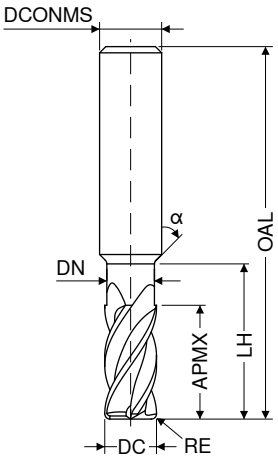
→ v_c/f_z Page 264–269

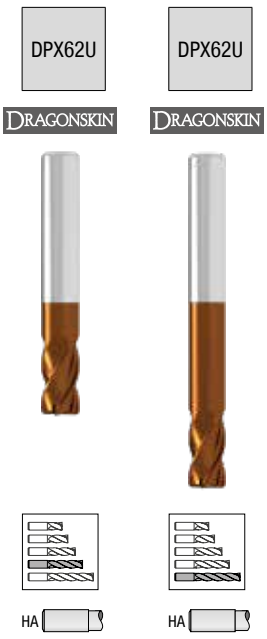
Continued on next page

MonsterMill – Finish milling cutter with corner radius

- Radius accuracy +/- 0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=–3° | ZEFP | 54–70 HRC





DC	RE	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 603 ...	NEW V1 Article no. 53 604 ...
mm	mm	mm	mm	mm		mm	mm			EUR	EUR
3,0	0,20	3,5	2,90	12,0	30	60	6	4 x DC	4	61,64 43002	
3,0	0,20	3,5	2,90	16,0	30	60	6	5,3 x DC	4	61,64 53002	
3,0	0,20	3,5	2,90	20,0	30	70	6	6,7 x DC	4	62,76 63002	
3,0	0,20	3,5	2,90	24,0	30	70	6	8 x DC	4	64,22 73002	
4,0	0,20	4,5	3,90	8,0	30	60	6	2 x DC	4	62,88 34002	
4,0	0,20	4,5	3,90	12,0	30	60	6	3 x DC	4	64,30 44002	
4,0	0,20	4,5	3,90	16,0	30	60	6	4 x DC	4	64,30 54002	
4,0	0,20	4,5	3,90	20,0	30	70	6	5 x DC	4	65,44 64002	
4,0	0,20	4,5	3,90	24,0	30	70	6	6 x DC	4	66,86 74002	
4,0	0,20	4,5	3,90	28,0	30	70	6	7 x DC	4	66,86 84002	
4,0	0,50	4,5	3,90	8,0	30	60	6	2 x DC	4	62,88 34005	
4,0	0,50	4,5	3,90	12,0	30	60	6	3 x DC	4	64,30 44005	
4,0	0,50	4,5	3,90	16,0	30	60	6	4 x DC	4	64,30 54005	
4,0	0,50	4,5	3,90	20,0	30	70	6	5 x DC	4	65,44 64005	
4,0	0,50	4,5	3,90	24,0	30	70	6	6 x DC	4	66,86 74005	
4,0	0,50	4,5	3,90	28,0	30	70	6	7 x DC	4	66,86 84005	
4,0	1,00	4,5	3,90	8,0	30	60	6	2 x DC	4	62,88 34010	
4,0	1,00	4,5	3,90	12,0	30	60	6	3 x DC	4	64,30 44010	
4,0	1,00	4,5	3,90	16,0	30	60	6	4 x DC	4	64,30 54010	
4,0	1,00	4,5	3,90	20,0	30	70	6	5 x DC	4	65,44 64010	
4,0	1,00	4,5	3,90	24,0	30	70	6	6 x DC	4	66,86 74010	
4,0	1,00	4,5	3,90	28,0	30	70	6	7 x DC	4	66,86 84010	
6,0	0,20	6,5	5,90	12,0		60	6	2 x DC	4	66,36 36002	
6,0	0,20	6,5	5,90	16,0		60	6	2,7 x DC	4	68,48 46002	
6,0	0,20	6,5	5,90	20,0		60	6	3,3 x DC	4	68,48 56002	
6,0	0,50	6,5	5,90	12,0		60	6	2 x DC	4	66,36 36005	
6,0	0,50	6,5	5,90	16,0		60	6	2,7 x DC	4	68,48 46005	
6,0	0,50	6,5	5,90	20,0		60	6	3,3 x DC	4	68,48 56005	
6,0	1,00	6,5	5,90	12,0		60	6	2 x DC	4	66,36 36010	
6,0	1,00	6,5	5,90	16,0		60	6	2,7 x DC	4	68,48 46010	
6,0	1,00	6,5	5,90	20,0		60	6	3,3 x DC	4	68,48 56010	
8,0	0,50	8,5	7,90	16,0		60	8	2 x DC	4	84,00 38005	
8,0	0,50	8,5	7,90	40,0		80	8	5 x DC	4	89,20 48005	
8,0	1,00	8,5	7,90	16,0		60	8	2 x DC	4	84,00 38010	
8,0	1,00	8,5	7,90	40,0		80	8	5 x DC	4	89,20 48010	
10,0	0,50	10,5	9,90	20,0		70	10	2 x DC	4	105,30 10005	
10,0	0,50	10,5	9,90	40,0		90	10	4 x DC	4	112,40 10105	
10,0	1,00	10,5	9,90	20,0		70	10	2 x DC	4	105,30 10010	
10,0	1,00	10,5	9,90	40,0		90	10	4 x DC	4	112,40 10110	
12,0	1,00	12,5	11,90	24,0		70	12	2 x DC	4	136,20 12010	
12,0	1,00	12,5	11,90	40,0		90	12	3,3 x DC	4	145,90 12110	

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

→ v_c/f_z Page 264–269

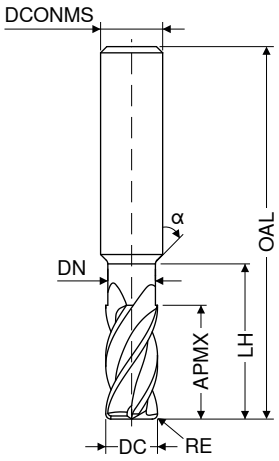
14

MonsterMill – Finish milling cutter with corner radius

- Radius accuracy +/- 0.02 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s = 50° γ_s = -15° | ZEFP | 54–70 HRC

















Factory standard | Factory standard

HA | HA

DC	RE	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 605 ... EUR		NEW V1 Article no. 53 606 ... EUR	
mm	mm	mm	mm	mm		mm	mm						
1	0,03	2			30	48	4	2 x DC	4	55,36	410		
1	0,03	3	0,95	4	30	48	4	3 x DC	4			66,84	410
2	0,03	6	1,90	8	30	48	4	3 x DC	4			67,74	420
2	0,03	4			30	48	4	2 x DC	4	56,28	420		
3	0,03	6			30	60	6	2 x DC	4	65,18	030		
3	0,03	9	2,90	12	30	60	6	3 x DC	4			77,82	030
4	0,05	8			30	60	6	2 x DC	4	68,68	040		
4	0,05	12	3,90	16	30	60	6	3 x DC	4			79,68	040
6	0,05	12				60	6	2 x DC	4	65,92	060		
6	0,05	18	5,90	24		60	6	3 x DC	4			77,82	060
8	0,05	16				60	8	2 x DC	4	96,16	080		
8	0,05	24	7,90	32		70	8	3 x DC	4			109,90	080
10	0,05	20				70	10	2 x DC	4	116,40	100		
10	0,05	30	9,90	40		80	10	3 x DC	4			132,80	100
12	0,05	24				70	12	2 x DC	4	131,90	120		
12	0,05	36	11,90	44		90	12	3 x DC	4			152,10	120

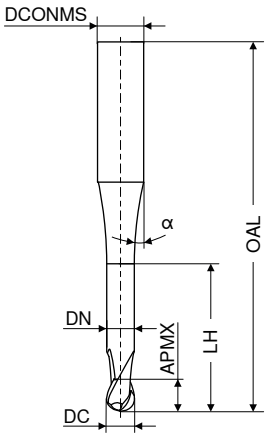
Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

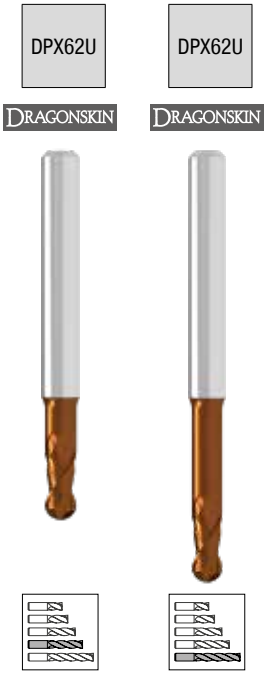
→ v_c/f_z Page 270

MonsterMill – Ball Nosed Cutter

- Radius accuracy: ±0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=–3° | ZEFP | 54–70 HRC





Factory standard | Factory standard

HA | HA

DC	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 600 ...		NEW V1 Article no. 53 601 ...	
mm	mm	mm	mm		mm	mm			EUR		EUR	
0,2	0,5		0,5	30	48	4	2,5 x DC	2	51,26	**302**		
0,2	0,5	0,18	1,0	30	48	4	5 x DC	2	51,26	**402**		
0,3	0,5	0,27	1,0	30	48	4	3,3 x DC	2	48,58	**303**		
0,3	0,5	0,27	2,0	30	48	4	6,7 x DC	2	48,58	**403**		
0,4	0,5	0,35	1,0	30	48	4	2,5 x DC	2	48,58	**304**		
0,4	0,5	0,35	2,0	30	48	4	5 x DC	2	48,58	**404**		
0,4	0,5	0,35	3,0	30	48	4	7,5 x DC	2	48,58	**504**		
0,5	0,5	0,45	1,0	30	48	4	2 x DC	2	47,20	**305**		
0,5	0,5	0,45	2,0	30	48	4	4 x DC	2	47,20	**405**		
0,5	0,5	0,45	2,5	30	48	4	5 x DC	2	47,20	**505**		
0,5	0,5	0,45	3,0	30	48	4	6 x DC	2	47,20	**605**		
0,5	0,5	0,45	4,0	30	48	4	8 x DC	2	47,20	**705**		
0,6	0,6	0,55	2,0	30	48	4	3,3 x DC	2	47,20	**306**		
0,6	0,6	0,55	3,0	30	48	4	5 x DC	2	47,20	**406**		
0,6	0,6	0,55	4,5	30	48	4	7,5 x DC	2	47,20	**506**		
0,6	0,6	0,55	6,0	30	48	4	10 x DC	2			47,20	**306**
0,8	1,0	0,75	2,0	30	48	4	2,5 x DC	2	45,92	**308**		
0,8	1,0	0,75	4,0	30	48	4	5 x DC	2	45,92	**408**		
0,8	1,0	0,75	6,0	30	48	4	7,5 x DC	2	45,92	**508**		
0,8	1,0	0,75	8,0	30	48	4	10 x DC	2			45,92	**308**
0,8	1,0	0,75	10,0	30	48	4	12,5 x DC	2			45,92	**408**
1,0	1,5	0,95	2,0	30	48	4	2 x DC	2	44,38	**310**		
1,0	1,5	0,95	4,0	30	48	4	4 x DC	2	44,38	**410**		
1,0	1,5	0,95	6,0	30	48	4	6 x DC	2	44,38	**510**		
1,0	1,5	0,95	8,0	30	48	4	8 x DC	2	44,38	**610**		
1,0	1,5	0,95	10,0	30	48	4	10 x DC	2			44,38	**310**
1,0	1,5	0,95	14,0	30	48	4	14 x DC	2			45,76	**410**
1,5	1,5	1,45	4,0	30	48	4	2,7 x DC	2	45,10	**315**		
1,5	1,5	1,45	6,0	30	48	4	4 x DC	2	45,10	**415**		
1,5	1,5	1,45	8,0	30	48	4	5,3 x DC	2	45,10	**515**		
1,5	1,5	1,45	10,0	30	48	4	6,7 x DC	2	45,10	**615**		
1,5	1,5	1,45	15,0	30	60	4	10 x DC	2			45,92	**315**
1,5	1,5	1,45	20,0	30	60	4	13,3 x DC	2			46,56	**415**
2,0	2,5	1,90	4,0	30	48	4	2 x DC	2	45,10	**320**		

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

→ v_c/f_z Page 262+263

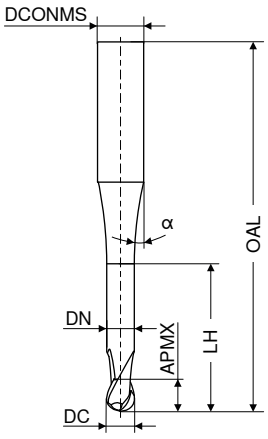
14

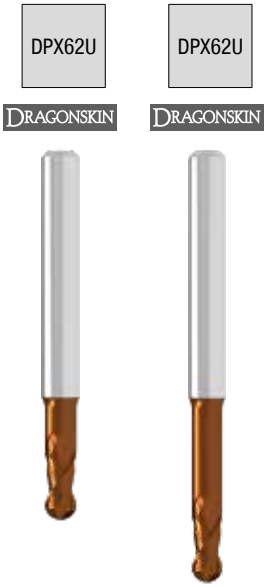
Continued on next page

MonsterMill – Ball Nosed Cutter

- Radius accuracy: ±0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=-3° | ZEFP | 54–70 HRC







Factory standard | Factory standard

HA | HA

DC	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 600 ...		NEW V1 Article no. 53 601 ...	
mm	mm	mm	mm		mm	mm			EUR		EUR	
2,0	2,5	1,90	6,0	30	48	4	3 x DC	2	45,10	**420**		
2,0	2,5	1,90	8,0	30	48	4	4 x DC	2	45,10	**520**		
2,0	2,5	1,90	10,0	30	48	4	5 x DC	2	45,92	**620**		
2,0	2,5	1,90	12,0	30	48	4	6 x DC	2	45,92	**720**		
2,0	2,5	1,90	16,0	30	60	4	8 x DC	2	46,66	**820**		
2,0	2,5	1,90	20,0	30	60	4	10 x DC	2			48,14	**320**
2,0	2,5	1,90	25,0	30	60	4	12,5 x DC	2			48,14	**420**
3,0	3,5	2,90	8,0	30	60	6	2,7 x DC	2	48,58	**330**		
3,0	3,5	2,90	12,0	30	60	6	4 x DC	2	48,58	**430**		
3,0	3,5	2,90	16,0	30	60	6	5,3 x DC	2	48,58	**530**		
3,0	3,5	2,90	20,0	30	70	6	6,7 x DC	2	49,70	**630**		
3,0	3,5	2,90	24,0	30	70	6	8 x DC	2	51,14	**730**		
4,0	4,5	3,90	8,0	30	60	6	2 x DC	2	48,58	**340**		
4,0	4,5	3,90	12,0	30	60	6	3 x DC	2	48,58	**440**		
4,0	4,5	3,90	16,0	30	60	6	4 x DC	2	48,58	**540**		
4,0	4,5	3,90	20,0	30	70	6	5 x DC	2	49,70	**640**		
4,0	4,5	3,90	24,0	30	70	6	6 x DC	2	51,14	**740**		
4,0	4,5	3,90	28,0	30	70	6	7 x DC	2	51,14	**840**		
6,0	6,5	5,90	12,0		60	6	2 x DC	2	48,58	**360**		
6,0	6,5	5,90	16,0		60	6	2,7 x DC	2	48,58	**460**		
6,0	6,5	5,90	20,0		60	6	3,3 x DC	2	48,58	**560**		
8,0	8,5	7,90	16,0		60	8	2 x DC	2	72,32	**380**		
8,0	8,5	7,90	40,0		80	8	5 x DC	2	77,54	**480**		
10,0	10,5	9,90	20,0	30	70	10	2 x DC	2	85,34	**100**		
10,0	10,5	9,90	40,0		90	10	4 x DC	2	92,52	**101**		
12,0	12,5	11,90	24,0		75	12	2 x DC	2	113,50	**120**		
12,0	12,5	11,90	40,0		90	12	3,3 x DC	2	121,20	**121**		

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

→ v_c/f_z Page 262+263

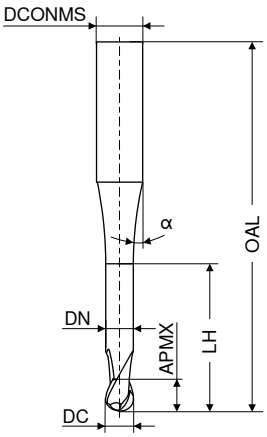
MonsterMill – Ball Nosed Cutter

- Radius accuracy: ±0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=-3° | ZEFP | 54–70 HRC

DPX62U

DRAGONSKIN





Factory standard

HA

NEW V1

DC mm	APMX mm	DN mm	LH mm	α°	OAL mm	DCONMS $_{h5}$ mm	T_x	ZEFP	EUR	Article no. 53 602 ...
3	3,5	2,9	8	30	60	6	2,7 x DC	4	55,54	330
3	3,5	2,9	12	30	60	6	4 x DC	4	55,54	430
3	3,5	2,9	16	30	60	6	5,3 x DC	4	55,54	530
3	3,5	2,9	20	30	70	6	6,7 x DC	4	56,68	630
3	3,5	2,9	24	30	70	6	8 x DC	4	58,08	730
4	4,5	3,9	8	30	60	6	2 x DC	4	57,02	340
4	4,5	3,9	12	30	60	6	3 x DC	4	58,04	440
4	4,5	3,9	16	30	60	6	4 x DC	4	58,04	540
4	4,5	3,9	20	30	70	6	5 x DC	4	59,16	640
4	4,5	3,9	24	30	70	6	6 x DC	4	60,58	740
4	4,5	3,9	28	30	70	6	7 x DC	4	60,58	840
6	6,5	5,9	12		60	6	2 x DC	4	60,50	360
6	6,5	5,9	16		60	6	2,7 x DC	4	62,62	460
6	6,5	5,9	20		60	6	3,3 x DC	4	62,62	560
8	8,5	7,9	16		60	8	2 x DC	4	79,68	380
8	8,5	7,9	40		80	8	5 x DC	4	84,86	480
10	10,5	9,9	20		70	10	2 x DC	4	94,34	100
10	10,5	9,9	40		90	10	4 x DC	4	101,60	101
12	12,5	11,9	24		75	12	2 x DC	4	124,20	120
12	12,5	11,9	40		90	12	3,3 x DC	4	131,90	121

Steel	○
hardened < 45 HRC	○
hardened 46–55 HRC	○
hardened 56–60 HRC	●
hardened 61–65 HRC	●
hardened 65–70 HRC	●

→ v_c/f_z Page 271

14

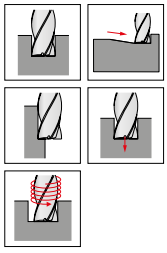
MonsterMill – Plunge milling cutter with corner radius

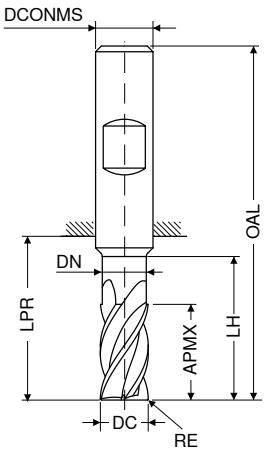
PCR
UNI

λ_s=36°
γ_s= 8°

ZEFP

HPC

















DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB

V1 | V1 | V1

DC f8	RE ±0,03	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 613 ...		Article no. 52 614 ...		Article no. 52 615 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
5,7	0,20	10			18	54	6	4	44,19	057				
5,7	0,20	13	5,5	19	21	57	6	4			44,42	057		
5,7	0,20	13	5,5	24	26	62	6	4					51,25	057
6,0	0,20	10			18	54	6	4	44,19	060				
6,0	0,20	13	5,8	19	21	57	6	4			46,29	060		
6,0	0,20	13	5,8	24	26	62	6	4					52,77	060
6,7	0,20	11			22	58	8	4	53,01	067				
6,7	0,20	16	6,5	25	27	63	8	4			52,46	067		
6,7	0,20	16	6,4	30	32	68	8	4					69,95	067
7,0	0,20	11			22	58	8	4	53,01	070				
7,0	0,20	16	6,8	25	27	63	8	4			52,46	070		
7,0	0,20	16	6,7	30	32	68	8	4					69,95	070
7,7	0,20	12			22	58	8	4	53,01	077				
7,7	0,20	19	7,5	25	27	63	8	4			54,01	077		
7,7	0,20	21	7,4	30	32	68	8	4					69,95	077
8,0	0,20	12			22	58	8	4	53,01	080				
8,0	0,20	19	7,8	25	27	63	8	4			55,88	080		
8,0	0,20	21	7,7	30	32	68	8	4					73,08	080
8,7	0,32	13			26	66	10	4	68,89	087				
8,7	0,32	19	8,5	30	32	72	10	4			78,47	087		
8,7	0,32	22	8,4	38	40	80	10	4					87,38	087
9,0	0,32	13			26	66	10	4	68,89	090				
9,0	0,32	19	8,8	30	32	72	10	4			78,47	090		
9,0	0,32	22	8,7	38	40	80	10	4					87,38	090
9,7	0,32	14			26	66	10	4	68,89	097				
9,7	0,32	22	9,5	30	32	72	10	4			78,47	097		
9,7	0,32	22	9,4	38	40	80	10	4					87,38	097
10,0	0,32	14			26	66	10	4	68,89	100				
10,0	0,32	22	9,8	30	32	72	10	4			74,62	100		
10,0	0,32	22	9,7	38	40	80	10	4					83,22	100
11,7	0,32	16			28	73	12	4	89,94	117				
11,7	0,32	26	11,5	36	38	83	12	4			100,50	117		
11,7	0,32	26	11,3	46	48	93	12	4					119,40	117
12,0	0,32	16			28	73	12	4	89,94	120				
12,0	0,32	26	11,8	36	38	83	12	4			95,89	120		
12,0	0,32	26	11,6	46	48	93	12	4					113,70	120
13,7	0,32	18			30	75	14	4	113,60	137				
13,7	0,32	26	13,5	36	38	83	14	4			119,10	137		
13,7	0,32	26	13,3	52	54	99	14	4					144,00	137
14,0	0,32	18			30	75	14	4	113,60	140				
14,0	0,32	26	13,8	36	38	83	14	4			123,50	140		

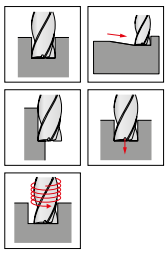
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals			
Heat resistant alloys			
hardened materials			

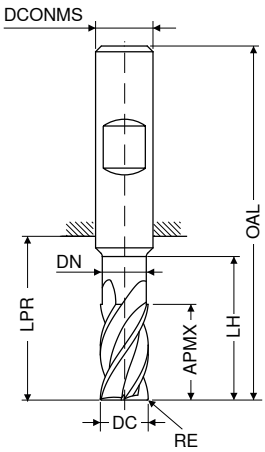
→ v_c/f_z Page 272+273

Continued on next page

MonsterMill – Plunge milling cutter with corner radius

PCR UNI | λ_s=36° 38° γ_s= 8° | ZEFP | HPC

















DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB

V1 | V1 | V1

DC f8	RE ±0,03	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 613 ...		Article no. 52 614 ...		Article no. 52 615 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
14,0	0,32	26	13,6	52	54	99	14	4					140,40	140
15,5	0,32	22			34	82	16	4	144,40	155				
15,5	0,32	32	15,3	42	44	92	16	4			162,00	155		
15,5	0,32	36	15,0	58	60	108	16	4					200,90	155
16,0	0,32	22			34	82	16	4	144,40	160				
16,0	0,32	32	15,8	42	44	92	16	4			167,50	160		
16,0	0,32	36	15,5	58	60	108	16	4					196,40	160
17,5	0,32	24			36	84	18	4	172,00	175				
17,5	0,32	32	17,3	42	44	92	18	4			189,60	175		
17,5	0,32	36	17,0	67	69	117	18	4					226,00	175
18,0	0,32	24			36	84	18	4	172,00	180				
18,0	0,32	32	17,8	42	44	92	18	4			195,10	180		
18,0	0,32	36	17,5	67	69	117	18	4					225,50	180
19,5	0,50	26			42	92	20	4	212,80	195				
19,5	0,50	38	19,3	52	54	104	20	4			255,70	195		
19,5	0,50	41	19,0	74	76	126	20	4					331,60	195
20,0	0,50	26			42	92	20	4	212,80	200				
20,0	0,50	38	19,8	52	54	104	20	4			264,60	200		
20,0	0,50	41	19,5	74	76	126	20	4					325,50	200

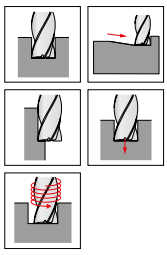
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals			
Heat resistant alloys			
hardened materials			

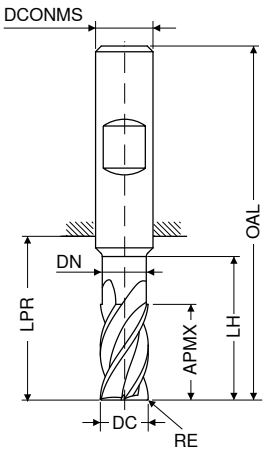
→ v_c/f_z Page 272+273

14

MonsterMill – Plunge milling cutter with corner radius

PCR ALU | λ_s=36° γ_s= 8° | ZEFP | HPC













DIN 6527 | HB | V1

DIN 6527 | HB | V1

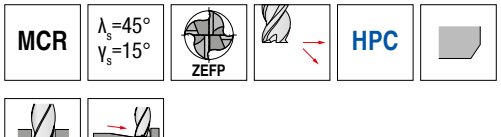
DC f8 mm	RE ±0,03 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 616 ...	EUR	Article no. 52 617 ...	EUR
5,0	0,20	13	4,8	19	21	57	6	4	050	51,75	050	57,09
5,7	0,20	13	5,5	19	21	57	6	4	057	51,75	057	57,09
6,0	0,20	13	5,8	19	21	57	6	4	060	53,30	060	58,78
6,7	0,20	16	6,5	25	27	63	8	4	067	61,38	067	76,72
7,0	0,20	16	6,8	25	27	63	8	4	070	61,38	070	76,72
7,7	0,20	19	7,5	25	27	63	8	4	077	61,38	077	76,72
8,0	0,20	19	7,8	25	27	63	8	4	080	65,02	080	80,08
8,7	0,32	19	8,5	30	32	72	10	4	087	85,82	087	94,39
9,0	0,32	19	8,8	30	32	72	10	4	090	85,82	090	94,39
9,7	0,32	22	9,5	30	32	72	10	4	097	85,82	097	94,39
10,0	0,32	22	9,8	30	32	72	10	4	100	83,22	100	90,75
11,7	0,32	26	11,5	36	38	83	12	4	117	111,30	117	129,50
12,0	0,32	26	11,8	36	38	83	12	4	120	106,10	120	124,30
13,7	0,32	26	13,5	36	38	83	14	4	137	132,60	137	157,80
14,0	0,32	26	13,8	36	38	83	14	4	140	137,30	140	154,20
15,5	0,32	32	15,3	42	44	92	16	4	155	178,40	155	217,40
16,0	0,32	32	15,8	42	44	92	16	4	160	183,90	160	212,80
17,5	0,32	32	17,3	42	44	92	18	4	175	207,50	175	243,70
18,0	0,32	32	17,8	42	44	92	18	4	180	212,50	180	243,20
19,5	0,50	38	19,3	52	54	104	20	4	195	278,00	195	353,70
20,0	0,50	38	19,8	52	54	104	20	4	200	287,40	200	347,70
5,0	0,20	13	4,8	19	21	57	6	4	050	51,75	050	57,09

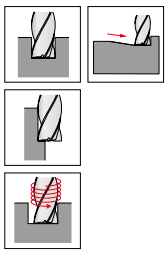
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

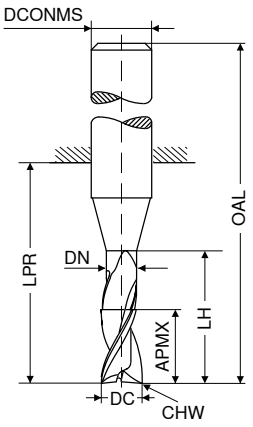
→ v_c/f_z Page 274+275

MonsterMill – Rough milling cutter

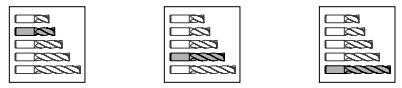
▲ Cutting edges with irregular pitch











Factory standard | Factory standard | Factory standard

HB | HB | HB

V1 | V1 | V1

DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 752 ...		Article no. 52 752 ...		Article no. 52 752 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
1	1,5	0,9	3	10	38	3	0,09	3	113,60	010 [1]				
2	3,0	1,9	8	21	57	6	0,17	3	112,40	020				
3	5,0	2,9	14	21	57	6	0,17	3	126,80	030				
3	8,0	2,9	14	21	57	6	0,17	3			134,50	031		
3	5,0	2,9	19	26	62	6	0,17	3					129,00	032
4	8,0	3,8	18	21	57	6	0,17	3	125,70	040				
4	11,0	3,8	18	21	57	6	0,17	3			133,30	041		
4	8,0	3,8	23	26	62	6	0,17	3					127,80	042
5	9,0	4,8	19	21	57	6	0,17	3	122,30	050				
5	13,0	4,8	19	21	57	6	0,17	3			131,30	051		
5	9,0	4,8	24	26	62	6	0,17	3					125,70	052
6	10,0	5,8	20	21	57	6	0,17	4	120,10	060				
6	13,0	5,8	20	21	57	6	0,17	4			129,00	061		
6	10,0	5,8	25	26	62	6	0,17	4					122,30	062
8	12,0	7,7	25	27	63	8	0,28	4	132,30	080				
8	19,0	7,7	25	27	63	8	0,28	4			157,60	081		
8	12,0	7,7	30	32	68	8	0,28	4					134,50	082
10	15,0	9,5	30	32	72	10	0,28	4	148,80	100				
10	22,0	9,5	30	32	72	10	0,28	4			164,20	101		
10	15,0	9,5	35	40	80	10	0,28	4					154,30	102
12	18,0	11,5	35	38	83	12	0,28	4	183,00	120				
12	26,0	11,5	35	38	83	12	0,28	4			199,50	121		
12	18,0	11,5	45	48	93	12	0,28	4					191,80	122
14	21,0	13,5	35	38	83	14	0,28	4	213,80	140				
14	26,0	13,5	35	38	83	14	0,28	4			222,60	141		
14	21,0	13,5	50	54	99	14	0,28	4					231,50	142
16	24,0	15,5	40	44	92	16	0,43	4	297,50	160				
16	32,0	15,5	40	44	92	16	0,43	4			324,10	161		
16	24,0	15,5	55	60	108	16	0,43	4					322,90	162
20	30,0	19,5	50	54	104	20	0,43	4	397,90	200				
20	38,0	19,5	50	54	104	20	0,43	4			423,30	201		
20	30,0	19,5	70	76	126	20	0,43	4					437,50	202

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials	○	○	○

1) DIN 6535 HA Shank

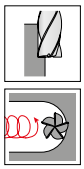
→ v_c/f_z Page 276–279

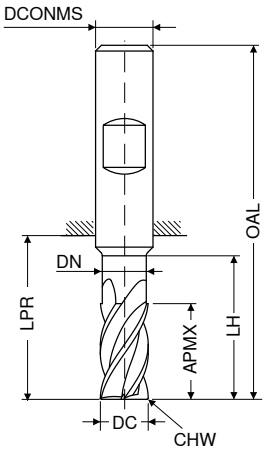
14

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=30° 31° γ_s= 8° | ZEFP | HPC













Factory standard

Factory standard

HB

HB

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 585 ... EUR		V1 Article no. 53 587 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm					
6	13	5,8	19	21	57	6	0,2	6	46,69	060		
6	19	5,8	25	27	63	6	0,2	6			47,06	060
8	21	7,7	25	27	63	8	0,2	6	60,88	080		
8	25	7,7	33	35	71	8	0,2	6			61,29	080
10	22	9,7	30	32	72	10	0,2	6	78,21	100		
10	31	9,7	41	43	83	10	0,2	6			85,86	100
12	26	11,6	36	38	83	12	0,2	6	100,60	120		
12	37	11,6	47	49	94	12	0,2	6			101,30	120
16	36	15,5	42	44	92	16	0,2	6	200,60	160		
16	49	15,5	61	63	111	16	0,2	6			209,40	160
20	41	19,5	52	54	104	20	0,2	6	288,50	200		
20	61	19,5	75	77	127	20	0,2	6			293,20	200

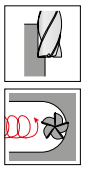
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys	○	○
hardened materials		

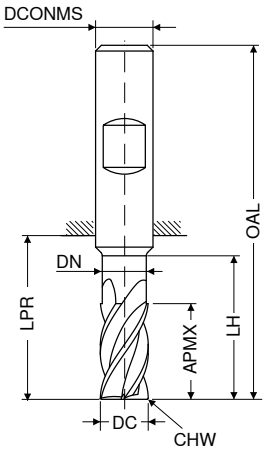
→ v_c/f_z Page 280+281

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=35° 36° γ_s= 8° | ZEFP | HPC | DPX72S | DRAGONSKIN









Factory standard

HB

V1

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 589 ...
mm	mm	mm	mm	mm	mm	mm	mm		EUR
6	25	5,8	29	31	67	6	0,2	5	48,71 **060**
8	33	7,7	38	40	76	8	0,2	5	62,93 **080**
10	41	9,7	47	49	89	10	0,2	5	87,52 **100**
12	49	11,6	55	57	102	12	0,2	5	106,60 **120**
16	65	15,5	73	75	123	16	0,2	5	213,80 **160**
20	82	19,5	91	93	143	20	0,2	5	300,90 **200**

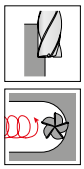
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

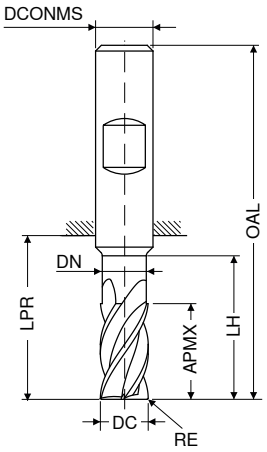
→ v_c/f_z Page 282+283

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=30° 31° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN





Factory standard

HB 

V1

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 586 ...
mm	mm	mm	mm	mm	mm	mm	mm		EUR
6	0,2	13	5,8	19	21	57	6	6	46,69 06002
6	1,0	13	5,8	19	21	57	6	6	46,94 06010
6	1,5	13	5,8	19	21	57	6	6	46,94 06015
8	0,2	21	7,7	25	27	63	8	6	60,88 08002
8	1,0	21	7,7	25	27	63	8	6	62,34 08010
8	1,5	21	7,7	25	27	63	8	6	62,34 08015
8	2,0	21	7,7	25	27	63	8	6	62,34 08020
10	0,2	22	9,7	30	32	72	10	6	78,21 10002
10	1,0	22	9,7	30	32	72	10	6	80,36 10010
10	1,5	22	9,7	30	32	72	10	6	80,36 10015
10	1,6	22	9,7	30	32	72	10	6	80,36 10016
10	2,0	22	9,7	30	32	72	10	6	80,36 10020
12	0,2	26	11,6	36	38	83	12	6	100,60 12002
12	1,0	26	11,6	36	38	83	12	6	101,10 12010
12	1,5	26	11,6	36	38	83	12	6	101,10 12015
12	1,6	26	11,6	36	38	83	12	6	101,10 12016
12	2,0	26	11,6	36	38	83	12	6	101,10 12020
12	3,0	26	11,6	36	38	83	12	6	101,10 12030
16	0,2	36	15,5	42	44	92	16	6	200,60 16002
16	1,0	36	15,5	42	44	92	16	6	216,30 16010
16	1,5	36	15,5	42	44	92	16	6	209,00 16015
16	1,6	36	15,5	42	44	92	16	6	209,00 16016
16	2,0	36	15,5	42	44	92	16	6	209,00 16020
16	3,0	36	15,5	42	44	92	16	6	209,00 16030
16	4,0	36	15,5	42	44	92	16	6	209,00 16040
20	0,2	41	19,5	52	54	104	20	6	288,50 20002
20	1,0	41	19,5	52	54	104	20	6	291,40 20010
20	1,5	41	19,5	52	54	104	20	6	291,40 20015
20	1,6	41	19,5	52	54	104	20	6	291,40 20016
20	2,0	41	19,5	52	54	104	20	6	291,40 20020
20	3,0	41	19,5	52	54	104	20	6	291,40 20030
20	4,0	41	19,5	52	54	104	20	6	291,40 20040

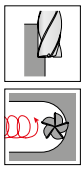
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

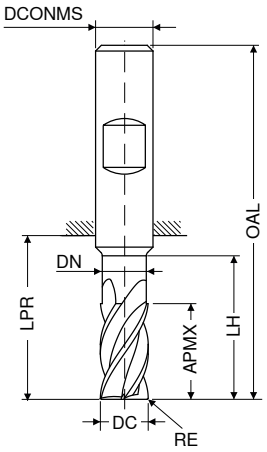
→ v_c/f_z Page 280+281

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC

CCR UNI | λ_s=30° 31° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN





Factory standard

HB 

V1

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 592 ...
mm	mm	mm	mm	mm	mm	mm	mm		EUR
6	0,2	19	5,8	25	27	63	6	6	47,06 06002
6	1,0	19	5,8	25	27	63	6	6	48,50 06010
6	1,5	19	5,8	25	27	63	6	6	48,50 06015
8	0,2	25	7,7	33	35	71	8	6	61,29 08002
8	1,0	25	7,7	33	35	71	8	6	62,93 08010
8	1,5	25	7,7	33	35	71	8	6	62,93 08015
8	2,0	25	7,7	33	35	71	8	6	62,93 08020
10	0,2	31	9,7	41	43	83	10	6	85,86 10002
10	1,0	31	9,7	41	43	83	10	6	87,72 10010
10	1,5	31	9,7	41	43	83	10	6	87,72 10015
10	1,6	31	9,7	41	43	83	10	6	87,72 10016
10	2,0	31	9,7	41	43	83	10	6	87,72 10020
12	0,2	37	11,6	47	49	94	12	6	101,30 12002
12	1,0	37	11,6	47	49	94	12	6	103,90 12010
12	1,5	37	11,6	47	49	94	12	6	103,90 12015
12	1,6	37	11,6	47	49	94	12	6	103,90 12016
12	2,0	37	11,6	47	49	94	12	6	103,90 12020
12	3,0	37	11,6	47	49	94	12	6	103,90 12030
16	0,2	49	15,5	61	63	111	16	6	209,40 16002
16	1,0	49	15,5	61	63	111	16	6	211,60 16010
16	1,5	49	15,5	61	63	111	16	6	211,60 16015
16	1,6	49	15,5	61	63	111	16	6	211,60 16016
16	2,0	49	15,5	61	63	111	16	6	211,60 16020
16	3,0	49	15,5	61	63	111	16	6	211,60 16030
16	4,0	49	15,5	61	63	111	16	6	211,60 16040
20	0,2	61	19,5	75	77	127	20	6	293,20 20002
20	1,0	61	19,5	75	77	127	20	6	296,50 20010
20	1,5	61	19,5	75	77	127	20	6	296,50 20015
20	1,6	61	19,5	75	77	127	20	6	296,50 20016
20	2,0	61	19,5	75	77	127	20	6	296,50 20020
20	3,0	61	19,5	75	77	127	20	6	296,50 20030
20	4,0	61	19,5	75	77	127	20	6	296,50 20040

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

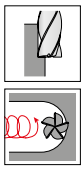
→ v_c/f_z Page 280+281

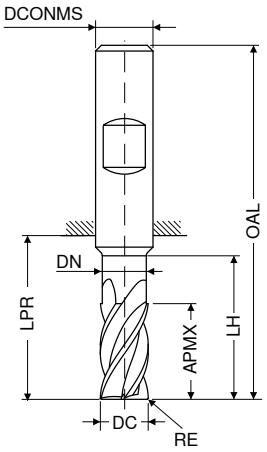
14

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=35° 36° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN





Factory standard

HB

V1

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 593 ...
mm	mm	mm	mm	mm	mm	mm	mm		EUR
6	0,2	25	5,8	29	31	67	6	5	48,71 06002
6	1,0	25	5,8	29	31	67	6	5	50,14 06010
6	1,5	25	5,8	29	31	67	6	5	50,14 06015
8	0,2	33	7,7	38	40	76	8	5	62,93 08002
8	1,0	33	7,7	38	40	76	8	5	64,58 08010
8	1,5	33	7,7	38	40	76	8	5	64,58 08015
8	2,0	33	7,7	38	40	76	8	5	64,58 08020
10	0,2	41	9,7	47	49	89	10	5	87,52 10002
10	1,0	41	9,7	47	49	89	10	5	89,49 10010
10	1,5	41	9,7	47	49	89	10	5	89,49 10015
10	1,6	41	9,7	47	49	89	10	5	89,49 10016
10	2,0	41	9,7	47	49	89	10	5	89,49 10020
12	0,2	49	11,6	55	57	102	12	5	106,60 12002
12	1,0	49	11,6	55	57	102	12	5	109,20 12010
12	1,5	49	11,6	55	57	102	12	5	109,20 12015
12	1,6	49	11,6	55	57	102	12	5	109,20 12016
12	2,0	49	11,6	55	57	102	12	5	109,20 12020
12	3,0	49	11,6	55	57	102	12	5	109,20 12030
16	0,2	65	15,5	73	75	123	16	5	213,80 16002
16	1,0	65	15,5	73	75	123	16	5	217,10 16010
16	1,5	65	15,5	73	75	123	16	5	217,10 16015
16	1,6	65	15,5	73	75	123	16	5	217,10 16016
16	2,0	65	15,5	73	75	123	16	5	217,10 16020
16	3,0	65	15,5	73	75	123	16	5	217,10 16030
16	4,0	65	15,5	73	75	123	16	5	217,10 16040
20	0,2	82	19,5	91	93	143	20	5	300,90 20002
20	1,0	82	19,5	91	93	143	20	5	305,30 20010
20	1,5	82	19,5	91	93	143	20	5	305,30 20015
20	1,6	82	19,5	91	93	143	20	5	305,30 20016
20	2,0	82	19,5	91	93	143	20	5	305,30 20020
20	3,0	82	19,5	91	93	143	20	5	305,30 20030
20	4,0	82	19,5	91	93	143	20	5	305,30 20040

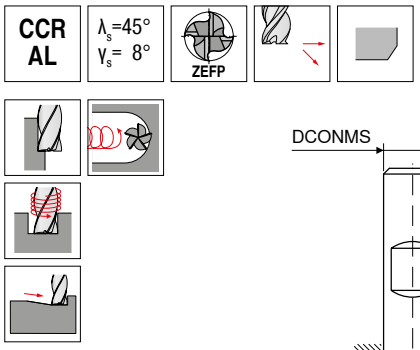
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

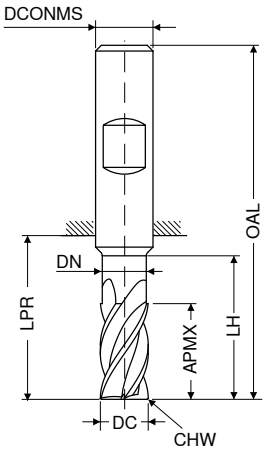
→ v_c/f_z Page 282+283

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC

CCR AL | λ_s=45° γ_s= 8° | ZEFP







Factory standard | Factory standard

HB | HB

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 590 ...		V1 Article no. 53 591 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	19	5,8	24	30	66	6	0,2	4	49,48	060		
6	25	5,8	30	35	71	6	0,2	4			51,14	060
8	25	7,7	32	37	73	8	0,2	4	64,37	080		
8	33	7,7	40	44	80	8	0,2	4			66,02	080
10	31	9,7	40	49	89	10	0,2	4	89,72	100		
10	41	9,7	50	55	95	10	0,2	4			91,37	100
12	37	11,6	48	56	101	12	0,2	4	107,90	120		
12	49	11,6	60	64	109	12	0,2	4			113,60	120
16	49	15,5	64	72	120	16	0,2	4	221,50	160		
16	65	15,5	80	84	132	16	0,2	4			226,00	160
20	62	19,5	80	84	134	20	0,2	4	310,90	200		
20	82	19,5	100	104	154	20	0,2	4			318,60	200

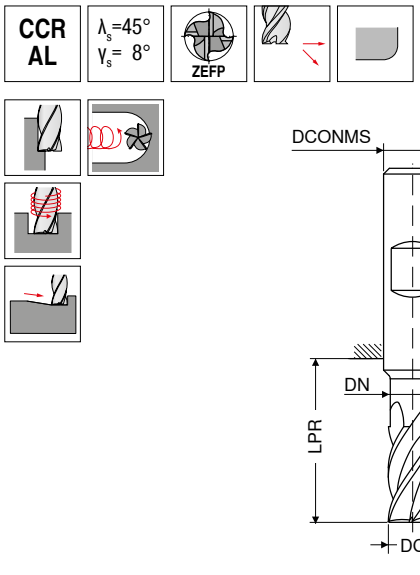
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 284

14

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC





Factory standard

Factory standard

HB

HB

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 53 594 ... EUR		V1 Article no. 53 595 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm					
6	0,2	19	5,8	24	30	66	6	4	49,48	06002		
6	1,0	19	5,8	24	30	66	6	4	50,92	06010		
6	1,5	19	5,8	24	30	66	6	4	50,92	06015		
6	0,2	25	5,8	30	35	71	6	4			51,14	06002
6	1,0	25	5,8	30	35	71	6	4			52,57	06010
6	1,5	25	5,8	30	35	71	6	4			52,57	06015
8	0,2	25	7,7	32	37	73	8	4	64,37	08002		
8	1,0	25	7,7	32	37	73	8	4	66,02	08010		
8	1,5	25	7,7	32	37	73	8	4	66,02	08015		
8	2,0	25	7,7	32	37	73	8	4	66,02	08020		
8	0,2	33	7,7	40	44	80	8	4			66,02	08002
8	1,0	33	7,7	40	44	80	8	4			67,79	08010
8	1,5	33	7,7	40	44	80	8	4			67,79	08015
8	2,0	33	7,7	40	44	80	8	4			67,79	08020
10	0,2	31	9,7	40	49	89	10	4	89,72	10002		
10	1,0	31	9,7	40	49	89	10	4	91,59	10010		
10	1,5	31	9,7	40	49	89	10	4	91,59	10015		
10	1,6	31	9,7	40	49	89	10	4	91,59	10016		
10	2,0	31	9,7	40	49	89	10	4	91,59	10020		
10	0,2	41	9,7	50	55	95	10	4			91,37	10002
10	1,0	41	9,7	50	55	95	10	4			93,35	10010
10	1,5	41	9,7	50	55	95	10	4			93,35	10015
10	1,6	41	9,7	50	55	95	10	4			93,35	10016
10	2,0	41	9,7	50	55	95	10	4			93,35	10020
12	0,2	37	11,6	48	56	101	12	4	107,90	12002		
12	1,0	37	11,6	48	56	101	12	4	110,10	12010		
12	1,5	37	11,6	48	56	101	12	4	110,10	12015		
12	1,6	37	11,6	48	56	101	12	4	110,10	12016		
12	2,0	37	11,6	48	56	101	12	4	110,10	12020		
12	3,0	37	11,6	48	56	101	12	4	110,10	12030		
12	0,2	49	11,6	60	64	109	12	4			113,60	12002
12	1,0	49	11,6	60	64	109	12	4			115,80	12010
12	1,5	49	11,6	60	64	109	12	4			115,80	12015
12	1,6	49	11,6	60	64	109	12	4			115,80	12016
12	2,0	49	11,6	60	64	109	12	4			115,80	12020
12	3,0	49	11,6	60	64	109	12	4			115,80	12030
16	0,2	49	15,5	64	72	120	16	4	221,50	16002		
16	1,0	49	15,5	64	72	120	16	4	223,80	16010		
16	1,5	49	15,5	64	72	120	16	4	223,80	16015		

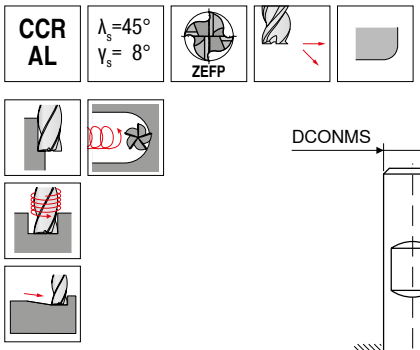
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

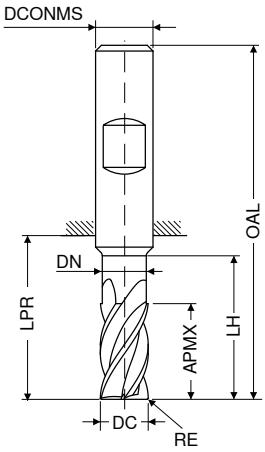
→ v_c/f_z Page 284

Continued on next page

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC







Factory standard

Factory standard

HB

HB

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 53 594 ...	EUR	V1 Article no. 53 595 ...	EUR
mm	mm	mm	mm	mm	mm	mm	mm					
16	1,6	49	15,5	64	72	120	16	4		223,80 16016		
16	2,0	49	15,5	64	72	120	16	4		223,80 16020		
16	3,0	49	15,5	64	72	120	16	4		223,80 16030		
16	4,0	49	15,5	64	72	120	16	4		223,80 16040		
16	0,2	65	15,5	80	84	132	16	4				226,00 16002
16	1,0	65	15,5	80	84	132	16	4				229,30 16010
16	1,5	65	15,5	80	84	132	16	4				229,30 16015
16	1,6	65	15,5	80	84	132	16	4				229,30 16016
16	2,0	65	15,5	80	84	132	16	4				229,30 16020
16	3,0	65	15,5	80	84	132	16	4				229,30 16030
16	4,0	65	15,5	80	84	132	16	4				229,30 16040
20	0,2	62	19,5	80	84	134	20	4		310,90 20002		
20	1,0	62	19,5	80	84	134	20	4		314,10 20010		
20	1,5	62	19,5	80	84	134	20	4		314,10 20015		
20	1,6	62	19,5	80	84	134	20	4		314,10 20016		
20	2,0	62	19,5	80	84	134	20	4		314,10 20020		
20	3,0	62	19,5	80	84	134	20	4		314,10 20030		
20	4,0	62	19,5	80	84	134	20	4		314,10 20040		
20	0,2	82	19,5	100	104	154	20	4				318,60 20002
20	1,0	82	19,5	100	104	154	20	4				321,90 20010
20	1,5	82	19,5	100	104	154	20	4				321,90 20015
20	1,6	82	19,5	100	104	154	20	4				321,90 20016
20	2,0	82	19,5	100	104	154	20	4				321,90 20020
20	3,0	82	19,5	100	104	154	20	4				321,90 20030
20	4,0	82	19,5	100	104	154	20	4				321,90 20040

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

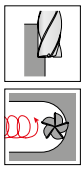
→ v_c/f_z Page 284

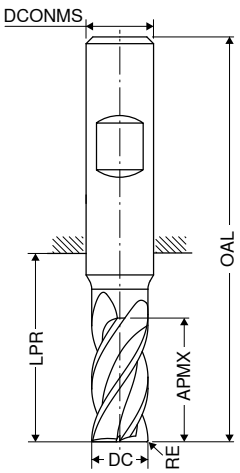
14

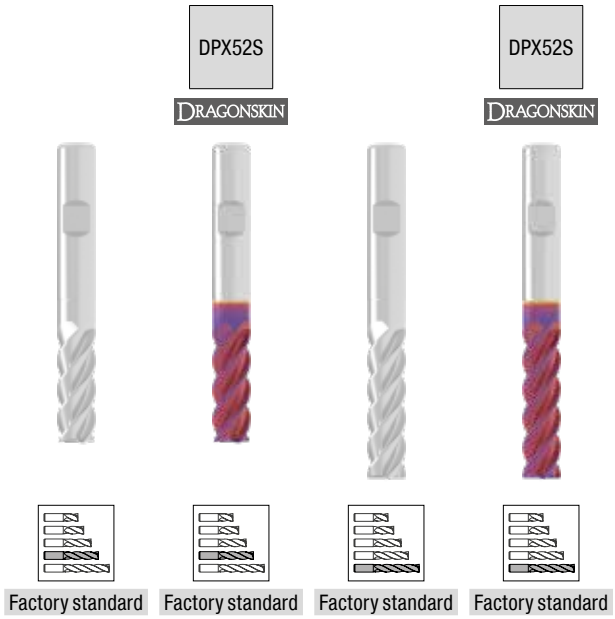
CircularLine – End milling cutter with corner radius

▲ Chip breaker 0.9 x DC

CCR Ti | λ_s=40° γ_s=10° | ZEFP | HPC







Factory standard | Factory standard | Factory standard | Factory standard

HB | HB | HB | HB

NEW V1 | NEW V1 | NEW V1 | NEW V1

DC $_{e8}$	RE $_{\pm 0,01}$	APMX	LPR	OAL	DCONMS $_{h5}$	ZEFP	Article no. 52 509 ...		Article no. 52 510 ...		Article no. 52 509 ...		Article no. 52 510 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
6	0,1	18	29	65	6	5	61,37	06000	68,26	06000				
6	0,1	24	31	67	6	5					66,70	06100	73,58	06100
8	0,2	24	34	70	8	5	80,45	08000	90,15	08000				
8	0,2	32	44	80	8	5					83,77	08100	93,45	08100
10	0,2	30	40	80	10	5	100,60	10000	112,50	10000				
10	0,2	40	50	90	10	5					106,50	10100	118,50	10100
12	0,2	36	50	95	12	5	128,90	12000	142,40	12000				
12	0,2	48	55	100	12	5					134,50	12100	148,00	12100
16	0,2	48	62	110	16	5	199,40	16000	215,90	16000				
16	0,3	64	72	120	16	5					212,10	16100	228,70	16100
20	0,3	60	75	125	20	5	263,00	20000	283,40	20000				
20	0,3	80	90	140	20	5					325,10	20100	345,50	20100

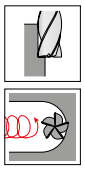
Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

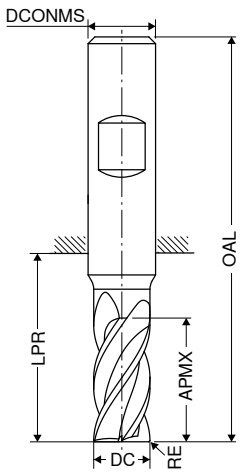
→ v_c/f_z Page 286+287

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR H | λ_s= 60° γ_s= -6° | ZEFP | 45–70 HRC





DPX62S

DRAGONSKIN





Factory standard

HB 

NEW V1

DC e8	RE ±0,03	APMX	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 596 ...
mm	mm	mm	mm	mm	mm		EUR
6	0,2	19	24	60	6	6	50,44 06002
6	1,0	19	24	60	6	6	50,44 06010
8	0,2	25	31	67	8	6	69,48 08002
8	1,0	25	31	67	8	6	69,48 08010
10	0,2	31	37	77	10	6	96,24 10002
10	1,0	31	37	77	10	6	96,24 10010
10	1,5	31	37	77	10	6	96,24 10015
12	0,2	37	43	88	12	6	114,30 12002
12	1,0	37	43	88	12	6	114,30 12010
12	1,5	37	43	88	12	6	114,30 12015
12	2,0	37	43	88	12	6	114,30 12020
12	3,0	37	43	88	12	6	114,30 12030
16	0,2	49	56	104	16	6	229,00 16002
16	1,0	49	56	104	16	6	229,00 16010
16	1,5	49	56	104	16	6	229,00 16015
16	2,0	49	56	104	16	6	229,00 16020
16	3,0	49	56	104	16	6	229,00 16030
20	0,2	61	68	118	20	6	330,20 20002
20	1,0	61	68	118	20	6	330,20 20010
20	1,5	61	68	118	20	6	330,20 20015
20	2,0	61	68	118	20	6	330,20 20020
20	3,0	61	68	118	20	6	330,20 20030

hardened < 45 HRC	●
hardened 46–55 HRC	●
hardened 56–60 HRC	●
hardened 61–65 HRC	●
hardened 65–70 HRC	●

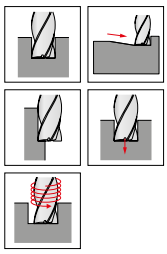
→ v_c/f_z Page 285

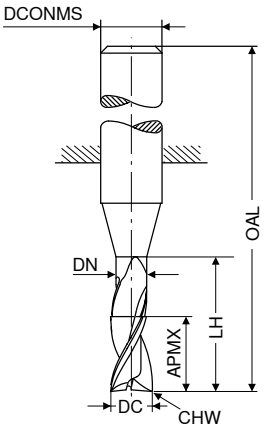
14

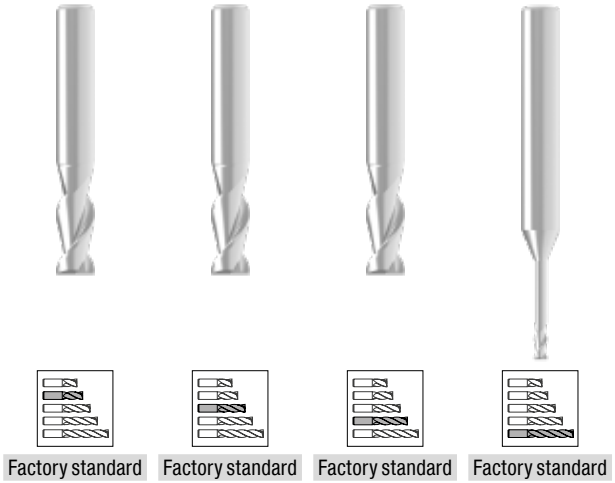
AluLine – End milling cutter

▲ with polished chip flutes







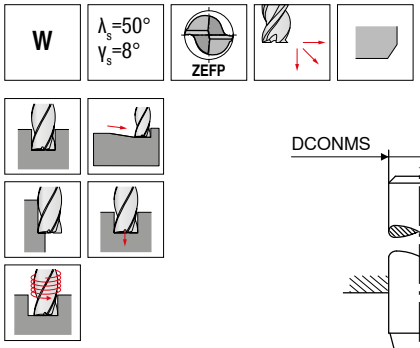


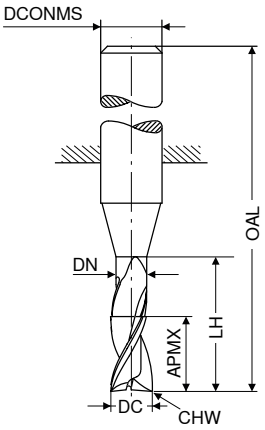
DC h6	APMX	DN	LH	OAL	DCONMS h5	CHW	ZEFP	Factory standard HA V1 Article no. 53 500 ...		Factory standard HA V1 Article no. 53 501 ...		Factory standard HA V1 Article no. 53 502 ...		Factory standard HA V1 Article no. 53 503 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
2,0	8	1,9	16	57	6	0,05	2							24,36	**020**
2,5	8	2,4	16	57	6	0,10	2							26,01	**025**
3,0	8	2,9	18	57	6	0,10	2							25,46	**030**
3,5	11	3,4	18	57	6	0,10	2					28,43	**035**		
4,0	11	3,9	18	57	6	0,10	2					28,43	**040**		
4,5	13	4,4	20	57	6	0,10	2					28,00	**045**		
5,0	13	4,9	20	57	6	0,10	2					26,88	**050**		
5,5	13	5,4	20	57	6	0,10	2			26,46	**055**				
6,0	13	5,9	20	57	6	0,10	2			24,91	**060**				
6,5	16	6,2	26	63	8	0,10	2					37,25	**065**		
7,0	16	6,7	26	63	8	0,10	2			36,48	**070**				
7,5	19	7,2	26	63	8	0,10	2			35,60	**075**				
8,0	19	7,7	26	63	8	0,10	2			34,93	**080**				
8,5	19	8,2	29	72	10	0,10	2			52,79	**085**				
9,0	19	8,7	29	72	10	0,10	2			51,47	**090**				
9,5	22	9,2	29	72	10	0,10	2			50,14	**095**				
10,0	22	9,7	29	72	10	0,10	2	48,93	**100**						
10,5	26	10,2	36	83	12	0,10	2			80,24	**105**				
11,0	26	10,7	36	83	12	0,10	2			78,25	**110**				
11,5	26	11,2	36	83	12	0,10	2			76,26	**115**				
12,0	26	11,7	36	83	12	0,10	2			76,26	**120**				
12,5	26	12,2	36	83	14	0,10	2	99,08	**125**						
13,0	26	12,7	36	83	14	0,10	2	98,31	**130**						
13,5	26	13,2	36	83	14	0,10	2	97,54	**135**						
14,0	26	13,7	36	83	14	0,10	2	98,43	**140**						
14,5	32	14,0	42	92	16	0,10	2	134,50	**145**						
15,0	32	14,5	42	92	16	0,10	2	131,30	**150**						
15,5	32	15,0	42	92	16	0,10	2	129,00	**155**						
16,0	32	15,5	42	92	16	0,10	2	135,50	**160**						
16,5	32	16,0	42	92	18	0,10	2	172,00	**165**						
17,0	32	16,5	42	92	18	0,10	2	168,60	**170**						
17,5	32	17,0	42	92	18	0,10	2	165,40	**175**						
18,0	32	17,5	42	92	18	0,10	2	165,40	**180**						
18,5	38	18,0	52	104	20	0,10	2	206,10	**185**						
19,0	38	18,5	52	104	20	0,10	2	200,60	**190**						
19,5	38	19,0	52	104	20	0,10	2	196,30	**195**						
20,0	38	19,5	52	104	20	0,10	2	195,10	**200**						

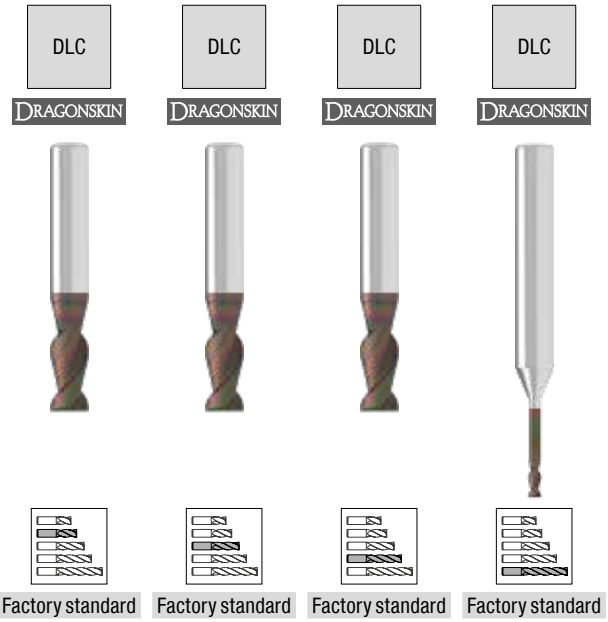
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

AluLine – End milling cutter









DC h6	APMX	DN	LH	OAL	DCONMS h5	CHW	ZEFP	V1 Article no. 53 504 ...		V1 Article no. 53 505 ...		V1 Article no. 53 506 ...		V1 Article no. 53 507 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
2,0	8	1,9	16	57	6	0,05	2							35,27	**020**
2,5	8	2,4	16	57	6	0,10	2							35,71	**025**
3,0	8	2,9	18	57	6	0,10	2							35,16	**030**
3,5	11	3,4	18	57	6	0,10	2					38,14	**035**		
4,0	11	3,9	18	57	6	0,10	2					38,14	**040**		
4,5	13	4,4	20	57	6	0,10	2					37,80	**045**		
5,0	13	4,9	20	57	6	0,10	2					36,70	**050**		
5,5	13	5,4	20	57	6	0,10	2			36,15	**055**				
6,0	13	5,9	20	57	6	0,10	2			34,61	**060**				
6,5	16	6,2	26	63	8	0,10	2					46,96	**065**		
7,0	16	6,7	26	63	8	0,10	2			46,19	**070**				
7,5	19	7,2	26	63	8	0,10	2			45,41	**075**				
8,0	19	7,7	26	63	8	0,10	2			44,74	**080**				
8,5	19	8,2	29	72	10	0,10	2			62,49	**085**				
9,0	19	8,7	29	72	10	0,10	2			61,29	**090**				
9,5	22	9,2	29	72	10	0,10	2			59,84	**095**				
10,0	22	9,7	29	72	10	0,10	2	58,74	**100**						
10,5	26	10,2	36	83	12	0,10	2			89,94	**105**				
11,0	26	10,7	36	83	12	0,10	2			87,95	**110**				
11,5	26	11,2	36	83	12	0,10	2			85,97	**115**				
12,0	26	11,7	36	83	12	0,10	2			85,97	**120**				
12,5	26	12,2	36	83	14	0,10	2	108,90	**125**						
13,0	26	12,7	36	83	14	0,10	2	108,10	**130**						
13,5	26	13,2	36	83	14	0,10	2	107,20	**135**						
14,0	26	13,7	36	83	14	0,10	2	108,20	**140**						
14,5	32	14,0	42	92	16	0,10	2	144,40	**145**						
15,0	32	14,5	42	92	16	0,10	2	141,00	**150**						
15,5	32	15,0	42	92	16	0,10	2	137,80	**155**						
16,0	32	15,5	42	92	16	0,10	2	144,40	**160**						
16,5	32	16,0	42	92	18	0,10	2	181,80	**165**						
17,0	32	16,5	42	92	18	0,10	2	177,50	**170**						
17,5	32	17,0	42	92	18	0,10	2	174,10	**175**						
18,0	32	17,5	42	92	18	0,10	2	175,20	**180**						
18,5	38	18,0	52	104	20	0,10	2	216,00	**185**						
19,0	38	18,5	52	104	20	0,10	2	210,50	**190**						
19,5	38	19,0	52	104	20	0,10	2	206,10	**195**						
20,0	38	19,5	52	104	20	0,10	2	205,00	**200**						

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

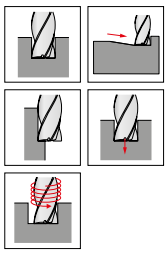
→ v_c/f_z Page 288+289

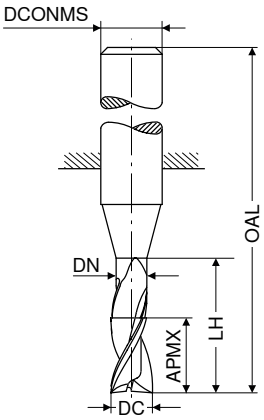
14

AluLine – End milling cutter

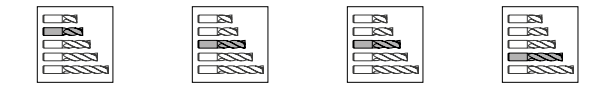
▲ with polished chip flutes









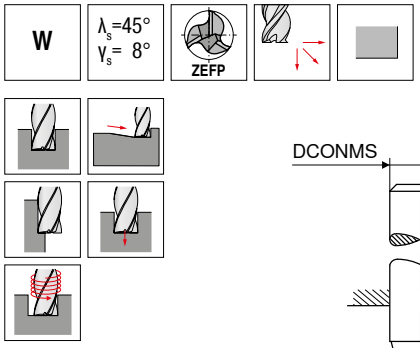


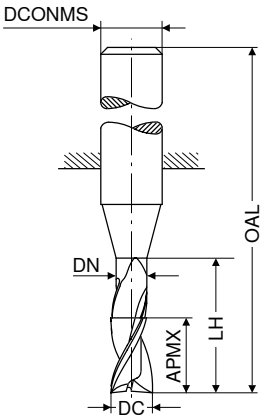
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Factory standard HA V1 Article no. 53 517 ... EUR		Factory standard HA V1 Article no. 53 518 ... EUR		Factory standard HA V1 Article no. 53 519 ... EUR		Factory standard HA V1 Article no. 53 520 ... EUR	
mm	mm	mm	mm	mm	mm									
3	8	2,7	13	57	6	3							27,33	030
4	11	3,7	17	57	6	3							29,98	040
5	13	4,7	19	57	6	3					29,65	050		
6	13	5,7	19	57	6	3					27,78	060		
6	18	5,7	24	62	6	3							30,09	060
8	21	7,4	25	63	8	3			39,01	080				
8	24	7,4	30	68	8	3					44,42	080		
10	22	9,2	30	72	10	3			54,11	100				
10	30	9,2	38	80	10	3					58,64	100		
12	26	11,0	36	83	12	3			84,20	120				
12	36	11,0	46	93	12	3					91,15	120		
14	26	13,0	36	83	14	3	107,60	140						
16	36	15,0	42	92	16	3	149,90	160						
16	48	15,0	58	108	16	3					164,20	160		
18	36	17,0	42	92	18	3	181,80	180						
20	41	19,0	52	104	20	3	215,00	200						
20	60	19,0	74	126	20	3					307,50	200		

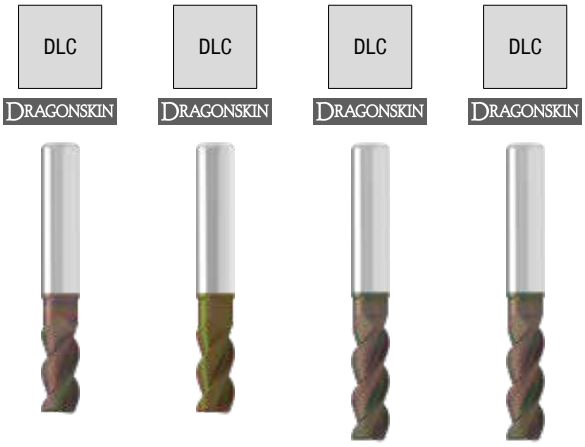
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

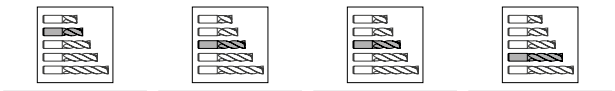
→ v_c/f_z Page 288+289

AluLine – End milling cutter











DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 53 521 ... EUR		V1 Article no. 53 522 ... EUR		V1 Article no. 53 523 ... EUR		V1 Article no. 53 524 ... EUR	
mm	mm	mm	mm	mm	mm									
3	8	2,7	13	57	6	3							37,14	030
4	11	3,7	17	57	6	3							39,79	040
5	13	4,7	19	57	6	3					39,35	050		
6	13	5,7	19	57	6	3					37,59	060		
6	18	5,7	24	62	6	3							39,90	060
8	21	7,4	25	63	8	3			48,71	080				
8	24	7,4	30	68	8	3					54,11	080		
10	22	9,2	30	72	10	3			63,81	100				
10	30	9,2	38	80	10	3					68,44	100		
12	26	11,0	36	83	12	3			93,90	120				
12	36	11,0	46	93	12	3					100,90	120		
14	26	13,0	36	83	14	3	117,90	140						
16	36	15,0	42	92	16	3	159,90	160						
18	36	17,0	42	92	18	3	190,70	180						
20	41	19,0	52	104	20	3	224,90	200						

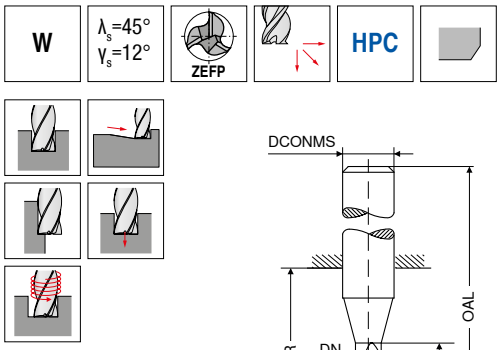
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

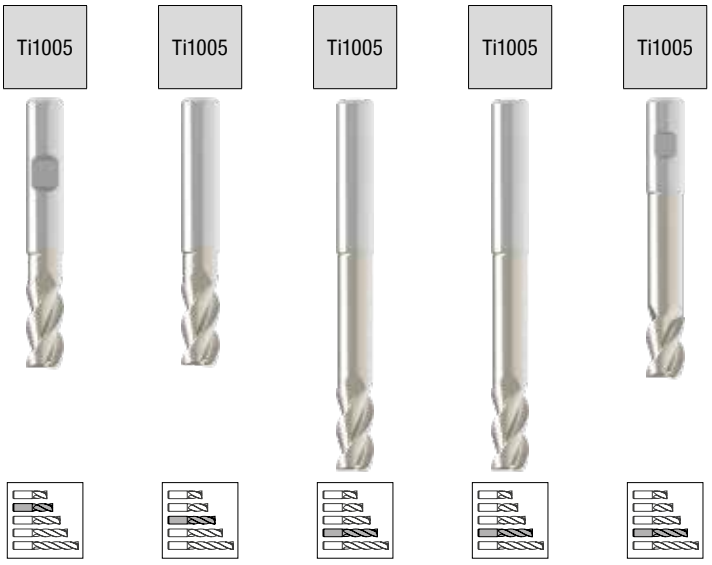
14

AluLine – End milling cutter

▲ with graduated flute depth



LPR with Shank DIN 6535 HB



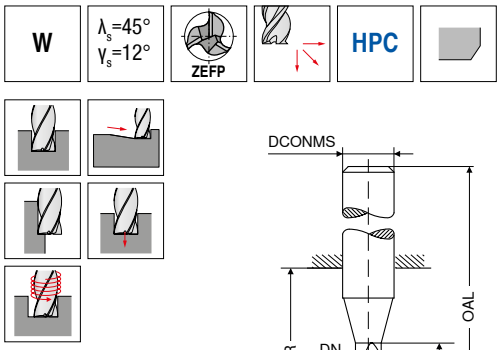
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard				
									HB		HA		HA		HA		HB				
									V1		V1		V1		V1		V1				
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 532 ...		Article no. 53 533 ...		Article no. 53 534 ...		Article no. 53 536 ...		Article no. 53 535 ...				
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR				
3	8	2,7	12	21	57	6	0,1	3							36,48	030					
4	11	3,7	18	21	57	6	0,1	3							36,48	040					
5	13	4,7	18	21	57	6	0,1	3			33,83	050									
6	13	5,7	18	21	57	6	0,2	3			38,36	060									
8	21	7,4	25	27	63	8	0,2	3			43,98	080									
10	16	9,2	58	60	100	10	0,2	3					99,41	100							
10	22	9,2	30	32	72	10	0,2	3			75,83	100									
10	22	9,2	58	60	100	10	0,2	3							99,41	100					
12	26	11,0	36	38	83	12	0,2	3			102,70	120									
16	36	15,0	42	44	92	16	0,2	3	199,50	160											
18	36	17,0	42	44	92	18	0,2	3	249,10	180											
20	32	19,0	98	100	150	20	0,2	3									400,10	200			
20	41	19,0	52	54	104	20	0,2	3	286,50	200											

Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys					
hardened materials					

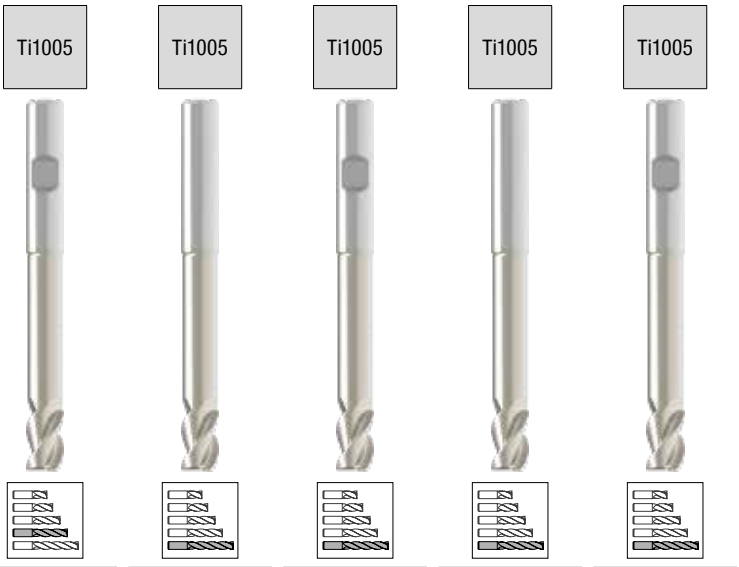
→ v_c/f_z Page 288+289

AluLine – End milling cutter

▲ with graduated flute depth



LPR with Shank DIN 6535 HB



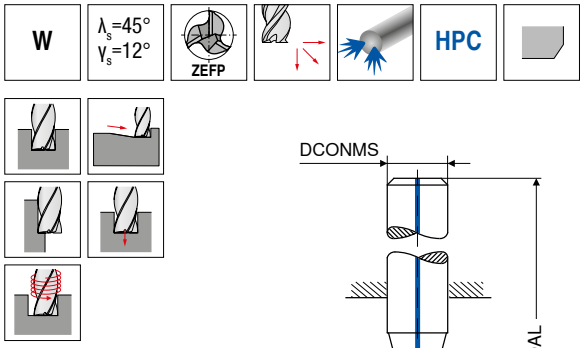
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HB		HA		HB		HA		HB	
									V1		V1		V1		V1		V1	
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 537 ...		Article no. 53 538 ...		Article no. 53 539 ...		Article no. 53 540 ...		Article no. 53 541 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
3	5,0	2,7	18	44	80	6	0,1	3							49,26	030		
4	6,5	3,7	24	44	80	6	0,1	3							49,26	040		
5	8,0	4,7	30	44	80	6	0,1	3							49,26	050		
6	10,0	5,7	42	44	80	6	0,2	3			51,69	060						
6	13,0	5,7	42	44	80	6	0,2	3							51,69	060		
8	13,0	7,4	62	64	100	8	0,2	3			67,12	080						
8	21,0	7,4	62	64	100	8	0,2	3							67,12	080		
12	19,0	11,0	73	75	120	12	0,2	3			140,00	120						
12	26,0	11,0	73	75	120	12	0,2	3							140,00	120		
16	25,0	15,0	100	102	150	16	0,2	3					311,90	160				
16	36,0	15,0	100	102	150	16	0,2	3									311,90	160
18	36,0	17,0	100	102	150	18	0,2	3	370,30	180								
20	41,0	19,0	98	100	150	20	0,2	3	400,10	200								

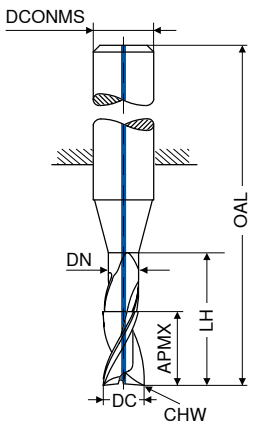
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	
Heat resistant alloys						
hardened materials						

→ v_c/f_z Page 288+289

14

AluLine – End milling cutter













Factory standard

Factory standard

HA



HA



V1

V1

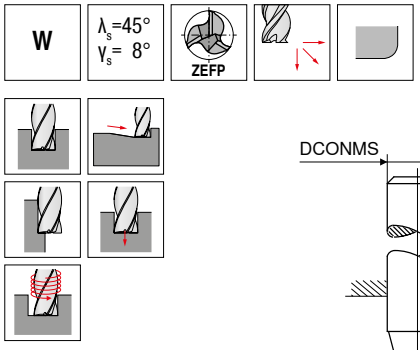
DC h10	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 542 ...		Article no. 53 543 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	10	5,7	42	80	6	0,2	3			64,70	060
8	13	7,4	62	100	8	0,2	3			83,88	080
10	16	9,2	58	100	10	0,2	3	124,60	100		
12	19	11,0	73	120	12	0,2	3			175,20	120

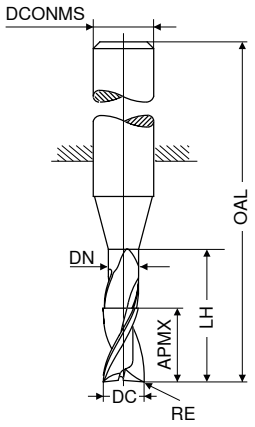
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

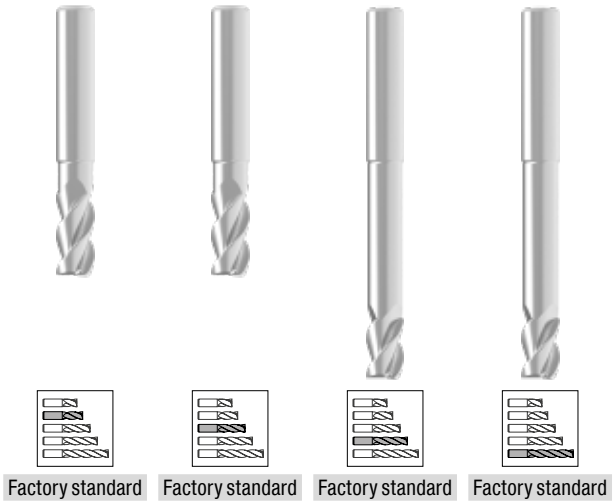
→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ With polished chip flutes







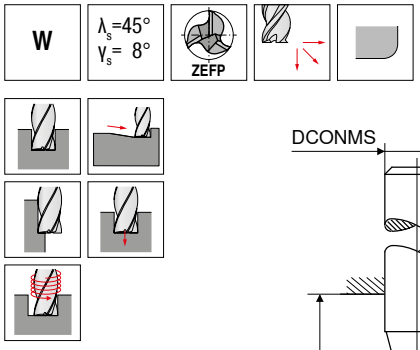
DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Factory standard HA V1 Article no. 53 525 ...		Factory standard HA V1 Article no. 53 527 ...		Factory standard HA V1 Article no. 53 528 ...		Factory standard HA V1 Article no. 53 530 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
5	0,5	13	4,7	19	57	6	3			24,14	05005				
5	1,0	13	4,7	19	57	6	3			24,14	05010				
6	0,5	10	5,7	42	80	6	3							33,06	06005
6	0,5	13	5,7	19	57	6	3			24,14	06005				
6	1,0	10	5,7	42	80	6	3							33,06	06010
6	1,0	13	5,7	19	57	6	3			24,14	06010				
8	0,5	13	7,4	62	100	8	3							46,29	08005
8	0,5	21	7,4	25	63	8	3			30,20	08005				
8	1,0	13	7,4	62	100	8	3							46,29	08010
8	1,0	21	7,4	25	63	8	3			30,20	08010				
10	0,5	16	9,2	58	100	10	3					64,47	10005		
10	0,5	22	9,2	30	72	10	3			43,98	10005				
10	1,0	16	9,2	58	100	10	3					64,47	10010		
10	1,0	22	9,2	30	72	10	3			43,98	10010				
12	0,5	19	11,0	73	120	12	3							94,67	12005
12	0,5	26	11,0	36	83	12	3			63,26	12005				
12	1,0	19	11,0	73	120	12	3							94,67	12010
12	1,0	26	11,0	36	83	12	3			63,26	12010				
16	2,0	25	15,0	100	150	16	3							180,80	16020
16	2,0	36	15,0	42	92	16	3	107,50	16020						
16	4,0	25	15,0	100	150	16	3							180,80	16040
16	4,0	36	15,0	42	92	16	3	107,50	16040						
20	4,0	32	19,0	98	150	20	3					296,50	20040		
20	4,0	41	19,0	52	104	20	3	167,50	20040						

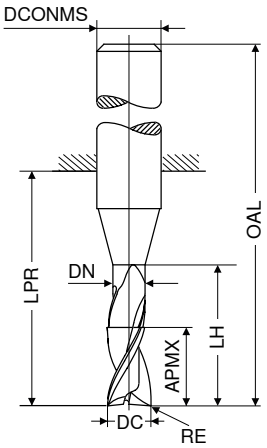
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

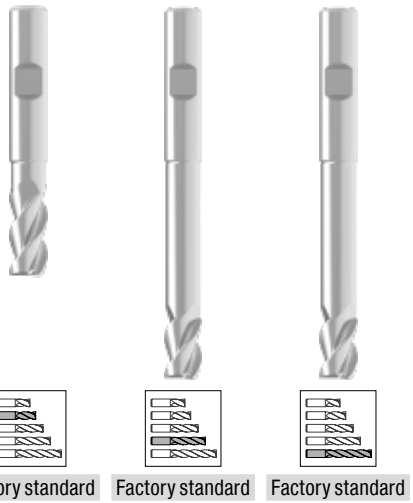
→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ With polished chip flutes







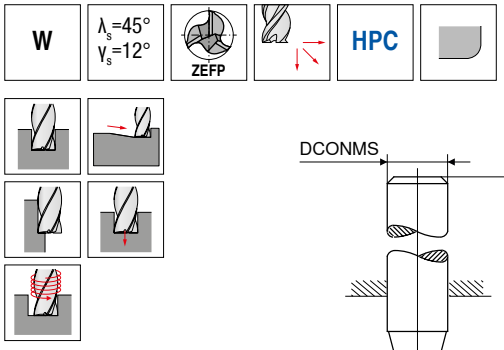
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HB V1 Article no. 53 526 ... EUR		Factory standard HB V1 Article no. 53 529 ... EUR		Factory standard HB V1 Article no. 53 531 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm							
16	2	25	15	100	102	150	16	3					180,80	**16020**
16	2	36	15	42	44	92	16	3	107,50	**16020**				
16	4	25	15	100	102	150	16	3					180,80	**16040**
16	4	36	15	42	44	92	16	3	107,50	**16040**				
20	4	32	19	98	100	150	20	3			296,50	**20040**		
20	4	41	19	52	54	104	20	3	167,50	**20040**				

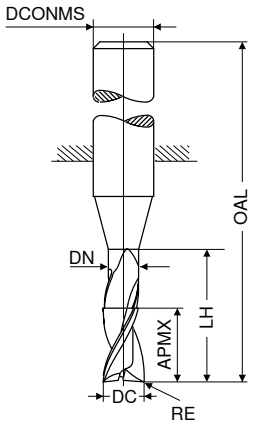
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

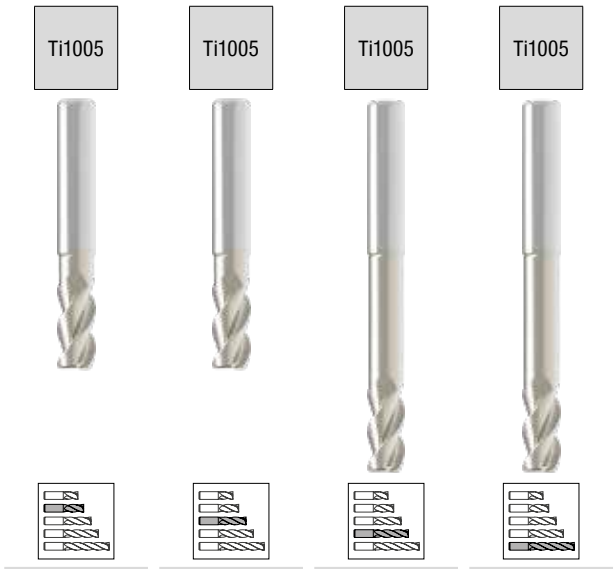
→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ With graduated flute depth







DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Factory standard HA V1 Article no. 53 544 ... EUR	Factory standard HA V1 Article no. 53 545 ... EUR	Factory standard HA V1 Article no. 53 547 ... EUR	Factory standard HA V1 Article no. 53 549 ... EUR
mm	mm	mm	mm	mm	mm	mm					
3	0,4	8	2,7	12	57	6	3			36,04 03004	
3	0,5	8	2,7	12	57	6	3			36,04 03005	
3	1,0	8	2,7	12	57	6	3			36,04 03010	
4	0,2	11	3,7	18	57	6	3			36,04 04002	
4	0,4	11	3,7	18	57	6	3			36,04 04004	
4	0,5	11	3,7	18	57	6	3			36,04 04005	
4	1,0	11	3,7	18	57	6	3			36,04 04010	
5	0,5	13	4,7	18	57	6	3		36,04 05005		
5	1,0	13	4,7	18	57	6	3		36,04 05010		
6	0,4	13	5,7	18	57	6	3		40,88 06004		
6	0,4	13	5,7	42	80	6	3				56,43 06004
6	0,5	13	5,7	18	57	6	3		40,88 06005		
6	0,5	13	5,7	42	80	6	3				56,43 06005
6	0,6	13	5,7	18	57	6	3		40,88 06006		
6	0,6	13	5,7	42	80	6	3				56,43 06006
6	0,8	13	5,7	18	57	6	3		40,88 06008		
6	0,8	13	5,7	42	80	6	3				56,43 06008
6	1,0	13	5,7	18	57	6	3		40,88 06010		
6	1,0	13	5,7	42	80	6	3				56,43 06010
6	1,5	13	5,7	18	57	6	3		40,88 06015		
6	1,5	13	5,7	42	80	6	3				56,43 06015
8	0,5	21	7,4	25	63	8	3		46,84 08005		
8	0,5	21	7,4	62	100	8	3				73,40 08005
8	0,8	21	7,4	25	63	8	3		46,84 08008		
8	0,8	21	7,4	62	100	8	3				73,40 08008
8	1,0	21	7,4	25	63	8	3		46,84 08010		
8	1,0	21	7,4	62	100	8	3				73,40 08010
8	1,2	21	7,4	25	63	8	3		46,84 08012		
8	1,2	21	7,4	62	100	8	3				73,40 08012
8	1,5	21	7,4	25	63	8	3		46,84 08015		
8	1,5	21	7,4	62	100	8	3				73,40 08015
8	2,0	21	7,4	25	63	8	3		46,84 08020		
8	2,0	21	7,4	62	100	8	3				73,40 08020
10	0,5	22	9,2	30	72	10	3		80,89 10005		
10	0,5	22	9,2	58	100	10	3			108,70 10005	
10	1,0	22	9,2	30	72	10	3		80,89 10010		
10	1,0	22	9,2	58	100	10	3			108,70 10010	
10	1,2	22	9,2	30	72	10	3		80,89 10012		
10	1,2	22	9,2	58	100	10	3			108,70 10012	
10	1,5	22	9,2	30	72	10	3		80,89 10015		

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

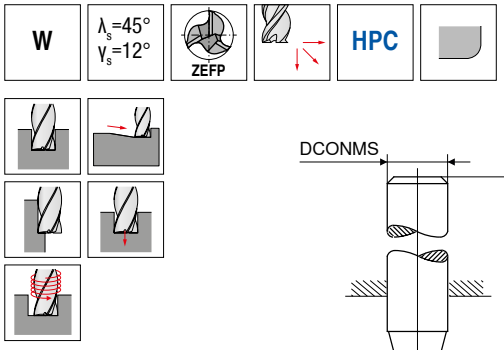
→ v_c/f_z Page 288+289

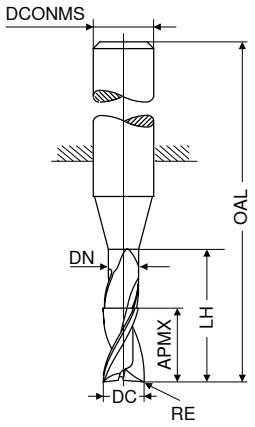
14

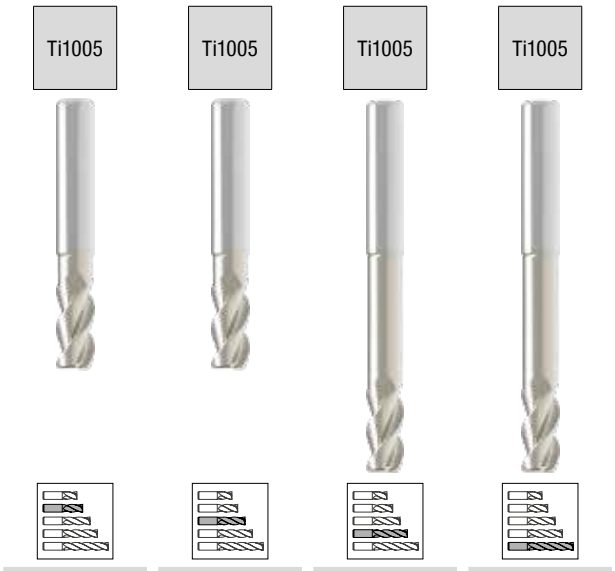
Continued on next page

AluLine – End milling cutter with corner radius

▲ With graduated flute depth







Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

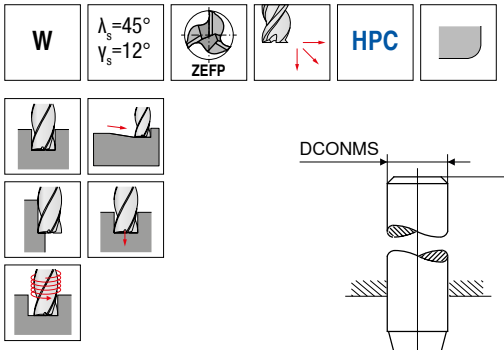
DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 53 544 ...		V1 Article no. 53 545 ...		V1 Article no. 53 547 ...		V1 Article no. 53 549 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
10	1,5	22	9,2	58	100	10	3					108,70	10015		
10	1,6	22	9,2	30	72	10	3			80,89	10016				
10	1,6	22	9,2	58	100	10	3					108,70	10016		
10	2,0	22	9,2	30	72	10	3			80,89	10020				
10	2,0	22	9,2	58	100	10	3					108,70	10020		
12	0,5	26	11,0	73	120	12	3							155,50	12005
12	1,0	26	11,0	73	120	12	3							155,50	12010
12	1,2	26	11,0	73	120	12	3							155,50	12012
12	1,5	26	11,0	73	120	12	3							155,50	12015
12	1,6	26	11,0	73	120	12	3							155,50	12016
12	2,0	26	11,0	73	120	12	3							155,50	12020
12	2,5	26	11,0	73	120	12	3							155,50	12025
12	4,0	26	11,0	73	120	12	3							155,50	12040
16	1,0	36	15,0	42	92	16	3	212,80	16010						
16	1,0	36	15,0	100	150	16	3							328,50	16010
16	1,6	36	15,0	42	92	16	3	212,80	16016						
16	1,6	36	15,0	100	150	16	3							328,50	16016
16	2,0	36	15,0	42	92	16	3	212,80	16020						
16	2,0	36	15,0	100	150	16	3							328,50	16020
16	2,5	36	15,0	42	92	16	3	212,80	16025						
16	2,5	36	15,0	100	150	16	3							328,50	16025
16	3,2	36	15,0	42	92	16	3	212,80	16032						
16	3,2	36	15,0	100	150	16	3							328,50	16032
16	4,0	36	15,0	42	92	16	3	212,80	16040						
16	4,0	36	15,0	100	150	16	3							328,50	16040
20	1,0	41	19,0	52	104	20	3	305,30	20010						
20	1,0	41	19,0	98	150	20	3					423,30	20010		
20	2,0	41	19,0	52	104	20	3	305,30	20020						
20	2,0	41	19,0	98	150	20	3					423,30	20020		
20	4,0	41	19,0	52	104	20	3	305,30	20040						
20	4,0	41	19,0	98	150	20	3					423,30	20040		
20	5,0	41	19,0	52	104	20	3	305,30	20050						
20	5,0	41	19,0	98	150	20	3					423,30	20050		
20	6,3	41	19,0	52	104	20	3	305,30	20063						
20	6,3	41	19,0	98	150	20	3					423,30	20063		

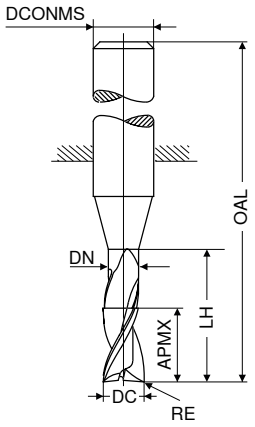
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ with graduated flute depth







Factory standard | Factory standard

HA | HA

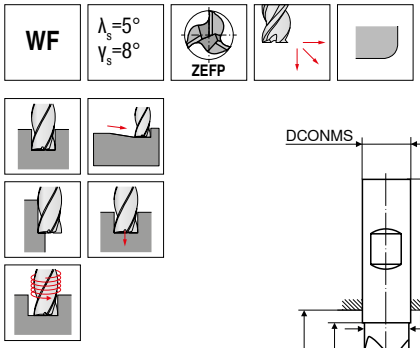
DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 53 546 ...		V1 Article no. 53 548 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	0,4	10	5,7	42	80	6	3			56,43	06004
6	0,5	10	5,7	42	80	6	3			56,43	06005
6	0,6	10	5,7	42	80	6	3			56,43	06006
6	0,8	10	5,7	42	80	6	3			56,43	06008
6	1,0	10	5,7	42	80	6	3			56,43	06010
6	1,5	10	5,7	42	80	6	3			56,43	06015
8	0,5	13	7,4	62	100	8	3			73,40	08005
8	0,8	13	7,4	62	100	8	3			73,40	08008
8	1,0	13	7,4	62	100	8	3			73,40	08010
8	1,2	13	7,4	62	100	8	3			73,40	08012
8	1,5	13	7,4	62	100	8	3			73,40	08015
8	2,0	13	7,4	62	100	8	3			73,40	08020
10	0,5	16	9,2	58	100	10	3	108,70	10005		
10	1,0	16	9,2	58	100	10	3	108,70	10010		
10	1,2	16	9,2	58	100	10	3	108,70	10012		
10	1,5	16	9,2	58	100	10	3	108,70	10015		
10	1,6	16	9,2	58	100	10	3	108,70	10016		
10	2,0	16	9,2	58	100	10	3	108,70	10020		
12	0,5	19	11,0	73	120	12	3			155,50	12005
12	1,0	19	11,0	73	120	12	3			155,50	12010
12	1,2	19	11,0	73	120	12	3			155,50	12012
12	1,5	19	11,0	73	120	12	3			155,50	12015
12	1,6	19	11,0	73	120	12	3			155,50	12016
12	2,0	19	11,0	73	120	12	3			155,50	12020
12	2,5	19	11,0	73	120	12	3			155,50	12025
12	4,0	19	11,0	73	120	12	3			155,50	12040
16	0,5	25	15,0	100	150	16	3			328,50	16005
16	1,6	25	15,0	100	150	16	3			328,50	16016
16	2,0	25	15,0	100	150	16	3			328,50	16020
16	2,5	25	15,0	100	150	16	3			328,50	16025
16	3,2	25	15,0	100	150	16	3			328,50	16032
16	4,0	25	15,0	100	150	16	3			328,50	16040
20	1,0	32	19,0	98	150	20	3	423,30	20010		
20	2,0	32	19,0	98	150	20	3	423,30	20020		
20	4,0	32	19,0	98	150	20	3	423,30	20040		
20	5,0	32	19,0	98	150	20	3	423,30	20050		
20	6,3	32	19,0	98	150	20	3	423,30	20063		

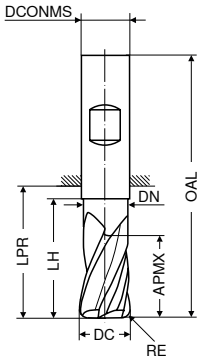
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

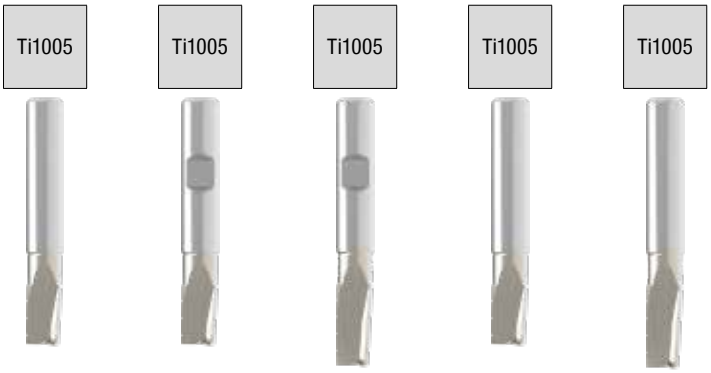
14

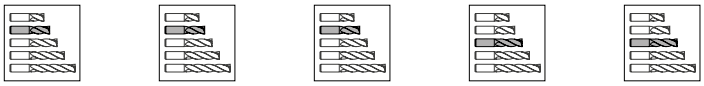
AluLine – Roughing-Finishing cutter





LPR with Shank DIN 6535 HB



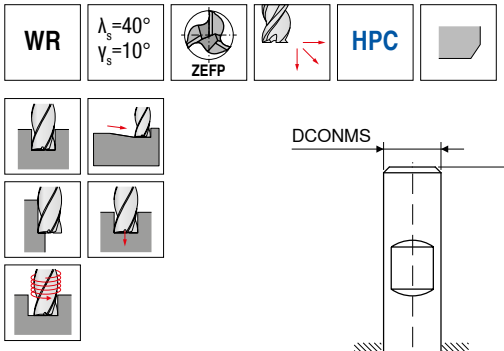


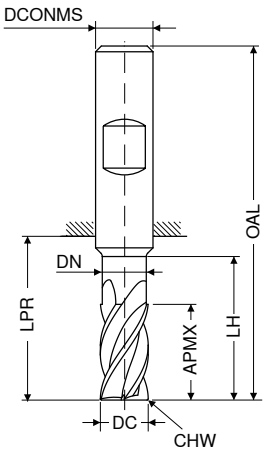
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HA		HB		HB		HA		HA	
									V1		V1		V1		V1		V1	
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 53 512 ...		Article no. 53 513 ...		Article no. 53 514 ...		Article no. 53 515 ...		Article no. 53 516 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
5	0,15	8	4,7	16	18	54	6	3							34,93	05002		
5	0,15	13	4,7	18	21	57	6	3									34,93	05002
6	0,20	10	5,7	17	18	54	6	3	34,93	06002								
6	0,20	13	5,7	18	21	57	6	3									34,93	06002
8	0,25	13	7,4	20	22	58	8	3	40,46	08003								
8	0,25	21	7,4	25	27	63	8	3									42,98	08003
10	0,30	16	9,2	24	26	66	10	3	56,32	10003								
10	0,30	22	9,2	30	32	72	10	3									59,96	10003
12	0,35	19	11,0	26	28	73	12	3	78,58	12004								
12	0,35	26	11,0	36	38	83	12	3									81,78	12004
16	0,50	25	15,0	32	38	82	16	3			133,30	16005						
16	0,50	36	15,0	42	44	92	16	3					140,00	16005				
20	0,60	32	19,0	40	42	92	20	3			224,90	20006						
20	0,60	41	19,0	52	54	104	20	3					241,40	20006				

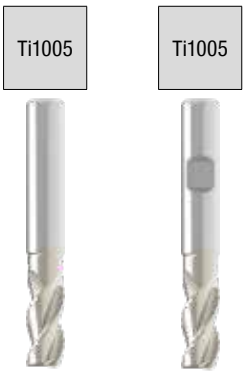
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys					
hardened materials					

→ v_c/f_z Page 288+289

AluLine – Rough milling cutter









Factory standard | Factory standard

HA | HB

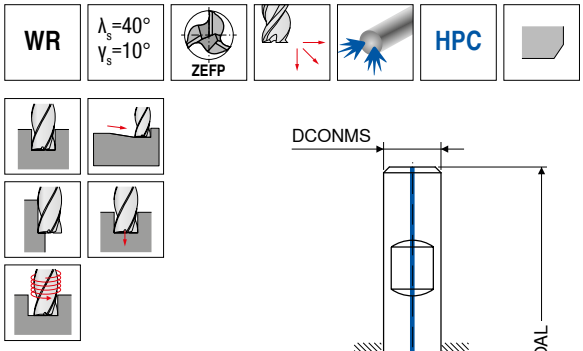
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 551 ...		V1 Article no. 53 550 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	13	5,7	18	21	57	6	0,4	3	29,20	060		
8	21	7,4	25	27	63	8	0,4	3	37,59	080		
10	22	9,2	30	32	72	10	0,4	3	49,48	100		
12	26	11,0	36	38	83	12	0,4	3	61,06	120		
16	36	15,0	42	44	92	16	0,4	3			95,00	160
20	41	19,0	52	54	104	20	0,4	3			144,40	200

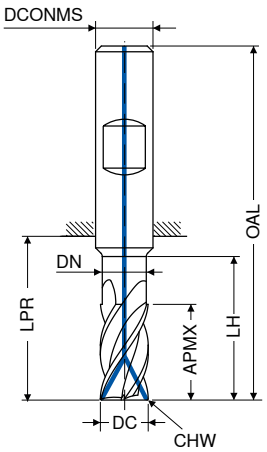
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

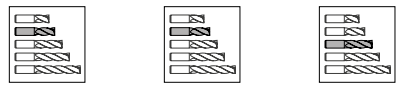
14

AluLine – Rough milling cutter









Factory standard | Factory standard | Factory standard

HA | HB | HA

V1 | V1 | V1

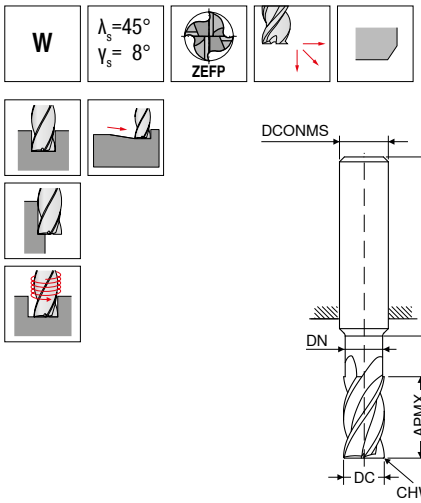
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 552 ...		Article no. 53 553 ...		Article no. 53 554 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
6	13	5,7	18	21	57	6	0,4	3					40,46	060
8	21	7,4	25	27	63	8	0,4	3					53,68	080
10	22	9,2	30	32	72	10	0,4	3					63,04	100
12	26	11,0	36	38	83	12	0,4	3					82,44	120
16	36	15,0	42	44	92	16	0,4	3	122,30	160	122,30	160		
20	41	19,0	52	54	104	20	0,4	3	212,80	200	212,80	200		

Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

→ v_c/f_z Page 288+289

AluLine – End milling cutter

▲ with polished chip flutes





DC h10	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	Factory standard HA V1 Article no. 53 560 ... EUR		Factory standard HA V1 Article no. 53 561 ... EUR		Factory standard HA V1 Article no. 53 562 ... EUR		Factory standard HA V1 Article no. 53 563 ... EUR		Factory standard HA V1 Article no. 53 564 ... EUR	
mm	mm	mm	mm	mm	mm	mm											
3,0	8	2,7	13	57	6	0,1	4							29,43	030		
3,5	11	3,2	17	57	6	0,1	4							32,84	035		
4,0	11	3,7	17	57	6	0,1	4							32,84	040		
4,5	13	4,2	19	57	6	0,1	4							34,72	045		
5,0	13	4,7	19	57	6	0,1	4					32,18	050				
5,5	13	5,2	19	57	6	0,1	4					31,74	055				
6,0	10	5,7	42	80	6	0,2	4									33,96	060
6,0	13	5,7	19	57	6	0,2	4					33,96	060				
6,0	18	5,7	24	62	6	0,2	4							33,96	060		
6,5	21	6,1	25	63	8	0,2	4					45,51	065				
8,0	13	7,4	62	100	8	0,2	4									48,38	080
8,0	21	7,4	25	63	8	0,2	4			48,38	080						
8,0	24	7,4	30	68	8	0,2	4					48,38	080				
8,5	22	7,9	30	72	10	0,2	4					60,84	085				
10,0	16	9,2	58	100	10	0,2	4							63,71	100		
10,0	22	9,2	30	72	10	0,2	4			63,71	100						
10,0	30	9,2	38	80	10	0,2	4					63,71	100				
12,0	19	11,0	73	120	12	0,2	4									97,98	120
12,0	26	11,0	36	83	12	0,2	4			97,98	120						
12,0	36	11,0	46	93	12	0,2	4					97,98	120				
14,0	26	13,0	36	83	14	0,2	4	113,60	140								
16,0	25	15,0	100	150	16	0,2	4									179,60	160
16,0	36	15,0	42	92	16	0,2	4	179,60	160								
16,0	48	15,0	58	108	16	0,2	4					179,60	160				
18,0	36	17,0	42	92	18	0,2	4	192,80	180								
20,0	32	19,0	98	150	20	0,2	4							329,60	200		
20,0	41	19,0	52	104	20	0,2	4	329,60	200								
20,0	60	19,0	74	126	20	0,2	4					329,60	200				
25,0	52	24,0	62	121	25	0,3	4	430,90	250								

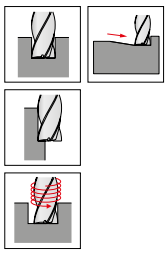
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	
Heat resistant alloys						
hardened materials						

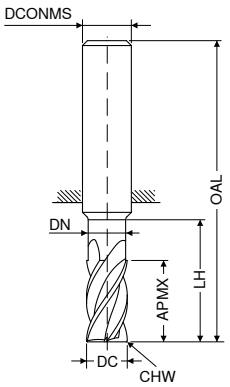
14

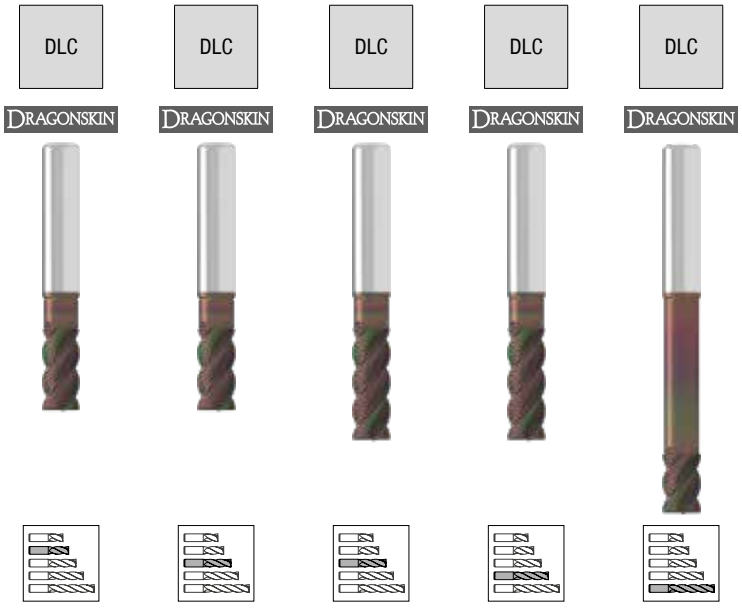
→ v_c/f_z Page 288+289

AluLine – End milling cutter







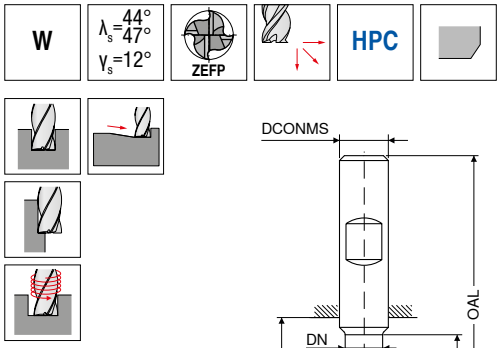


DC h10	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 565 ... EUR		V1 Article no. 53 566 ... EUR		V1 Article no. 53 567 ... EUR		V1 Article no. 53 568 ... EUR		V1 Article no. 53 569 ... EUR	
mm	mm	mm	mm	mm	mm	mm											
3,0	8	2,7	13	57	6	0,1	4							39,24	030		
3,5	11	3,2	17	57	6	0,1	4							42,54	035		
4,0	11	3,7	17	57	6	0,1	4							42,54	040		
4,5	13	4,2	19	57	6	0,1	4							44,53	045		
5,0	13	4,7	19	57	6	0,1	4					41,98	050				
5,5	13	5,2	19	57	6	0,1	4					41,43	055				
6,0	10	5,7	42	80	6	0,2	4									43,64	060
6,0	13	5,7	19	57	6	0,2	4					43,64	060				
6,0	18	5,7	24	62	6	0,2	4							43,64	060		
6,5	21	6,1	25	63	8	0,2	4					55,21	065				
8,0	13	7,4	62	100	8	0,2	4									58,08	080
8,0	21	7,4	25	63	8	0,2	4			58,08	080						
8,0	24	7,2	30	68	8	0,2	4					58,08	080				
8,5	22	7,9	30	72	10	0,2	4					70,54	085				
10,0	16	9,2	58	100	10	0,2	4							73,40	100		
10,0	22	9,2	30	72	10	0,2	4			73,40	100						
10,0	30	9,2	38	80	10	0,2	4					73,40	100				
12,0	19	11,0	73	120	12	0,2	4									107,60	120
12,0	26	11,0	36	83	12	0,2	4			107,60	120						
12,0	36	11,0	46	93	12	0,2	4					107,60	120				
14,0	26	13,0	36	83	14	0,2	4	123,50	140								
16,0	25	15,0	100	150	16	0,2	4									189,60	160
16,0	36	15,0	42	92	16	0,2	4	189,60	160								
16,0	48	15,0	58	108	16	0,2	4					189,60	160				
18,0	36	17,0	42	92	18	0,2	4	202,80	180								
20,0	32	19,0	98	150	20	0,2	4							338,30	200		
20,0	41	19,0	52	104	20	0,2	4	338,30	200								
20,0	60	19,0	74	126	20	0,2	4					338,30	200				
25,0	52	24,0	62	121	25	0,3	4	441,90	250								

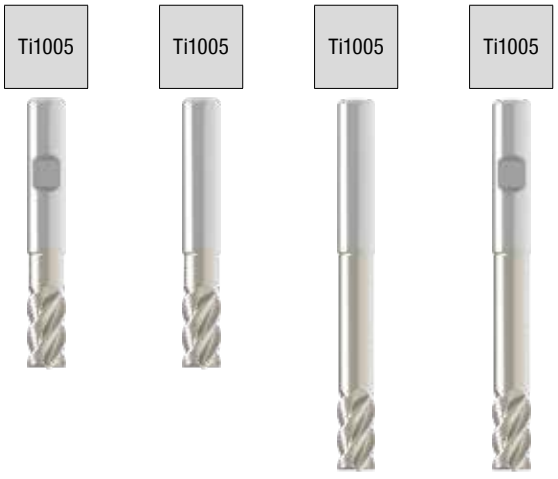
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	
Heat resistant alloys						
hardened materials						

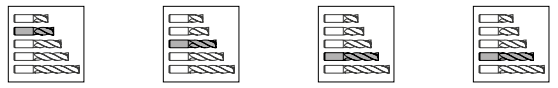
→ v_c/f_z Page 288+289

AluLine – End milling cutter



LPR with Shank DIN 6535 HB





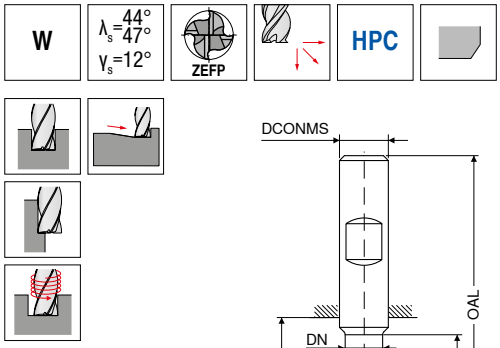
									Factory standard		Factory standard		Factory standard		Factory standard	
									HB		HA		HA		HB	
									V1		V1		V1		V1	
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 570 ...		Article no. 53 571 ...		Article no. 53 572 ...		Article no. 53 573 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	6	2,7	10	21	57	6	0,1	4			36,15	**030**				
4	8	3,7	14	21	57	6	0,1	4			36,15	**040**				
4	16	3,7	22	26	62	6	0,1	4					48,61	**040**		
5	10	4,7	16	21	57	6	0,1	4			33,40	**050**				
5	17	4,7	24	26	62	6	0,1	4					48,61	**050**		
6	12	5,5	19	21	57	6	0,2	4			38,03	**060**				
8	16	7,4	25	27	63	8	0,2	4			43,53	**080**				
10	20	9,2	30	32	72	10	0,2	4			74,72	**100**				
10	20	9,2	58	60	100	10	0,2	4					102,30	**100**		
12	24	11,0	36	38	83	12	0,2	4			101,50	**120**				
16	32	15,0	42	44	92	16	0,2	4	198,30	**160**						
20	40	19,0	52	54	104	20	0,2	4	286,50	**200**						
20	40	19,0	98	100	150	20	0,2	4							413,30	**200**

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

14

AluLine – End milling cutter





Factory standard | Factory standard

HA | HB

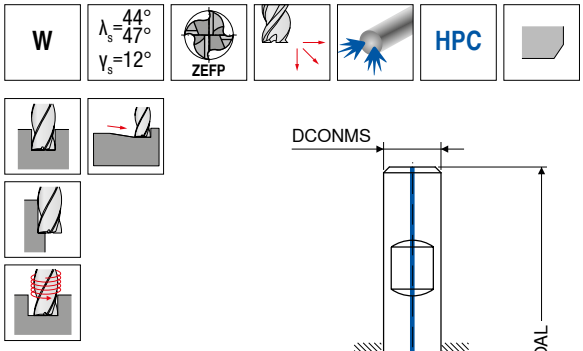
V1 | V1

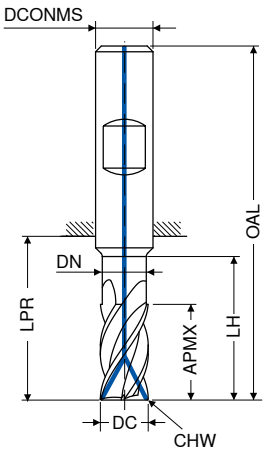
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 574 ...		Article no. 53 575 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	12	5,5	42	44	80	6	0,2	4	53,24	**060**		
8	16	7,4	62	64	100	8	0,2	4	68,99	**080**		
12	24	11,0	73	75	120	12	0,2	4	144,40	**120**		
16	32	15,0	100	102	150	16	0,2	4			320,70	**160**

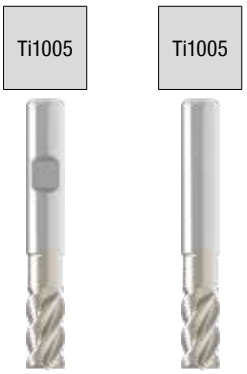
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

AluLine – End milling cutter









Factory standard | Factory standard

HB | HA

V1 | V1

DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 576 ...		Article no. 53 577 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3	6	2,7	10	21	57	6	0,1	4			46,96	030
4	8	3,7	14	21	57	6	0,1	4			46,96	040
5	10	4,7	16	21	57	6	0,1	4			43,53	050
6	12	5,7	19	21	57	6	0,2	4			49,38	060
8	16	7,4	25	27	63	8	0,2	4			56,53	080
10	20	9,2	30	32	72	10	0,2	4			97,09	100
12	24	11,0	36	38	83	12	0,2	4			138,80	120
16	32	15,0	42	44	92	16	0,2	4	257,90	160		
20	40	19,0	52	54	104	20	0,2	4	370,30	200		

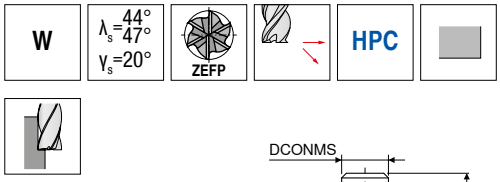
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

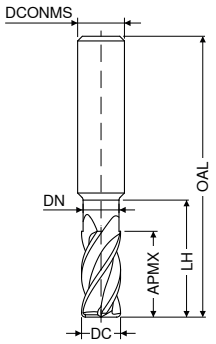
→ v_c/f_z Page 288+289

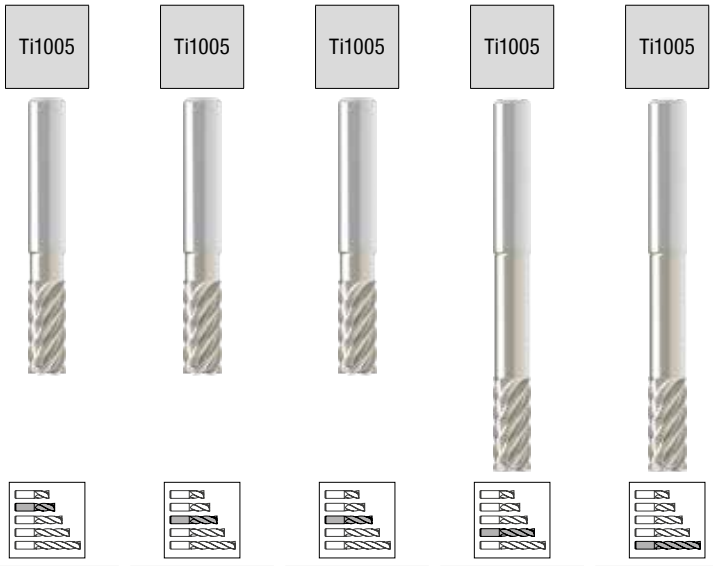
14

AluLine – High accuracy finish milling cutter

▲ max. taper of 0.003 mm for high precision and parallelism of vertical walls
▲ Tool with cutting edge correction







Factory standard | Factory standard | Factory standard | Factory standard | Factory standard



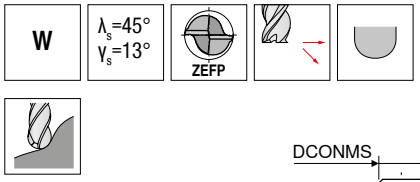
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 53 555 ...		V1 Article no. 53 556 ...		V1 Article no. 53 557 ...		V1 Article no. 53 558 ...		V1 Article no. 53 559 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	
6	16	5,7	20	58	6	6					40,11	060				
6	16	5,7	42	80	6	6									54,56	060
8	19	7,4	26	64	8	6					46,29	080				
8	19	7,4	62	100	8	6									67,56	080
10	25	9,2	32	74	10	6					79,02	100				
10	25	9,2	58	100	10	6							100,90	100		
12	30	11,0	37	84	12	6			107,20	120						
12	30	11,0	73	120	12	6									149,90	120
12	45			120	12	6					181,80	120				
16	40	15,0	44	93	16	6	199,50	160								
16	40	15,0	100	150	16	6									274,50	160
16	65			150	16	6							393,50	160		
20	50	19,0	53	104	20	6	287,70	200								
20	50	19,0	98	150	20	6							379,10	200		
20	75			150	20	6					521,40	200				

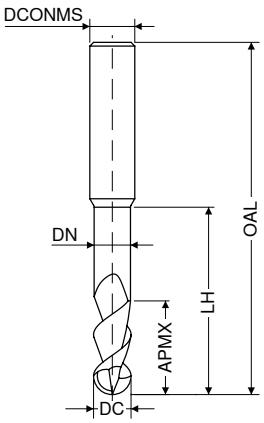
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys					
hardened materials					

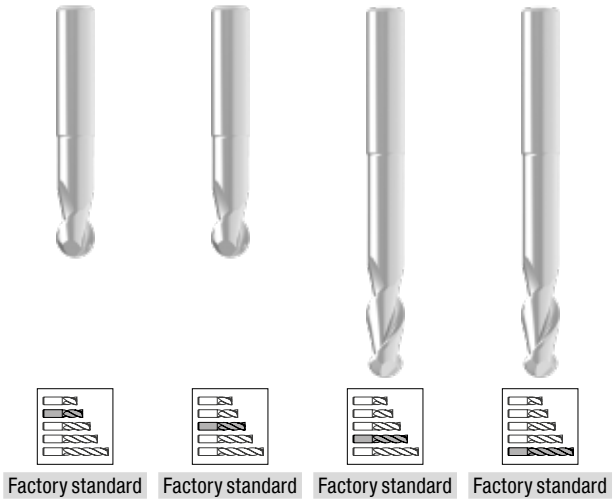
→ v_c/f_z Page 290+291

AluLine – Ball nosed cutter

▲ With polished chip flutes







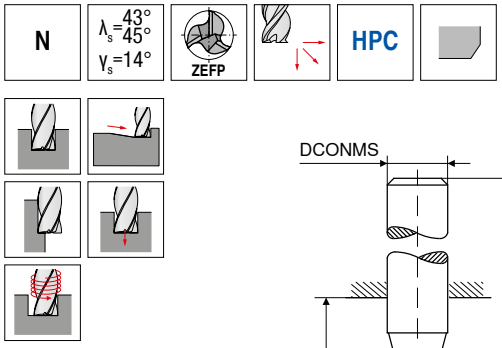
DC f8	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Factory standard HA V1 Article no. 53 508 ...		Factory standard HA V1 Article no. 53 509 ...		Factory standard HA V1 Article no. 53 510 ...		Factory standard HA V1 Article no. 53 511 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	6	2,7	16	50	3	2					28,22	030		
3	10	2,7	32	75	3	2							41,01	030
4	7	3,7	17	54	4	2					33,51	040		
4	13	3,7	36	75	4	2							47,29	040
5	8	4,6	18	54	5	2			37,48	050				
5	15	4,6	40	75	5	2							54,34	050
6	10	5,5	21	54	6	2			36,48	060				
6	16	5,5	44	100	6	2							49,71	060
8	12	7,5	27	59	8	2			46,51	080				
8	22	7,5	54	100	8	2							68,78	080
10	13	9,4	32	67	10	2			61,16	100				
10	25	9,4	60	100	10	2							91,70	100
12	16	11,4	38	73	12	2			81,89	120				
12	26	11,4	60	100	12	2					119,10	120		
14	16	13,2	38	75	14	2	134,50	140						
14	26	13,2	60	100	14	2					166,50	140		
16	20	15,0	44	83	16	2	164,20	160						
16	30	15,0	92	150	16	2					223,80	160		
20	25	19,0	50	93	20	2	227,00	200						
20	40	19,0	92	150	20	2					308,60	200		

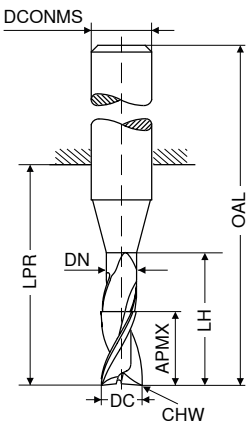
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

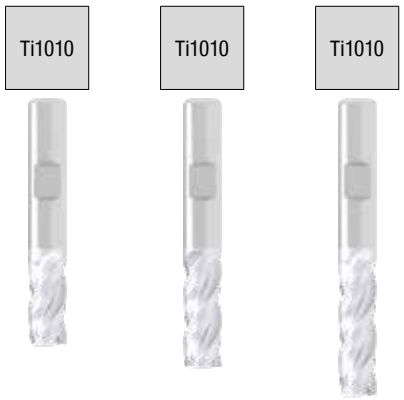
→ v_c/f_z Page 290+291

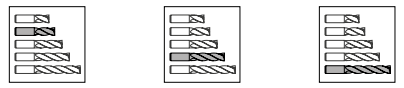
14

SilverLine – End milling cutter







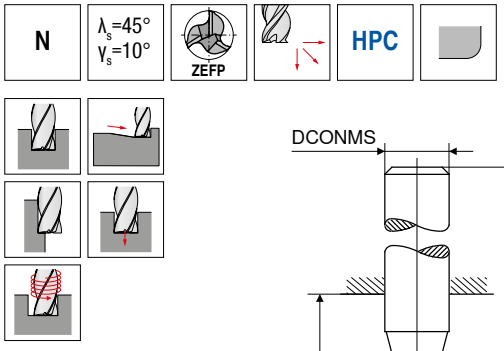


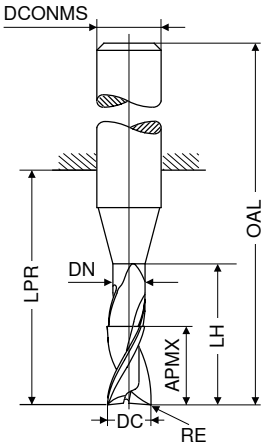
	≈DIN 6527	≈DIN 6527	Factory standard
	HB	HB	HB
	V0	V0	V0
DC e8 / mm	Article no. 50 951 ... / EUR	Article no. 50 951 ... / EUR	Article no. 50 951 ... / EUR
APMX / mm			
DN / mm			
LH / mm			
LPR / mm			
OAL / mm			
DCONMS h5 / mm			
CHW / mm			
ZEFP / 3			
3,0		55,00 031	
3,5		55,00 036	
4,0	52,90 040		
4,0		52,90 041	
4,0			55,99 042
4,5		55,00 046	
5,0	52,90 050		
5,0		52,90 051	
5,0			55,99 052
5,5		57,76 056	
6,0	55,00 060		
6,0		55,66 061	
6,0			62,05 062
6,5		66,34 066	
7,0		66,34 071	
7,5		66,34 076	
8,0	62,61 080		
8,0		65,14 081	
8,0			69,54 082
8,5		111,30 086	
9,0		111,30 091	
9,5		111,30 096	
10,0	99,30 100		
10,0		110,10 101	
10,0			124,60 102
12,0	138,80 120		
12,0		149,90 121	
12,0			167,50 122
14,0	173,10 140		
14,0		197,30 141	
14,0			218,30 142
16,0	205,00 160		
16,0		330,60 161	
16,0			336,10 162
18,0	288,80 180		
18,0		345,10 181	
18,0			434,30 182
20,0	351,60 200		
20,0		401,10 201	
20,0			502,60 202

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	○	○	○
Non ferrous metals	○	○	○
Heat resistant alloys	●	●	●
hardened materials			

→ v_c/f_z Page 292+293

SilverLine – End milling cutter with corner radius













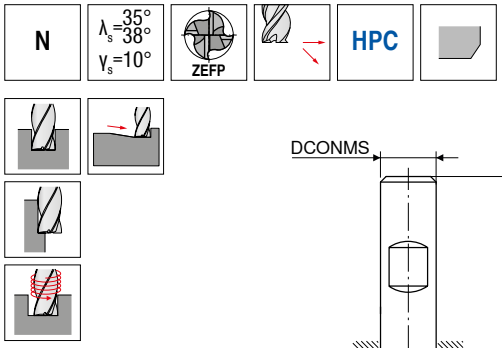
									≈DIN 6527		≈DIN 6527	
									HB		HB	
									V0		V0	
DC f8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 952 ...		Article no. 50 952 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
4	0,5	8	3,9	15	18	54	6	3	52,90	040		
4	0,5	11	3,9	16	21	57	6	3			54,56	041
5	0,5	9	4,9	16	18	54	6	3	52,90	050		
5	0,5	13	4,9	19	21	57	6	3			54,56	051
6	0,5	10	5,9	17	18	54	6	3	54,44	060		
6	0,5	13	5,9	19	21	57	6	3			63,71	061
8	1,0	12	7,8	20	22	58	8	3	63,92	080		
8	1,0	19	7,8	25	27	63	8	3			73,07	081
10	1,0	14	9,7	24	26	66	10	3	115,80	100		
10	1,0	22	9,7	30	32	72	10	3			125,70	101
12	1,5	16	11,7	26	28	73	12	3	158,70	120		
12	1,5	26	11,7	36	38	83	12	3			169,70	121
16	2,0	22	15,5	32	34	82	16	3	325,10	160		
16	2,0	32	15,5	42	44	92	16	3			331,80	161
20	2,0	26	19,5	40	42	92	20	3	468,40	200		
20	2,0	38	19,5	52	54	104	20	3			478,40	201

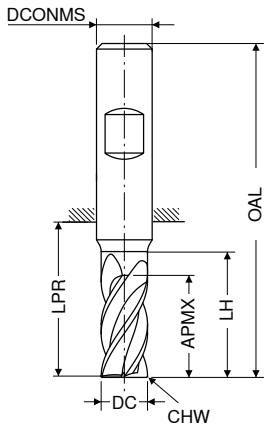
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 292+293

14

SilverLine – End milling cutter











≈DIN 6527

HB



≈DIN 6527

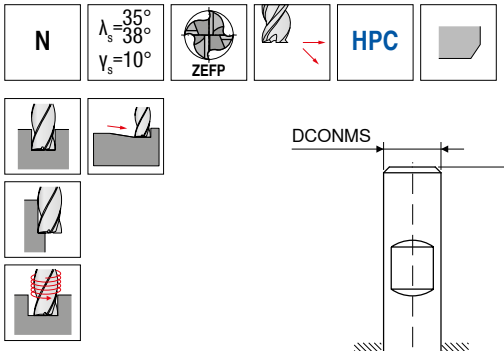
HB

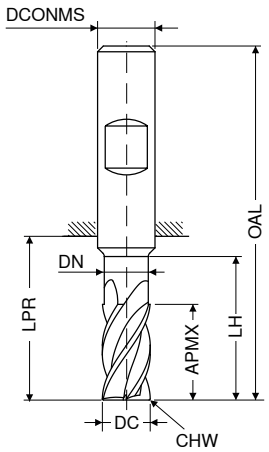
DC f8	APMX	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V0 Article no. 50 955 ...		V0 Article no. 50 955 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3,0	5	8	14	50	6	0,15	4	37,25	030		
3,0	8	11	21	57	6	0,15	4			37,25	031
3,5	8	11	18	54	6	0,15	4	37,25	035		
3,5	11	14	21	57	6	0,15	4			37,25	036
4,0	8	11	18	54	6	0,15	4	37,25	040		
4,0	11	14	21	57	6	0,15	4			37,25	041
4,5	9	12	18	54	6	0,15	4	38,24	045		
4,5	13	16	21	57	6	0,15	4			38,24	046
5,0	9	12	18	54	6	0,15	4	38,24	050		
5,0	13	16	21	57	6	0,15	4			38,24	051
5,5	10	13	18	54	6	0,15	4	36,81	055		
5,5	13	16	21	57	6	0,15	4			36,81	056
6,0	10	13	18	54	6	0,15	4	36,81	060		
6,0	13	16	21	57	6	0,15	4			36,81	061
7,0	12	15	22	58	8	0,25	4	49,26	070		
7,0	21	24	27	63	8	0,25	4			49,26	071
8,0	12	15	22	58	8	0,25	4	49,26	080		
8,0	21	24	27	63	8	0,25	4			49,26	081
9,0	14	17	26	66	10	0,25	4	64,26	090		
9,0	22	25	32	72	10	0,25	4			64,26	091
10,0	14	17	26	66	10	0,25	4	64,26	100		
10,0	22	25	32	72	10	0,25	4			64,26	101
11,0	16	19	28	73	12	0,35	4	101,60	110		
11,0	26	29	38	83	12	0,35	4			101,60	111
12,0	16	19	28	73	12	0,35	4	101,60	120		
12,0	26	29	38	83	12	0,35	4			101,60	121
14,0	16	19	28	73	14	0,35	4	130,00	140		
14,0	26	29	38	83	14	0,35	4			130,00	141
15,0	22	25	34	82	16	0,35	4	161,00	150		
15,0	36	39	44	92	16	0,35	4			161,00	151
16,0	22	25	34	82	16	0,35	4	161,00	160		
16,0	36	39	44	92	16	0,35	4			161,00	161
17,0	22	25	34	82	18	0,35	4	220,50	170		
17,0	36	39	44	92	18	0,35	4			220,50	171
18,0	22	25	34	82	18	0,35	4	220,50	180		
18,0	36	39	44	92	18	0,35	4			220,50	181
19,0	26	29	42	92	20	0,35	4	248,00	190		
19,0	41	44	54	104	20	0,35	4			248,00	191
20,0	26	29	42	92	20	0,35	4	248,00	200		
20,0	41	44	54	104	20	0,35	4			248,00	201

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 294+295

SilverLine – End milling cutter













DIN 6527 | DIN 6527

HB | HB

V0 | V0

DC f8 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 965 ... EUR		Article no. 50 965 ... EUR	
3	6,5	2,8	9	19	55	6	0,15	4	35,05	030		
3	6,5	2,8	15	22	58	6	0,15	4			36,70	031
4	8,5	3,8	12	19	55	6	0,15	4	35,05	040		
4	8,5	3,8	20	26	62	6	0,15	4			36,70	041
5	10,5	4,8	15	22	58	6	0,15	4	35,05	050		
5	10,5	4,8	25	34	70	6	0,15	4			36,70	051
6	13,0	5,8	18	22	58	6	0,15	4	35,05	060		
6	13,0	5,8	30	34	70	6	0,15	4			36,70	061
8	17,0	7,7	24	28	64	8	0,25	4	47,72	080		
8	17,0	7,7	40	44	80	8	0,25	4			52,46	081
10	21,0	9,7	30	34	74	10	0,25	4	69,76	100		
10	21,0	9,7	50	54	94	10	0,25	4			77,26	101
12	25,0	11,6	36	40	85	12	0,35	4	88,17	120		
12	25,0	11,6	60	64	109	12	0,35	4			96,54	121
14	29,0	13,6	42	46	91	14	0,35	4	123,50	140		
14	29,0	13,6	70	74	119	14	0,35	4			134,50	141
16	33,0	15,5	48	52	100	16	0,35	4	197,30	160		
16	33,0	15,5	80	84	132	16	0,35	4			218,30	161
18	38,0	17,5	54	58	106	18	0,35	4	250,20	180		
18	38,0	17,5	90	94	142	18	0,35	4			274,50	181
20	42,0	19,5	60	64	114	20	0,35	4	271,10	200		
20	42,0	19,5	100	104	154	20	0,35	4			298,80	201

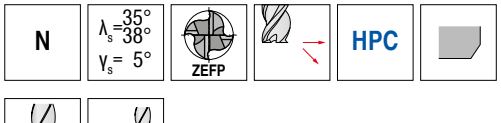
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

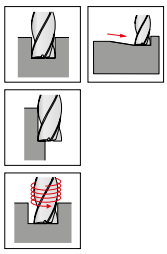
→ v_c/f_z Page 294+295

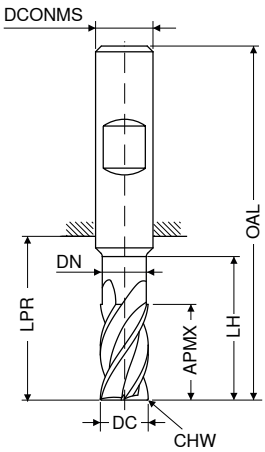
14

SilverLine – End milling cutter

▲ with reinforced core Ø for increased stability













Factory standard

HB

V0

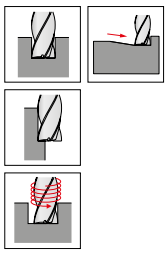
DC f8	APMX	DN	LH	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 50 964 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR	
4	8	3,5	12	18	54	6	0,15	4	52,14	041
5	10	4,5	15	18	54	6	0,15	4	52,14	051
6	13	5,5	21	21	57	6	0,15	4	54,66	061
8	19	7,5	27	27	63	8	0,25	4	62,71	081
10	22	9,5	32	32	72	10	0,25	4	107,20	101
12	26	11,5	38	38	83	12	0,35	4	149,90	121
14	26	13,5	38	38	83	14	0,35	4	206,10	141
16	32	15,5	44	44	92	16	0,35	4	271,10	161
18	36	17,5	44	44	92	18	0,35	4	302,00	181
20	38	19,5	54	54	104	20	0,35	4	391,40	201

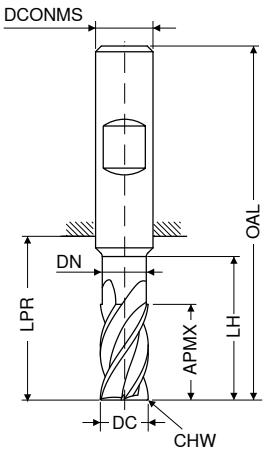
Steel	●
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 294+295

SilverLine – End milling cutter















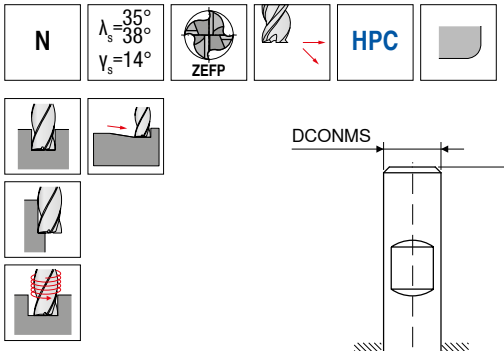
DC f8	APMX	DN	LH	LPR	OAL	DCONMS h5	CHW	ZEFP	≈DIN 6527 HB V0 Article no. 50 954 ... EUR		≈DIN 6527 HB V0 Article no. 50 954 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm					
3	5		8	14	50	6	0,15	4	51,58	030		
3	8	2,8	13	21	57	6	0,15	4			51,58	031
4	8		11	18	54	6	0,15	4	51,58	040		
4	11	3,8	17	21	57	6	0,15	4			51,58	041
5	9		12	18	54	6	0,15	4	51,58	050		
5	13	4,8	19	21	57	6	0,15	4			51,58	051
6	10		13	18	54	6	0,15	4	54,23	060		
6	13	5,8	19	21	57	6	0,15	4			54,23	061
8	12		15	22	58	8	0,25	4	55,44	080		
8	21	7,7	25	27	63	8	0,25	4			62,05	081
10	14		17	26	66	10	0,25	4	95,67	100		
10	22	9,7	30	32	72	10	0,25	4			106,70	101
12	16		19	28	73	12	0,35	4	130,00	120		
12	26	11,6	36	38	83	12	0,35	4			144,40	121
14	16		19	28	73	14	0,35	4	187,30	140		
14	26	13,6	36	38	83	14	0,35	4			205,00	141
16	22		25	34	82	16	0,35	4	203,80	160		
16	36	15,5	42	44	92	16	0,35	4			270,10	161
18	22		25	34	82	18	0,35	4	273,30	180		
18	36	17,5	42	44	92	18	0,35	4			298,80	181
20	26		29	42	92	20	0,35	4	349,30	200		
20	41	19,5	52	54	104	20	0,35	4			388,00	201

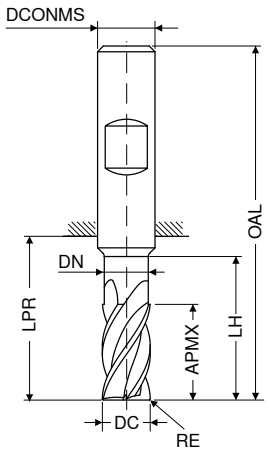
Steel	●	●
Stainless steel		
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 296+297

14

SilverLine – End milling cutter with corner radius









Factory standard | Factory standard

HB | HB

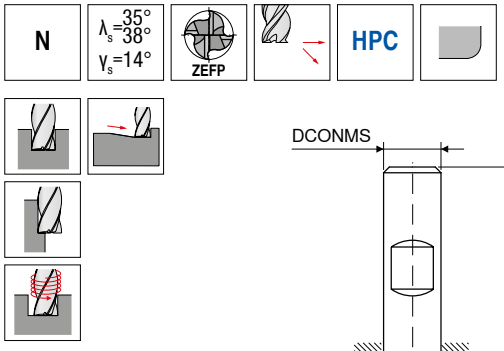
DC f8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	V0 Article no. 50 968 ...		V0 Article no. 50 968 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3	0,10	8,0	2,8	13	21	57	6	4	49,16	030		
3	0,40	8,0	2,8	13	21	57	6	4	49,16	031		
3	0,50	8,0	2,8	13	21	57	6	4	49,16	032		
3	1,00	8,0	2,8	13	21	57	6	4	49,16	033		
3	0,30	6,5	2,8	15	22	58	6	4	57,64	034		
3	0,50	6,5	2,8	15	22	58	6	4	57,64	035		
3	0,80	6,5	2,8	15	22	58	6	4	57,64	036		
4	0,10	11,0	3,8	17	21	57	6	4	49,16	040		
4	0,40	11,0	3,8	17	21	57	6	4	49,16	041		
4	0,50	11,0	3,8	17	21	57	6	4	49,16	042		
4	1,00	11,0	3,8	17	21	57	6	4	49,16	043		
4	0,40	8,5	3,8	20	26	62	6	4			57,64	044
4	0,50	8,5	3,8	20	26	62	6	4			57,64	045
4	0,80	8,5	3,8	20	26	62	6	4			57,64	046
5	0,10	13,0	4,8	19	21	57	6	4	50,03	050		
5	0,50	13,0	4,8	19	21	57	6	4	50,03	051		
5	1,00	13,0	4,8	19	21	57	6	4	50,03	052		
5	0,50	10,5	4,8	25	34	70	6	4			58,74	053
5	0,80	10,5	4,8	25	34	70	6	4			58,74	054
6	0,10	13,0	5,8	19	21	57	6	4	48,71	060		
6	0,50	13,0	5,8	19	21	57	6	4	48,71	061		
6	1,00	13,0	5,8	19	21	57	6	4	48,71	062		
6	1,50	13,0	5,8	19	21	57	6	4	48,71	063		
6	0,60	13,0	5,8	30	34	70	6	4			58,74	064
6	0,80	13,0	5,8	30	34	70	6	4			58,74	065
6	1,00	13,0	5,8	30	34	70	6	4			58,74	066
8	0,15	21,0	7,7	25	27	63	8	4	61,16	080		
8	0,50	21,0	7,7	25	27	63	8	4	61,16	081		
8	1,00	21,0	7,7	25	27	63	8	4	61,16	082		
8	1,50	21,0	7,7	25	27	63	8	4	61,16	083		
8	2,00	21,0	7,7	25	27	63	8	4	61,16	084		
8	0,80	17,0	7,7	40	44	80	8	4			71,09	085
8	1,00	17,0	7,7	40	44	80	8	4			71,09	086
8	1,50	17,0	7,7	40	44	80	8	4			71,09	087
8	2,00	17,0	7,7	40	44	80	8	4			71,09	088
10	0,15	22,0	9,7	30	32	72	10	4	76,26	100		
10	0,50	22,0	9,7	30	32	72	10	4	76,26	101		
10	1,00	22,0	9,7	30	32	72	10	4	76,26	102		
10	1,50	22,0	9,7	30	32	72	10	4	76,26	103		
10	2,00	22,0	9,7	30	32	72	10	4	76,26	104		
10	0,50	21,0	9,7	50	54	94	10	4			87,72	105
10	1,00	21,0	9,7	50	54	94	10	4			87,72	106
10	1,50	21,0	9,7	50	54	94	10	4			87,72	107
10	2,00	21,0	9,7	50	54	94	10	4			87,72	108
12	0,20	26,0	11,6	36	38	83	12	4	119,10	120		
12	0,50	26,0	11,6	36	38	83	12	4	119,10	121		

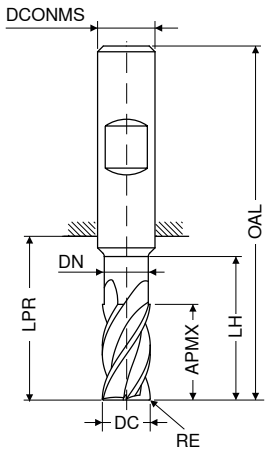
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 294+295

Continued on next page

SilverLine – End milling cutter with corner radius









Factory standard | Factory standard

HB | HB

V0 | V0

DC f8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 968 ...		Article no. 50 968 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
12	1,00	26,0	11,6	36	38	83	12	4	119,10	122		
12	1,50	26,0	11,6	36	38	83	12	4	119,10	123		
12	2,00	26,0	11,6	36	38	83	12	4	119,10	124		
12	3,00	26,0	11,6	36	38	83	12	4	119,10	131		
12	4,00	26,0	11,6	36	38	83	12	4	119,10	125		
12	0,50	25,0	11,6	60	64	109	12	4			132,30	126
12	1,00	25,0	11,6	60	64	109	12	4			132,30	127
12	1,50	25,0	11,6	60	64	109	12	4			132,30	128
12	2,00	25,0	11,6	60	64	109	12	4			132,30	129
12	3,00	25,0	11,6	60	64	109	12	4			132,30	132
12	4,00	25,0	11,6	60	64	109	12	4			132,30	130
14	0,30	26,0	13,6	36	38	83	14	4	177,50	140		
14	1,00	26,0	13,6	36	38	83	14	4	177,50	141		
14	2,00	26,0	13,6	36	38	83	14	4	177,50	142		
14	3,00	26,0	13,6	36	38	83	14	4	177,50	147		
14	4,00	26,0	13,6	36	38	83	14	4	177,50	143		
14	1,00	29,0	13,6	70	74	119	14	4			199,50	144
14	2,00	29,0	13,6	70	74	119	14	4			199,50	145
14	3,00	29,0	13,6	70	74	119	14	4			199,50	148
14	4,00	29,0	13,6	70	74	119	14	4			199,50	146
16	0,30	36,0	15,5	42	44	92	16	4	177,50	160		
16	1,00	36,0	15,5	42	44	92	16	4	177,50	161		
16	2,00	36,0	15,5	42	44	92	16	4	177,50	162		
16	3,00	36,0	15,5	42	44	92	16	4	177,50	167		
16	4,00	36,0	15,5	42	44	92	16	4	177,50	163		
16	1,00	33,0	15,5	80	84	132	16	4			219,30	164
16	2,00	33,0	15,5	80	84	132	16	4			219,30	165
16	3,00	33,0	15,5	80	84	132	16	4			219,30	168
16	4,00	33,0	15,5	80	84	132	16	4			219,30	166
18	1,00	36,0	17,5	42	44	92	18	4	237,00	180		
18	2,00	36,0	17,5	42	44	92	18	4	237,00	181		
18	3,00	36,0	17,5	42	44	92	18	4	237,00	186		
18	4,00	36,0	17,5	42	44	92	18	4	237,00	182		
18	1,00	38,0	17,5	90	94	142	18	4			265,60	183
18	2,00	38,0	17,5	90	94	142	18	4			265,60	184
18	3,00	38,0	17,5	90	94	142	18	4			265,60	187
18	4,00	38,0	17,5	90	94	142	18	4			265,60	185
20	0,30	41,0	19,5	52	54	104	20	4	267,80	200		
20	1,00	41,0	19,5	52	54	104	20	4	267,80	201		
20	2,00	41,0	19,5	52	54	104	20	4	267,80	202		
20	3,00	41,0	19,5	52	54	104	20	4	267,80	207		
20	4,00	41,0	19,5	52	54	104	20	4	267,80	203		
20	1,00	42,0	19,5	100	104	154	20	4			296,50	204
20	2,00	42,0	19,5	100	104	154	20	4			296,50	205
20	3,00	42,0	19,5	100	104	154	20	4			296,50	208
20	4,00	42,0	19,5	100	104	154	20	4			296,50	206

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 294+295

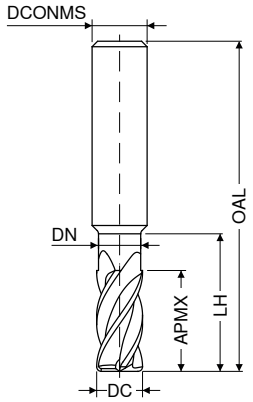
14

SilverLine – High accuracy finish milling cutter

▲ max. taper of 0.003 mm for high precision and parallelism of vertical walls
▲ Tool with cutting edge correction















≈DIN 6527 | Factory standard

HA | HA

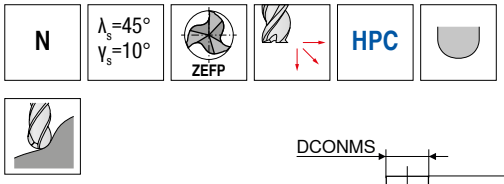
DC f8	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 50 959 ...		V0 Article no. 50 959 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
6	13	5,6	19	57	6	6	56,76	060		
6	10	5,8	18	58	6	6	56,76	063		
6	13	5,8	27	67	6	6			76,81	064
6	13	5,8	36	76	6	6			95,67	065
6	15	5,6	42	80	6	6			76,81	061
8	19	7,6	25	63	8	6	65,14	080		
8	13	7,7	24	64	8	6	64,58	083		
8	17	7,7	36	76	8	6			95,34	084
8	17	7,7	48	89	8	6			119,10	085
8	20	7,6	62	100	8	6			95,34	081
10	22	9,6	30	72	10	6	111,30	100		
10	16	9,7	30	74	10	6	111,30	103		
10	21	9,7	45	89	10	6			142,30	104
10	25	9,6	58	100	10	6			143,30	101
10	21	9,7	60	104	10	6			177,50	105
12	26	11,5	36	83	12	6	152,10	120		
12	19	11,6	36	85	12	6	153,20	123		
12	25	11,6	54	103	12	6			223,80	124
12	30	11,5	73	120	12	6			222,60	121
12	25	11,6	72	121	12	6			278,80	125
16	32	15,0	42	92	16	6	283,30	160		
16	25	15,5	48	100	16	6	284,30	163		
16	33	15,5	72	124	16	6			392,40	164
16	33	15,5	96	148	16	6			491,60	165
16	40	15,0	100	150	16	6			391,40	161
20	38	19,0	52	104	20	6	410,10	200		
20	32	19,5	60	114	20	6	412,20	203		
20	42	19,5	90	144	20	6			541,10	204
20	50	19,0	98	150	20	6			540,10	201
20	42	19,5	120	174	20	6			675,70	205
25	40	24,5	75	136	25	6	515,80	253		
25	52	24,5	113	174	25	6			676,70	254
25	52	24,5	150	210	25	6			846,50	255

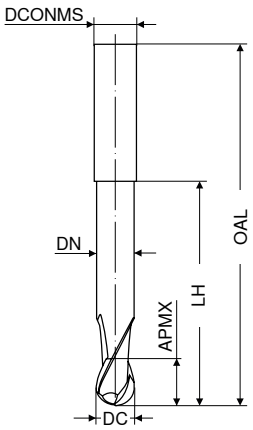
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 298+299

SilverLine – Ball nosed cutter

▲ Radius accuracy: ±0,01 mm













≈DIN 6527 | ≈DIN 6527

HA | HA

V0 | V0

DC f8	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 50 953 ...		Article no. 50 953 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
4	8	3,9	15	54	6	3	69,76	040		
4	11	3,9	16	57	6	3			69,76	041
5	9	4,9	16	54	6	3	69,76	050		
5	13	4,9	19	57	6	3			69,76	051
6	10	5,9	17	54	6	3	68,34	060		
6	13	5,9	19	57	6	3			69,76	061
8	12	7,8	20	58	8	3	76,04	080		
8	19	7,8	25	63	8	3			80,24	081
10	14	9,7	24	66	10	3	129,00	100		
10	22	9,7	30	72	10	3			137,80	101
12	16	11,7	26	73	12	3	175,20	120		
12	26	11,7	36	83	12	3			187,30	121
16	22	15,5	32	82	16	3	349,30	160		
16	36	15,5	42	92	16	3			367,00	161
20	26	19,5	40	92	20	3	507,00	200		
20	38	19,5	52	104	20	3			526,90	201

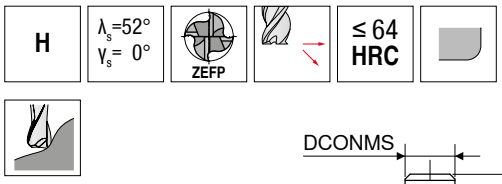
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

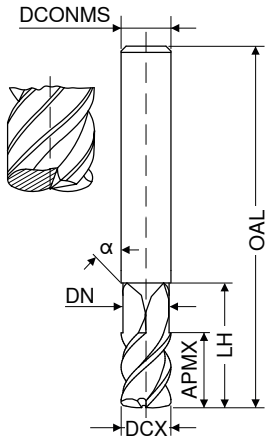
→ v_c/f_z Page 292+293

14

SilverLine – Torus face milling cutter

▲ APMX does not correspond to the maximum cutting depth
▲ r_{3D} = corner radius to be programmed













DIN 6527 | Factory standard

HA | HA

V0 | V0

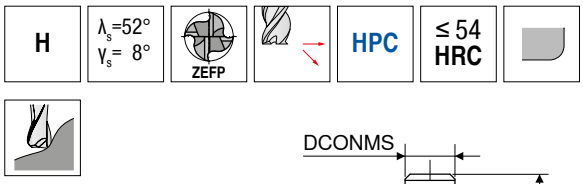
DCX f8 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	Article no. 50 962 ... EUR		Article no. 50 962 ... EUR	
6	1,12	3	5,8	16	54	45	6	4	65,14	060		
6	1,12	3	5,8	44	80	45	6	4			86,07	061
8	1,23	4	7,7	20	58	45	8	4	73,74	080		
8	1,23	4	7,7	54	100	45	8	4			112,40	081
10	1,77	5	9,7	24	66	45	10	4	126,80	100		
10	1,77	5	9,7	60	100	45	10	4			164,20	101
12	1,86	6	11,6	26	73	45	12	4	164,20	120		
12	1,86	6	11,6	75	120	45	12	4			201,80	121
16	2,47	8	15,5	32	82	45	16	4	307,50	160		
16	2,47	8	15,5	92	150	45	16	4			384,60	161
20	2,61	10	19,5	40	92	45	20	4	448,60	200		
20	2,61	10	19,5	92	150	45	20	4			672,40	201

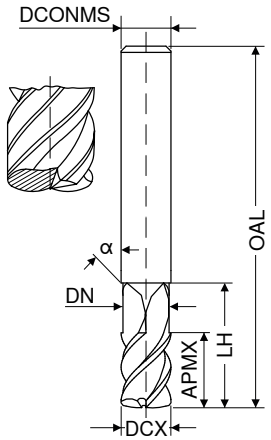
Steel	○	○
Stainless steel		
Cast iron	○	○
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

→ v_c/f_z Page 300+301

SilverLine – Torus face milling cutter

▲ APMX does not correspond to the maximum cutting depth
▲ r_{3D} = corner radius to be programmed













≈DIN 6527 | Factory standard





DCX f8 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	V0 Article no. 50 961 ...	EUR	V0 Article no. 50 961 ...	EUR
6	1,21	3	5,8	16	54	45	6	4	060	65,14		
6	1,21	3	5,8	44	80	45	6	4			061	86,07
8	1,38	4	7,7	20	58	45	8	4	080	73,74		
8	1,38	4	7,7	54	100	45	8	4			081	112,40
10	2,00	5	9,7	24	66	45	10	4	100	126,80		
10	2,00	5	9,7	60	100	45	10	4			101	164,20
12	2,10	6	11,6	26	73	45	12	4	120	164,20		
12	2,10	6	11,6	75	120	45	12	4			121	201,80
16	2,78	8	15,5	32	82	45	16	4	160	307,50		
16	2,75	8	15,5	92	150	45	16	4			161	384,60
20	3,07	10	19,5	40	92	45	20	4	200	448,60		
20	3,07	10	19,5	92	150	45	20	4			201	672,40

Steel	●	●
Stainless steel		
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys		
hardened materials	○	○

→ v_c/f_z Page 302+303

14

S-Cut – End milling cutter

SC
UNI

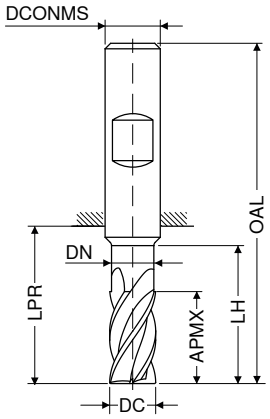
λ_s=28°
γ_s=10°

ZEFP

HPC

APX72S







≈DIN 6527

HB

V1/1#

DC f8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 225 ...	
mm	mm	mm	mm	mm	mm	mm		EUR	
3	8	2,8	15,0	21	57	6	4	40,56	030
4	11	3,8	16,5	21	57	6	4	40,56	040
5	13	4,8	18,5	21	57	6	4	40,56	050
6	13	5,5	21,0	21	57	6	4	40,56	060
7	19	6,5	27,0	27	63	8	4	56,10	070
8	19	7,5	27,0	27	63	8	4	54,44	080
9	22	8,5	32,0	32	72	10	4	79,68	090
10	22	9,5	32,0	32	72	10	4	77,26	100
11	26	10,5	38,0	38	83	12	4	111,30	110
12	26	11,5	38,0	38	83	12	4	107,50	120
13	26	12,5	42,0	38	83	14	4	143,30	130
14	26	13,5	42,0	38	83	14	4	138,80	140
16	36	15,5	48,0	44	92	16	4	174,10	160
18	36	17,5	54,0	52	100	18	4	233,60	180
20	38	19,5	54,0	54	104	20	4	267,80	200
25	42	24,0	65,0	65	121	25	4	425,40	250

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 304+305

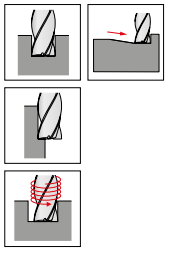
S-Cut – End milling cutter

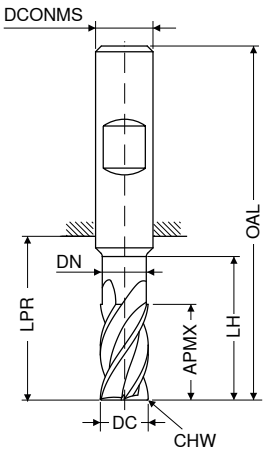
SC
UNI

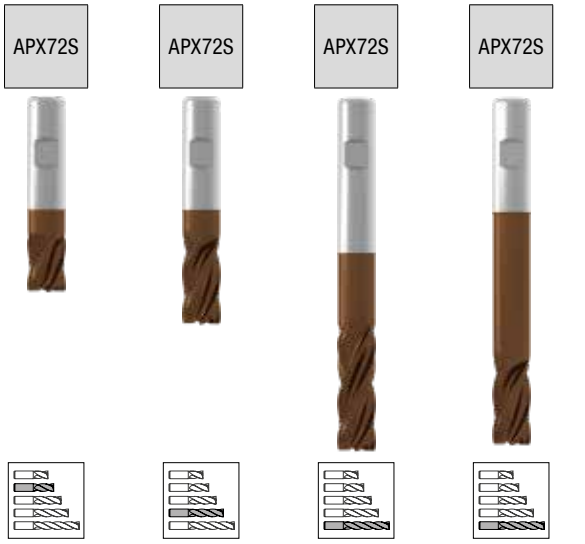
λ_s=28°
36°
γ_s=10°

ZEFP

HPC







≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527

HB | HB | HB | HB

V1/1# | V1/1# | V1/1# | V1/1#

DC f8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 223 ...		Article no. 52 224 ...		Article no. 52 226 ...		Article no. 52 227 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	6	2,8	12,0	18	54	6	0,10	4	33,51	030						
3	8	2,8	15,0	21	57	6	0,10	4			40,56	030				
4	8	3,8	13,5	18	54	6	0,13	4	33,51	040						
4	11	3,8	16,5	21	57	6	0,13	4			40,56	040				
5	9	4,8	15,5	18	54	6	0,18	4	33,51	050						
5	13	4,8	18,5	21	57	6	0,18	4			40,56	050				
5	22	4,8	24,5	27	63	6	0,18	4					49,38	050		
6	10	5,5	18,0	18	54	6	0,20	4	33,51	060						
6	13	5,5	21,0	21	57	6	0,20	4			40,56	060				
6	13	5,5	42,0	44	80	6	0,20	4							62,05	060
6	22	5,5	27,0	27	63	6	0,20	4					49,38	060		
7	12	6,5	22,0	22	58	8	0,20	4	46,96	070						
7	19	6,5	27,0	27	63	8	0,20	4			56,10	070				
8	12	7,5	22,0	22	58	8	0,20	4	45,51	080						
8	19	7,5	27,0	27	63	8	0,20	4			54,44	080				
8	21	7,5	62,0	64	100	8	0,20	4							73,40	080
8	28	7,5	36,0	44	80	8	0,20	4					60,74	080		
9	14	8,5	26,0	26	66	10	0,30	4	64,03	090						
9	22	8,5	32,0	32	72	10	0,20	4			79,68	090				
10	14	9,5	26,0	26	66	10	0,30	4	62,05	100						
10	22	9,5	32,0	32	72	10	0,30	4			77,26	100				
10	22	9,5	58,0	60	100	10	0,30	4							91,15	100
10	33	9,5	54,0	60	100	10	0,30	4					78,47	100		
11	16	10,5	28,0	28	73	12	0,30	4	95,22	110						
11	26	10,5	38,0	38	83	12	0,30	4			111,30	110				
12	16	11,5	28,0	28	73	12	0,30	4	92,36	120						
12	26	11,5	38,0	38	83	12	0,30	4			107,50	120				
12	26	11,5	73,0	75	120	12	0,30	4							113,60	120
12	42	11,5	54,0	55	100	12	0,30	4					101,30	120		
13	18	12,5	30,0	30	75	14	0,30	4	121,30	130						
13	26	12,5	38,0	38	83	14	0,30	4			143,30	130				
14	18	13,5	30,0	30	75	14	0,30	4	117,90	140						
14	26	13,5	38,0	38	83	14	0,30	4			138,80	140				
14	48	13,5	54,0	55	100	14	0,30	4					113,60	140		
16	22	15,5	34,0	34	82	16	0,40	4	147,80	160						
16	36	15,5	44,0	44	92	16	0,40	4			174,10	160				
16	36	15,5	100,0	102	150	16	0,40	4							198,30	160
16	53	15,5	84,0	102	150	16	0,40	4					186,30	160		
18	24	17,5	34,0	36	84	18	0,40	4	198,30	180						
18	36	17,5	52,0	52	100	18	0,40	4			233,60	180				
20	26	19,5	42,0	42	92	20	0,50	4	230,40	200						
20	38	19,5	54,0	54	104	20	0,50	4			267,80	200				
20	38	19,5	100,0	100	150	20	0,50	4							281,10	200
20	68	19,5	84,0	100	150	20	0,50	4					267,80	200		
25	32	24,0	46,0	49	105	25	0,50	4	363,80	250						
25	42	24,0	65,0	65	121	25	0,50	4			425,40	250				
25	68	24,0	84,0	94	150	25	0,50	4					492,70	250		

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 304–307

14

S-Cut – End milling cutter

SC
UNI

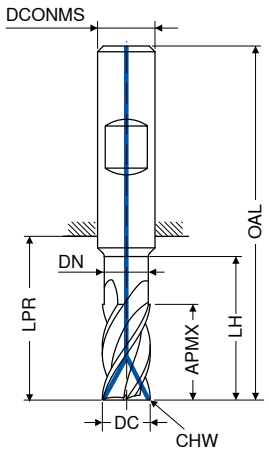
λ_s=28°
γ_s=10°

ZEFP

HPC

APX72S







≈DIN 6527

HB

V1/1#

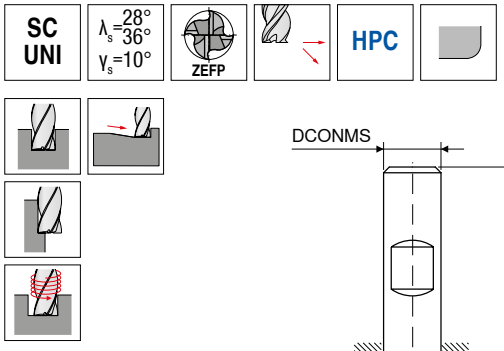
DC f8 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 229 ... EUR	
6	13	5,5	21	21	57	6	0,2	4	86,07	**060**
8	19	7,5	27	27	63	8	0,2	4	116,80	**080**
10	22	9,5	32	32	72	10	0,3	4	165,40	**100**
12	26	11,5	38	38	83	12	0,3	4	222,60	**120**
14	26	13,5	42	42	83	14	0,3	4	291,00	**140**
16	36	15,5	46	46	92	16	0,4	4	404,60	**160**
20	38	19,5	54	54	104	20	0,5	4	579,70	**200**
25	42	24,0	65	65	121	25	0,5	4	756,10	**250**

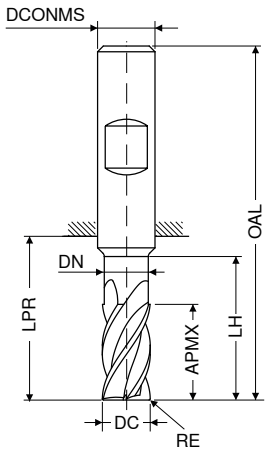
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 304+305

S-Cut – End milling cutter with corner radius

SC
UNI
λ_s=28°
36°
γ_s=10°
ZEFP
HPC





APX72S





≈DIN 6527

HB 

V1/1#

DC f8 mm	RE mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 228 ... EUR	
3	0,25	8	2,8	15,0	21	57	6	4	40,56	03003
3	0,50	8	2,8	15,0	21	57	6	4	40,56	03005
3	1,00	8	2,8	15,0	21	57	6	4	40,56	03010
4	0,25	11	3,8	16,5	21	57	6	4	40,56	04003
4	0,50	11	3,8	16,5	21	57	6	4	40,56	04005
4	1,00	11	3,8	16,5	21	57	6	4	40,56	04010
5	0,50	13	4,8	18,5	21	57	6	4	40,56	05005
5	1,00	13	4,8	18,5	21	57	6	4	40,56	05010
5	1,50	13	4,8	18,5	21	57	6	4	40,56	05015
6	0,50	13	5,5	21,0	21	57	6	4	40,56	06005
6	0,80	13	5,5	21,0	21	57	6	4	40,56	06008
6	1,00	13	5,5	21,0	21	57	6	4	40,56	06010
6	1,50	13	5,5	21,0	21	57	6	4	40,56	06015
6	2,00	13	5,5	21,0	21	57	6	4	40,56	06020
8	0,50	19	7,5	27,0	27	63	8	4	54,44	08005
8	0,80	19	7,5	27,0	27	63	8	4	54,44	08008
8	1,00	19	7,5	27,0	27	63	8	4	54,44	08010
8	1,50	19	7,5	27,0	27	63	8	4	54,44	08015
8	2,00	19	7,5	27,0	27	63	8	4	54,44	08020
10	0,50	22	9,5	32,0	32	72	10	4	77,26	10005
10	1,00	22	9,5	32,0	32	72	10	4	77,26	10010
10	1,50	22	9,5	32,0	32	72	10	4	77,26	10015
10	1,60	22	9,5	32,0	32	72	10	4	77,26	10016
10	2,00	22	9,5	32,0	32	72	10	4	77,26	10020
12	0,50	26	11,5	38,0	38	83	12	4	107,50	12005
12	1,00	26	11,5	38,0	38	83	12	4	107,50	12010
12	1,50	26	11,5	38,0	38	83	12	4	107,50	12015
12	1,60	26	11,5	38,0	38	83	12	4	107,50	12016
12	2,00	26	11,5	38,0	38	83	12	4	107,50	12020
12	3,00	26	11,5	38,0	38	83	12	4	107,50	12030
14	1,00	26	13,5	38,0	38	83	14	4	138,80	14010
14	2,00	26	13,5	38,0	38	83	14	4	138,80	14020
16	1,00	36	15,5	44,0	44	92	16	4	174,10	16010
16	1,50	36	15,5	44,0	44	92	16	4	174,10	16015
16	1,60	36	15,5	44,0	44	92	16	4	174,10	16016
16	2,00	36	15,5	44,0	44	92	16	4	174,10	16020
16	2,50	36	15,5	44,0	44	92	16	4	174,10	16025
16	3,00	36	15,5	44,0	44	92	16	4	174,10	16030
16	3,20	36	15,5	44,0	44	92	16	4	174,10	16032
18	1,50	36	17,5	44,0	44	92	18	4	233,60	18015
18	2,50	36	17,5	44,0	44	92	18	4	233,60	18025
20	1,00	38	19,5	54,0	54	104	20	4	267,80	20010

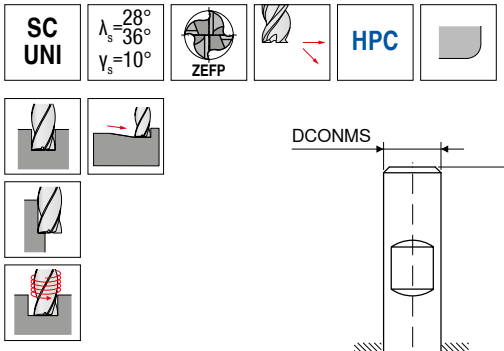
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

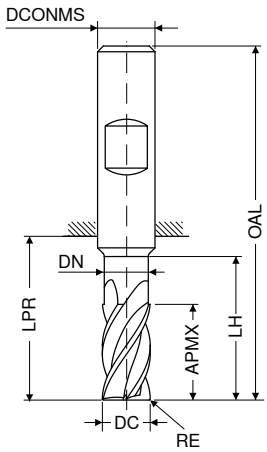
→ v_c/f_z Page 304+305

14

Continued on next page

S-Cut – End milling cutter with corner radius





APX72S





≈DIN 6527

HB

V1/1#

DC f8 mm	RE mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 228 ... EUR	
20	1,50	38	19,5	54,0	54	104	20	4	267,80	**20015**
20	2,00	38	19,5	54,0	54	104	20	4	267,80	**20020**
20	2,50	38	19,5	54,0	54	104	20	4	267,80	**20025**
20	3,00	38	19,5	54,0	54	104	20	4	267,80	**20030**
20	4,00	38	19,5	54,0	54	104	20	4	267,80	**20040**
25	1,00	42	24,0	65,0	65	121	25	4	425,40	**25010**
25	1,50	42	24,0	65,0	65	121	25	4	425,40	**25015**
25	2,00	42	24,0	65,0	65	121	25	4	425,40	**25020**
25	2,50	42	24,0	65,0	65	121	25	4	425,40	**25025**
25	3,00	42	24,0	65,0	65	121	25	4	425,40	**25030**
25	4,00	42	24,0	65,0	65	121	25	4	425,40	**25040**
25	5,00	42	24,0	65,0	65	121	25	4	425,40	**25050**

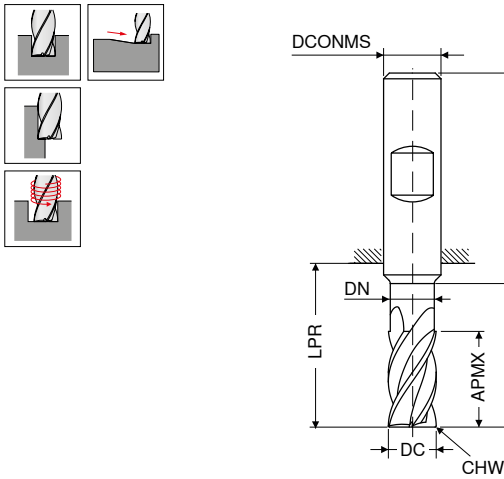
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 304+305

S-Cut – End milling cutter

▲ suitable for trochoidal milling

SC UNI | λ_s=28° 36° γ_s=10° | ZEFP | HPC



APX72S



≈DIN 6527

HB

V1/1#

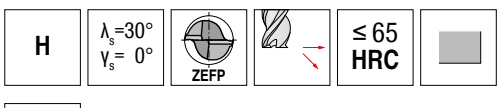
DC f8 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 230 ... EUR	
6	18	5,5	25	26	62	6	0,12	5	60,18	**060**
8	24	7,5	30	32	68	8	0,16	5	79,68	**080**
10	30	9,5	35	40	80	10	0,20	5	101,30	**100**
12	36	11,5	45	48	93	12	0,24	5	133,30	**120**
16	48	15,5	55	60	108	16	0,32	5	228,10	**160**
20	60	19,5	70	76	126	20	0,40	5	359,30	**200**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

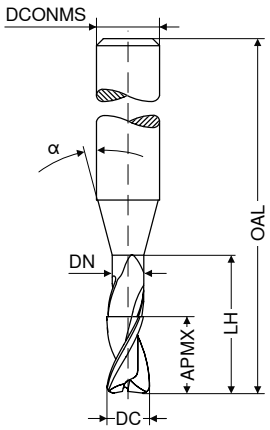
→ v_c/f_z Page 308+309

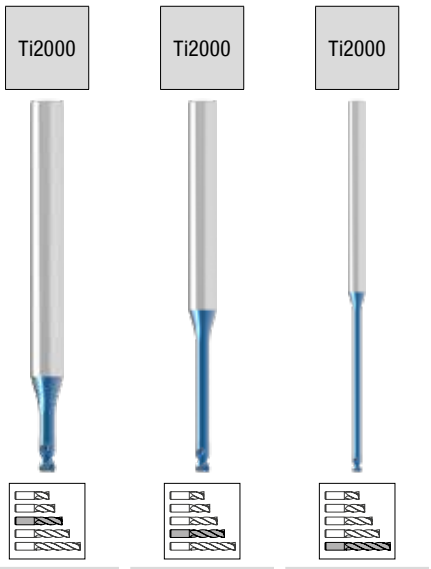
BlueLine – Micro-end milling cutter

▲ T_x = maximum engagement depth









Factory standard | Factory standard | Factory standard

HA | HA | HA

DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 345 ...		V1 Article no. 52 346 ...		V1 Article no. 52 347 ...	
mm	mm	mm	mm	mm		mm			EUR		EUR		EUR	
0,2	0,3	0,18	0,5	45	16	4	2,5 x DC	2	63,92	302				
0,2	0,3	0,18	1,0	45	16	4	5 x DC	2	63,92	402				
0,2	0,3	0,18	1,5	45	16	4	7,5 x DC	2	63,92	502				
0,3	0,4	0,28	1,0	45	16	4	3,3 x DC	2	61,29	303				
0,3	0,4	0,28	2,0	45	16	4	6,6 x DC	2	61,29	403				
0,3	0,4	0,28	3,0	45	16	4	10 x DC	2			61,29	303		
0,3	0,4	0,28	6,0	45	16	4	20 x DC	2			61,29	403		
0,3	0,4	0,28	9,0	45	16	4	30 x DC	2					61,29	303
0,4	0,6	0,38	2,0	45	16	4	5 x DC	2	60,39	304				
0,4	0,6	0,38	3,0	45	16	4	7,5 x DC	2	60,39	404				
0,4	0,6	0,38	4,0	45	16	4	10 x DC	2			60,39	304		
0,4	0,6	0,38	5,0	45	16	4	12,5 x DC	2			60,39	404		
0,4	0,6	0,38	8,0	45	16	4	20 x DC	2					60,39	304
0,4	0,6	0,38	12,0	45	16	4	30 x DC	2					62,26	404
0,5	0,7	0,48	2,0	45	16	4	4 x DC	2	49,16	305				
0,5	0,7	0,48	4,0	45	16	4	8 x DC	2	49,16	405				
0,5	0,7	0,48	6,0	45	16	4	12 x DC	2			49,16	305		
0,5	0,7	0,48	8,0	45	16	4	16 x DC	2			50,59	405		
0,5	0,7	0,48	10,0	50	16	4	20 x DC	2					51,69	305
0,5	0,7	0,48	15,0	50	16	4	30 x DC	2					54,23	405
0,6	0,9	0,58	2,0	45	16	4	3,3 x DC	2	49,16	306				
0,6	0,9	0,58	4,0	45	16	4	6,6 x DC	2	49,16	406				
0,6	0,9	0,58	6,0	45	16	4	10 x DC	2			49,16	306		
0,6	0,9	0,58	8,0	45	16	4	13,3 x DC	2			50,59	406		
0,6	0,9	0,58	10,0	45	16	4	16,6 x DC	2			50,59	506		
0,6	0,9	0,58	12,0	50	16	4	20 x DC	2					50,92	306
0,6	0,9	0,58	18,0	50	16	4	30 x DC	2					54,56	406
0,7	1,0	0,68	2,0	45	16	4	2,8 x DC	2	51,80	307				
0,7	1,0	0,68	4,0	45	16	4	5,7 x DC	2	51,80	407				
0,7	1,0	0,68	6,0	45	16	4	8,5 x DC	2	51,80	507				
0,7	1,0	0,68	8,0	45	16	4	11,4 x DC	2			53,24	307		
0,7	1,0	0,68	10,0	50	16	4	14,2 x DC	2			53,24	407		
0,8	1,2	0,78	4,0	45	16	4	5 x DC	2	56,43	308				
0,8	1,2	0,78	6,0	45	16	4	7,5 x DC	2	56,43	408				
0,8	1,2	0,78	8,0	45	16	4	10 x DC	2			56,43	308		
0,8	1,2	0,78	10,0	50	16	4	12,5 x DC	2			59,19	408		
0,8	1,2	0,78	12,0	50	16	4	15 x DC	2			59,19	508		
0,8	1,2	0,78	16,0	50	16	4	20 x DC	2					62,16	308
0,8	1,2	0,78	24,0	60	16	4	30 x DC	2					64,81	408
0,9	1,3	0,88	4,0	45	16	4	4,4 x DC	2	47,06	309				
0,9	1,3	0,88	6,0	45	16	4	6,6 x DC	2	47,06	409				
0,9	1,3	0,88	8,0	45	16	4	8,8 x DC	2	48,38	509				
0,9	1,3	0,88	10,0	45	16	4	11,1 x DC	2			48,38	309		
0,9	1,3	0,88	15,0	50	16	4	16,6 x DC	2			53,79	409		
1,0	1,5	0,95	4,0	45	16	4	4 x DC	2	48,38	310				
1,0	1,5	0,95	6,0	45	16	4	6 x DC	2	48,38	410				
1,0	1,5	0,95	8,0	45	16	4	8 x DC	2	48,38	510				

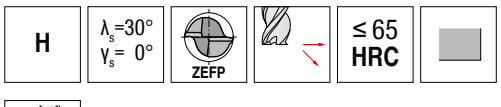
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

→ v_c/f_z Page 316+317

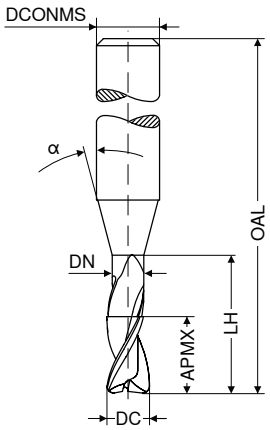
Continued on next page

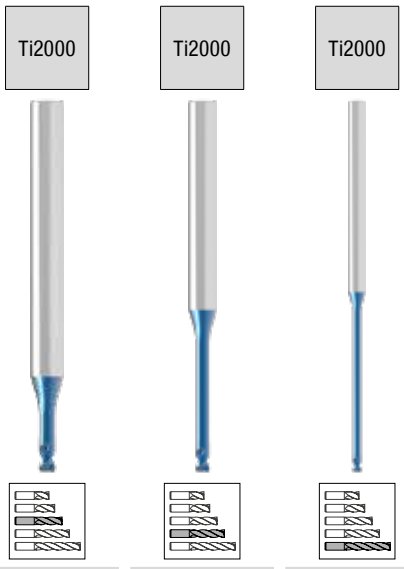
BlueLine – Micro-end milling cutter

▲ T_x = maximum engagement depth









Factory standard | Factory standard | Factory standard

HA | HA | HA

DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 345 ...		V1 Article no. 52 346 ...		V1 Article no. 52 347 ...	
mm	mm	mm	mm	mm		mm			EUR		EUR		EUR	
1,0	1,5	0,95	10,0	45	16	4	10 x DC	2			48,38	310		
1,0	1,5	0,95	12,0	45	16	4	12 x DC	2			49,38	410		
1,0	1,5	0,95	14,0	45	16	4	14 x DC	2			49,38	510		
1,0	1,5	0,95	16,0	50	16	4	16 x DC	2			51,69	610		
1,0	1,5	0,95	20,0	54	16	4	20 x DC	2					57,31	310
1,0	1,5	0,95	25,0	70	16	4	25 x DC	2					62,16	410
1,0	1,5	0,95	30,0	70	16	4	30 x DC	2					63,04	510
1,2	1,8	1,14	6,0	45	16	4	5 x DC	2	52,35	312				
1,2	1,8	1,14	8,0	45	16	4	6,6 x DC	2	52,35	412				
1,2	1,8	1,14	10,0	45	16	4	8,3 x DC	2	53,79	512				
1,2	1,8	1,14	12,0	45	16	4	10 x DC	2			53,79	312		
1,2	1,8	1,14	16,0	50	16	4	13,3 x DC	2			59,19	412		
1,2	1,8	1,14	20,0	60	16	4	16,6 x DC	2			60,84	512		
1,4	2,1	1,34	6,0	45	16	4	4,2 x DC	2	52,35	314				
1,4	2,1	1,34	8,0	45	16	4	5,7 x DC	2	52,35	414				
1,4	2,1	1,34	10,0	45	16	4	7,1 x DC	2	53,79	514				
1,4	2,1	1,34	12,0	45	16	4	8,5 x DC	2	53,79	614				
1,4	2,1	1,34	14,0	45	16	4	10 x DC	2			53,79	314		
1,4	2,1	1,34	16,0	50	16	4	11,4 x DC	2			59,19	414		
1,4	2,1	1,34	22,0	54	16	4	15,7 x DC	2			60,84	514		
1,5	2,3	1,44	6,0	45	16	4	4 x DC	2	50,48	315				
1,5	2,3	1,44	8,0	45	16	4	5,3 x DC	2	50,48	415				
1,5	2,3	1,44	10,0	45	16	4	6,6 x DC	2	51,14	515				
1,5	2,3	1,44	12,0	45	16	4	8 x DC	2	51,14	615				
1,5	2,3	1,44	14,0	50	16	4	9,3 x DC	2	57,21	715				
1,5	2,3	1,44	16,0	50	16	4	10,6 x DC	2			57,21	315		
1,5	2,3	1,44	18,0	54	16	4	12 x DC	2			57,21	415		
1,5	2,3	1,44	20,0	54	16	4	13,3 x DC	2			57,21	515		
1,5	2,3	1,44	25,0	70	16	4	16,6 x DC	2			62,93	615		
1,5	2,3	1,44	30,0	70	16	4	20 x DC	2			62,93	715		
1,5	2,3	1,44	35,0	70	16	4	23,3 x DC	2					63,71	315
1,5	2,3	1,44	40,0	80	16	4	26,6 x DC	2					66,68	415
1,5	2,3	1,44	45,0	80	16	4	30 x DC	2					68,11	515
1,6	2,4	1,51	6,0	45	16	4	3,7 x DC	2	50,48	316				
1,6	2,4	1,51	8,0	45	16	4	5 x DC	2	50,48	416				
1,6	2,4	1,51	10,0	45	16	4	6,2 x DC	2	51,14	516				
1,6	2,4	1,51	12,0	45	16	4	7,5 x DC	2	51,14	616				
1,6	2,4	1,51	14,0	50	16	4	8,75 x DC	2	54,01	716				
1,6	2,4	1,51	16,0	50	16	4	10 x DC	2			54,01	316		
1,6	2,4	1,51	18,0	54	16	4	11,25 x DC	2			54,01	416		
1,6	2,4	1,51	20,0	54	16	4	12,5 x DC	2			54,01	516		
1,6	2,4	1,51	26,0	60	16	4	16,2 x DC	2			62,93	616		
1,8	2,7	1,71	6,0	45	16	4	3,3 x DC	2	50,48	318				
1,8	2,7	1,71	8,0	45	16	4	4,4 x DC	2	50,48	418				
1,8	2,7	1,71	10,0	45	16	4	5,5 x DC	2	50,92	518				
1,8	2,7	1,71	12,0	45	16	4	6,6 x DC	2	51,14	618				
1,8	2,7	1,71	14,0	50	16	4	7,7 x DC	2	54,01	718				

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

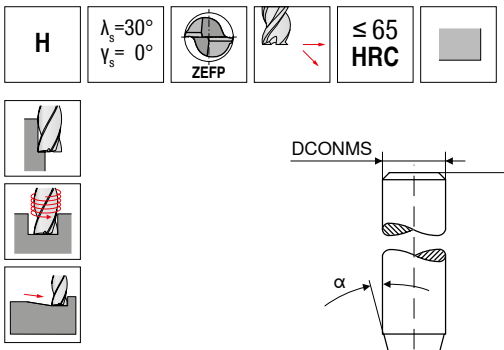
→ v_c/f_z Page 316+317

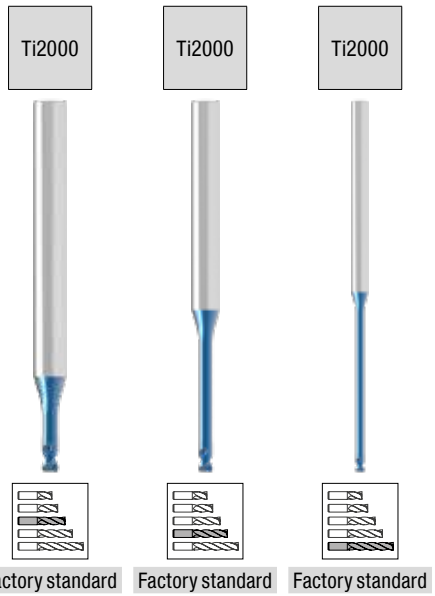
14

Continued on next page

BlueLine – Micro-end milling cutter

▲ T_x = maximum engagement depth





Factory standard | Factory standard | Factory standard

HA | HA | HA

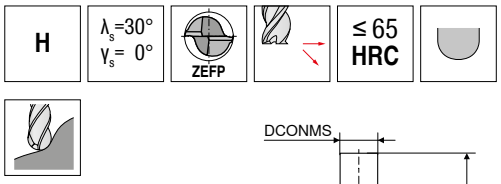
DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 345 ...		V1 Article no. 52 346 ...		V1 Article no. 52 347 ...	
mm	mm	mm	mm	mm		mm			EUR		EUR		EUR	
1,8	2,7	1,71	16,0	50	16	4	8,8 x DC	2	54,01	818				
1,8	2,7	1,71	18,0	54	16	4	10 x DC	2			57,21	318		
1,8	2,7	1,71	20,0	54	16	4	11,1 x DC	2			57,21	418		
1,8	2,7	1,71	25,0	60	16	4	13,8 x DC	2			62,93	518		
2,0	3,0	1,91	6,0	45	16	4	3 x DC	2	50,48	320				
2,0	3,0	1,91	8,0	45	16	4	4 x DC	2	50,48	420				
2,0	3,0	1,91	10,0	45	16	4	5 x DC	2	51,14	520				
2,0	3,0	1,91	12,0	45	16	4	6 x DC	2	51,14	620				
2,0	3,0	1,91	14,0	50	16	4	7 x DC	2	54,01	720				
2,0	3,0	1,91	16,0	50	16	4	8 x DC	2	54,01	820				
2,0	3,0	1,91	18,0	54	16	4	9 x DC	2	54,01	920				
2,0	3,0	1,91	20,0	54	16	4	10 x DC	2			57,21	320		
2,0	3,0	1,91	25,0	60	16	4	12,5 x DC	2			62,93	420		
2,0	3,0	1,91	30,0	70	16	4	15 x DC	2			64,92	520		
2,0	3,0	1,91	35,0	80	16	4	17,5 x DC	2			67,12	620		
2,0	3,0	1,91	40,0	90	16	4	20 x DC	2					72,42	320
2,0	3,0	1,91	50,0	100	16	4	25 x DC	2					77,59	420
2,0	3,0	1,91	60,0	110	16	4	30 x DC	2					88,17	520
2,5	3,7	2,41	8,0	45	16	4	3,2 x DC	2	50,48	325				
2,5	3,7	2,41	10,0	45	16	4	4 x DC	2	51,14	425				
2,5	3,7	2,41	12,0	45	16	4	4,8 x DC	2	51,14	525				
2,5	3,7	2,41	14,0	50	16	4	5,6 x DC	2	54,01	625				
2,5	3,7	2,41	16,0	50	16	4	6,4 x DC	2	54,01	725				
2,5	3,7	2,41	18,0	54	16	4	7,2 x DC	2	57,21	825				
2,5	3,7	2,41	20,0	54	16	4	8 x DC	2	57,21	925				
2,5	3,7	2,41	25,0	60	16	4	10 x DC	2			62,49	325		
2,5	3,7	2,41	30,0	70	16	4	12 x DC	2			68,22	425		
2,5	3,7	2,41	40,0	90	16	4	16 x DC	2			88,39	525		
2,5	3,7	2,41	50,0	100	16	4	20 x DC	2					98,75	325
3,0	4,5	2,92	8,0	45	16	4	2,6 x DC	2	51,14	330				
3,0	4,5	2,92	12,0	45	16	4	4 x DC	2	51,14	430				
3,0	4,5	2,92	16,0	50	16	4	5,3 x DC	2	54,01	530				
3,0	4,5	2,92	20,0	54	16	4	6,6 x DC	2	57,21	630				

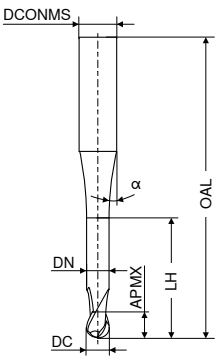
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

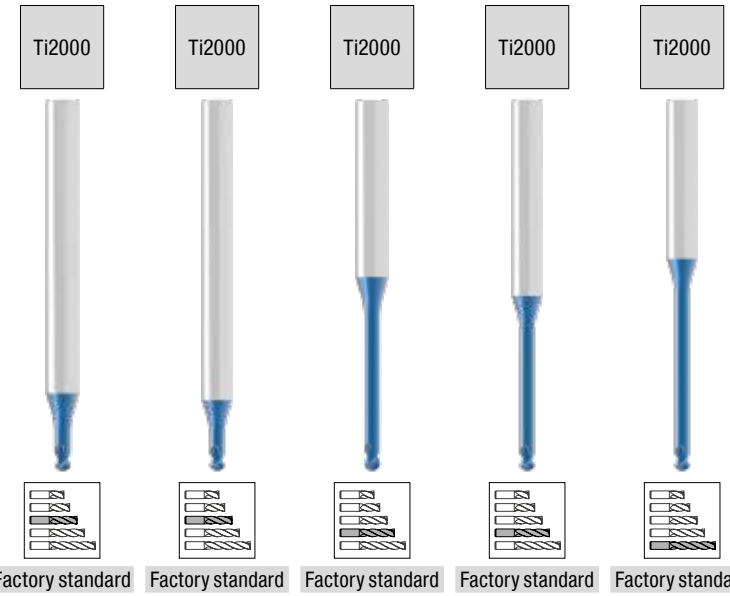
→ v_c/f_z Page 316+317

BlueLine – Micro-ball nosed cutter

▲ T_x = maximum engagement depth







DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 356 ...		V1 Article no. 52 358 ...		V1 Article no. 52 357 ...		V1 Article no. 52 359 ...		V1 Article no. 52 360 ...	
mm	mm	mm	mm	mm		mm			EUR		EUR		EUR		EUR		EUR	
0,2	0,16	0,17	0,30	45	16	4	1,5 x DC	2	66,89	302								
0,2	0,16	0,17	0,50	45	16	4	2,5 x DC	2	66,89	402								
0,2	0,16	0,17	0,75	45	16	4	3,75 x DC	2	66,89	502								
0,2	0,16	0,17	1,00	45	16	4	5 x DC	2	66,89	602								
0,2	0,16	0,17	1,25	45	16	4	6,2 x DC	2	66,89	702								
0,2	0,16	0,17	1,50	45	16	4	7,5 x DC	2	66,89	802								
0,2	0,16	0,17	1,75	45	16	4	8,7 x DC	2	66,89	902								
0,2	0,16	0,17	2,00	45	16	4	10 x DC	2					66,89	302				
0,2	0,16	0,17	2,50	45	16	4	12,5 x DC	2					66,89	402				
0,2	0,16	0,17	3,00	45	16	4	15 x DC	2					66,89	502				
0,3	0,24	0,27	0,50	45	16	4	1,6 x DC	2	64,92	303								
0,3	0,24	0,27	0,75	45	16	4	2,5 x DC	2	64,92	403								
0,3	0,24	0,27	1,00	45	16	4	3,3 x DC	2	64,92	503								
0,3	0,24	0,27	1,25	45	16	4	4,1 x DC	2	64,92	603								
0,3	0,24	0,27	1,50	45	16	4	5 x DC	2	64,92	703								
0,3	0,24	0,27	1,75	50	16	4	5,8 x DC	2			64,92	303						
0,3	0,24	0,27	2,00	50	16	4	6,6 x DC	2			64,92	403						
0,3	0,24	0,27	2,25	50	16	4	7,5 x DC	2			64,92	503						
0,3	0,24	0,27	2,50	50	16	4	8,3 x DC	2			64,92	603						
0,3	0,24	0,27	2,75	50	16	4	9,1 x DC	2			64,92	703						
0,3	0,24	0,27	3,00	50	16	4	10 x DC	2							64,92	303		
0,3	0,24	0,27	3,50	50	16	4	11,6 x DC	2							64,92	403		
0,3	0,24	0,27	4,00	50	16	4	13,3 x DC	2							64,92	503		
0,3	0,24	0,27	4,50	50	16	4	15 x DC	2							64,92	603		
0,4	0,32	0,34	0,50	45	16	4	1,2 x DC	2	64,03	304								
0,4	0,32	0,34	1,00	45	16	4	2,5 x DC	2	64,03	404								
0,4	0,32	0,34	1,50	45	16	4	3,75 x DC	2	64,03	504								
0,4	0,32	0,34	2,00	45	16	4	5 x DC	2	64,03	604								
0,4	0,32	0,34	2,50	45	16	4	6,2 x DC	2	64,03	704								
0,4	0,32	0,34	3,00	45	16	4	7,5 x DC	2	64,03	804								
0,4	0,32	0,34	3,50	45	16	4	8,7 x DC	2	63,60	904								
0,4	0,32	0,34	4,00	45	16	4	10 x DC	2					63,60	304				
0,4	0,32	0,34	4,50	45	16	4	11,2 x DC	2					63,60	404				
0,4	0,32	0,34	5,00	45	16	4	12,5 x DC	2					63,60	504				
0,4	0,32	0,34	5,50	45	16	4	13,7 x DC	2					63,60	604				
0,4	0,32	0,34	6,00	45	16	4	15 x DC	2					63,60	704				
0,5	0,40	0,47	1,50	45	16	4	3 x DC	2	52,02	305								
0,5	0,40	0,47	2,00	45	16	4	4 x DC	2	52,02	405								
0,5	0,40	0,47	2,50	45	16	4	5 x DC	2	52,02	505								
0,5	0,40	0,47	3,00	45	16	4	6 x DC	2	52,02	605								
0,5	0,40	0,47	3,50	45	16	4	7 x DC	2	52,02	705								
0,5	0,40	0,47	4,00	45	16	4	8 x DC	2	52,02	805								
0,5	0,40	0,47	4,50	45	16	4	9 x DC	2	52,02	905								
0,5	0,40	0,47	5,00	45	16	4	10 x DC	2					52,02	305				

Steel	●	●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials	●	●	●	●	●

→ v_c/f_z Page 316+317

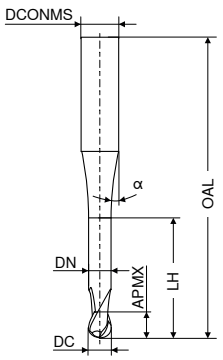
14

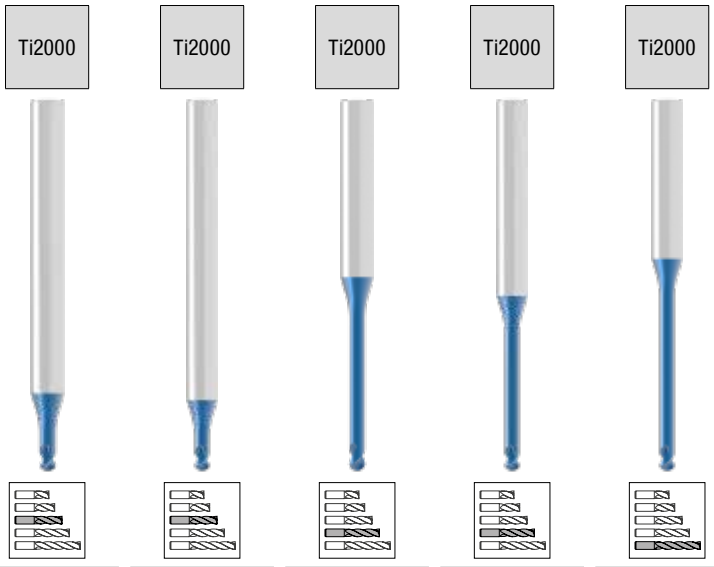
Continued on next page

BlueLine – Micro-ball nosed cutter

▲ T_x = maximum engagement depth

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA

V1 | V1 | V1 | V1 | V1

DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	Article no. 52 356 ...		Article no. 52 358 ...		Article no. 52 357 ...		Article no. 52 359 ...		Article no. 52 360 ...	
mm	mm	mm	mm	mm		mm			EUR		EUR		EUR		EUR		EUR	
0,5	0,40	0,47	5,50	45	16	4	11 x DC	2					52,02	405				
0,5	0,40	0,47	6,00	45	16	4	12 x DC	2					52,02	505				
0,5	0,40	0,47	7,00	45	16	4	14 x DC	2					52,02	605				
0,5	0,40	0,47	8,00	45	16	4	16 x DC	2					52,69	705				
0,5	0,40	0,47	9,00	45	16	4	18 x DC	2					52,69	805				
0,5	0,40	0,47	10,00	50	16	4	20 x DC	2									52,69	305
0,6	0,40	0,57	12,00	50	16	4	20 x DC	2									55,33	306
0,6	0,48	0,57	1,00	45	16	4	1,6 x DC	2	52,02	306								
0,6	0,48	0,57	2,00	45	16	4	3,3 x DC	2	52,02	406								
0,6	0,48	0,57	3,00	45	16	4	5 x DC	2	52,02	506								
0,6	0,48	0,57	4,00	45	16	4	6,6 x DC	2	52,02	606								
0,6	0,48	0,57	5,00	45	16	4	8,3 x DC	2	52,02	706								
0,6	0,48	0,57	6,00	45	16	4	10 x DC	2					52,02	306				
0,6	0,48	0,57	8,00	45	16	4	13,3 x DC	2					52,02	406				
0,6	0,48	0,57	10,00	50	16	4	16,6 x DC	2							54,11	306		
0,8	0,64	0,77	2,00	45	16	4	2,5 x DC	2	58,64	308								
0,8	0,64	0,77	3,00	45	16	4	3,75 x DC	2	58,64	408								
0,8	0,64	0,77	4,00	45	16	4	5 x DC	2	58,64	508								
0,8	0,64	0,77	5,00	45	16	4	6,2 x DC	2	58,64	608								
0,8	0,64	0,77	6,00	45	16	4	7,5 x DC	2	58,64	708								
0,8	0,64	0,77	7,00	45	16	4	8,7 x DC	2	58,64	808								
0,8	0,64	0,77	8,00	45	16	4	10 x DC	2					59,19	308				
0,8	0,64	0,77	9,00	45	16	4	11,2 x DC	2					59,19	408				
0,8	0,64	0,77	10,00	50	16	4	12,5 x DC	2							59,19	308		
1,0	0,80	0,96	3,00	45	16	4	3 x DC	2	49,82	310								
1,0	0,80	0,96	4,00	45	16	4	4 x DC	2	49,82	410								
1,0	0,80	0,96	5,00	45	16	4	5 x DC	2	49,82	510								
1,0	0,80	0,96	6,00	45	16	4	6 x DC	2	49,82	610								
1,0	0,80	0,96	7,00	45	16	4	7 x DC	2	53,79	710								
1,0	0,80	0,96	8,00	45	16	4	8 x DC	2	53,79	810								
1,0	0,80	0,96	9,00	45	16	4	9 x DC	2	53,79	910								
1,0	0,80	0,96	10,00	45	16	4	10 x DC	2					53,79	310				
1,0	0,80	0,96	12,00	45	16	4	12 x DC	2					53,79	410				
1,0	0,80	0,96	14,00	50	16	4	14 x DC	2							55,33	310		
1,0	0,80	0,96	16,00	50	16	4	16 x DC	2							57,53	410		
1,2	0,96	1,16	6,00	45	16	4	5 x DC	2	55,55	312								
1,2	0,96	1,16	8,00	45	16	4	6,6 x DC	2	55,55	412								
1,2	0,96	1,16	10,00	45	16	4	8,3 x DC	2	57,42	512								
1,2	0,96	1,16	12,00	45	16	4	10 x DC	2					57,42	312				
1,2	0,96	1,16	14,00	50	16	4	11,6 x DC	2							58,08	312		
1,2	0,96	1,16	16,00	50	16	4	13,3 x DC	2							58,08	412		
1,4	1,12	1,34	8,00	45	16	4	5,7 x DC	2	53,46	314								
1,4	1,12	1,34	12,00	45	16	4	8,5 x DC	2	55,55	414								
1,4	1,12	1,34	16,00	50	16	4	11,4 x DC	2							57,64	314		

Steel	●	●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials	●	●	●	●	●

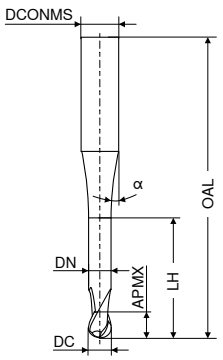
→ v_c/f_z Page 316+317

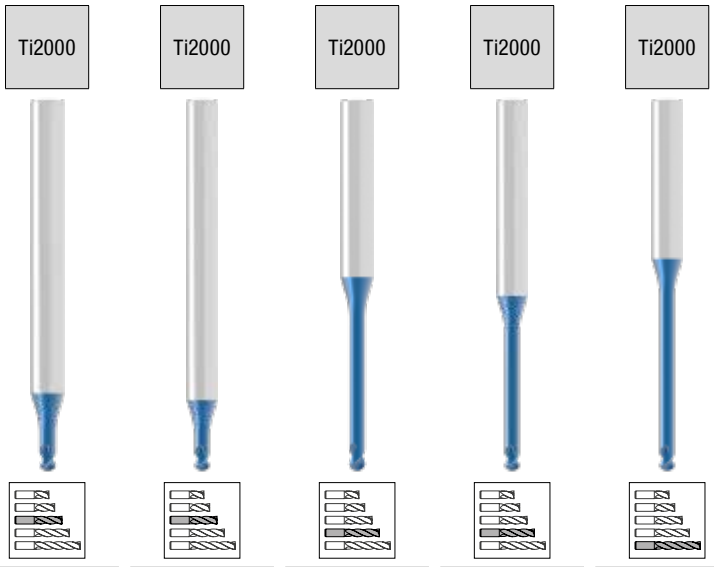
Continued on next page

BlueLine – Micro-ball nosed cutter

▲ T_x = maximum engagement depth

H	λ_s=30° γ_s= 0°	ZEFP		≤ 65 HRC	





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA

V1 | V1 | V1 | V1 | V1

DC $_{-0,01}$	APMX	DN	LH	OAL	α°	DCONMS $_{h5}$	T_x	ZEFP	Article no. 52 356 ...		Article no. 52 358 ...		Article no. 52 357 ...		Article no. 52 359 ...		Article no. 52 360 ...	
mm	mm	mm	mm	mm		mm			EUR		EUR		EUR		EUR		EUR	
1,5	1,20	1,44	3,00	45	16	4	2 x DC	2	52,24	315								
1,5	1,20	1,44	4,00	45	16	4	2,6 x DC	2	52,24	415								
1,5	1,20	1,44	6,00	45	16	4	4 x DC	2	52,24	515								
1,5	1,20	1,44	8,00	45	16	4	5,3 x DC	2	52,24	615								
1,5	1,20	1,44	10,00	45	16	4	6,6 x DC	2	52,24	715								
1,5	1,20	1,44	12,00	45	16	4	8 x DC	2	55,33	815								
1,5	1,20	1,44	14,00	50	16	4	9,3 x DC	2			55,33	315						
1,5	1,20	1,44	16,00	50	16	4	10,6 x DC	2							55,33	315		
1,6	1,28	1,54	8,00	45	16	4	5 x DC	2	55,33	316								
1,6	1,28	1,54	12,00	45	16	4	7,5 x DC	2	55,33	416								
1,6	1,28	1,54	16,00	50	16	4	10 x DC	2							57,42	316		
1,8	1,44	1,74	8,00	45	16	4	4,4 x DC	2	55,33	318								
1,8	1,44	1,74	12,00	45	16	4	6,6 x DC	2	55,33	418								
1,8	1,44	1,74	16,00	50	16	4	8,8 x DC	2			57,42	318						
2,0	1,60	1,94	3,00	45	16	4	1,5 x DC	2	51,91	320								
2,0	1,60	1,94	4,00	45	16	4	2 x DC	2	51,91	420								
2,0	1,60	1,94	6,00	45	16	4	3 x DC	2	51,91	520								
2,0	1,60	1,94	8,00	45	16	4	4 x DC	2	55,33	620								
2,0	1,60	1,94	10,00	45	16	4	5 x DC	2	55,33	720								
2,0	1,60	1,94	12,00	45	16	4	6 x DC	2	55,33	820								
2,0	1,60	1,94	14,00	50	16	4	7 x DC	2			55,33	320						
2,0	1,60	1,94	16,00	50	16	4	8 x DC	2			55,33	420						
2,5	2,00	2,41	10,00	45	16	4	4 x DC	2	57,64	325								
2,5	2,00	2,41	15,00	50	16	4	6 x DC	2			59,29	325						
3,0	3,50	2,92	8,00	45	16	4	2,6 x DC	2	55,55	330								
3,0	3,50	2,92	10,00	45	16	4	3,3 x DC	2	55,55	430								
3,0	3,50	2,92	12,00	45	16	4	4 x DC	2	55,55	530								
3,0	3,50	2,92	16,00	45	16	4	5,3 x DC	2	58,31	630								
3,0	3,50	2,92	16,00	50	16	4	5,3 x DC	2			58,64	330						

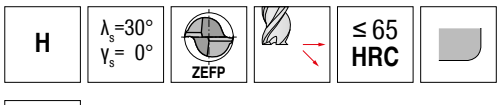
Steel	●	●	●	●	●	
Stainless steel						
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials	●	●	●	●	●	

→ v_c/f_z Page 316+317

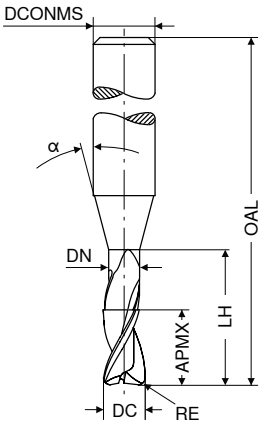
14

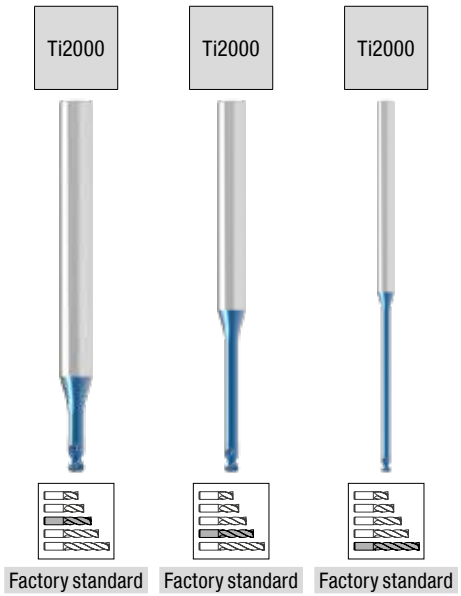
BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth









Factory standard | Factory standard | Factory standard

HA | HA | HA

DC -0,012	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 349 ... EUR		V1 Article no. 52 350 ... EUR		V1 Article no. 52 351 ... EUR	
mm	mm	mm	mm	mm	mm		mm								
0,4	0,1	0,4	0,38	1,0	50	16	4	2,5 x DC	2	64,03	30401				
0,4	0,1	0,4	0,38	1,5	50	16	4	3,75 x DC	2	64,03	40401				
0,4	0,1	0,4	0,38	2,0	50	16	4	5 x DC	2	64,03	50401				
0,4	0,1	0,4	0,38	3,0	50	16	4	7,5 x DC	2	64,03	60401				
0,4	0,1	0,4	0,38	4,0	50	16	4	10 x DC	2			64,03	30401		
0,5	0,1	0,5	0,48	1,0	50	16	4	2 x DC	2	52,02	30501				
0,5	0,1	0,5	0,48	2,0	50	16	4	4 x DC	2	52,02	40501				
0,5	0,1	0,5	0,48	3,0	50	16	4	6 x DC	2	52,02	50501				
0,5	0,1	0,5	0,48	4,0	50	16	4	8 x DC	2	52,02	60501				
0,5	0,1	0,5	0,48	5,0	50	16	4	10 x DC	2			52,02	30501		
0,5	0,1	0,5	0,48	6,0	50	16	4	12 x DC	2			52,02	40501		
0,6	0,1	0,6	0,58	2,0	50	16	4	3,3 x DC	2	52,02	30601				
0,6	0,1	0,6	0,58	3,0	50	16	4	5 x DC	2	52,02	40601				
0,6	0,1	0,6	0,58	4,0	50	16	4	6,6 x DC	2	52,02	50601				
0,6	0,1	0,6	0,58	6,0	50	16	4	10 x DC	2			52,02	30601		
0,6	0,1	0,6	0,58	8,0	50	16	4	13,3 x DC	2			52,02	40601		
0,7	0,1	0,7	0,68	4,0	50	16	4	5,7 x DC	2	54,89	30701				
0,7	0,1	0,7	0,68	6,0	50	16	4	8,5 x DC	2	54,89	40701				
0,8	0,1	0,8	0,78	4,0	50	16	4	5 x DC	2	58,52	30801				
0,8	0,1	0,8	0,78	6,0	50	16	4	7,5 x DC	2	58,52	40801				
0,8	0,2	0,8	0,78	4,0	50	16	4	5 x DC	2	58,64	30802				
0,8	0,2	0,8	0,78	6,0	50	16	4	7,5 x DC	2	58,64	40802				
1,0	0,1	1,0	0,95	2,0	50	16	4	2 x DC	2	49,38	31001				
1,0	0,1	1,0	0,95	4,0	50	16	4	4 x DC	2	49,38	41001				
1,0	0,1	1,0	0,95	6,0	50	16	4	6 x DC	2	53,79	51001				
1,0	0,1	1,0	0,95	8,0	50	16	4	8 x DC	2	53,79	61001				
1,0	0,1	1,0	0,95	10,0	50	16	4	10 x DC	2			53,79	31001		
1,0	0,1	1,0	0,95	12,0	54	16	4	12 x DC	2			53,79	41001		
1,0	0,1	1,0	0,95	16,0	60	16	4	16 x DC	2			70,65	51001		
1,0	0,1	1,0	0,95	20,0	60	16	4	20 x DC	2					79,02	31001
1,0	0,2	1,0	0,95	2,0	50	16	4	2 x DC	2	49,82	31002				
1,0	0,2	1,0	0,95	4,0	50	16	4	4 x DC	2	49,82	41002				
1,0	0,2	1,0	0,95	6,0	50	16	4	6 x DC	2	53,79	51002				
1,0	0,2	1,0	0,95	8,0	50	16	4	8 x DC	2	53,79	61002				
1,0	0,2	1,0	0,95	10,0	50	16	4	10 x DC	2			53,79	31002		
1,0	0,2	1,0	0,95	12,0	54	16	4	12 x DC	2			53,79	41002		
1,0	0,2	1,0	0,95	16,0	60	16	4	16 x DC	2			70,65	51002		
1,0	0,2	1,0	0,95	20,0	60	16	4	20 x DC	2					79,02	31002
1,0	0,3	1,0	0,95	2,0	50	16	4	2 x DC	2	49,82	31003				
1,0	0,3	1,0	0,95	4,0	50	16	4	4 x DC	2	49,82	41003				
1,0	0,3	1,0	0,95	6,0	50	16	4	6 x DC	2	53,68	51003				
1,0	0,3	1,0	0,95	8,0	50	16	4	8 x DC	2	53,68	61003				
1,0	0,3	1,0	0,95	10,0	50	16	4	10 x DC	2			53,68	31003		
1,0	0,3	1,0	0,95	12,0	54	16	4	12 x DC	2			53,68	41003		
1,0	0,3	1,0	0,95	16,0	60	16	4	16 x DC	2			70,65	51003		
1,0	0,3	1,0	0,95	20,0	60	16	4	20 x DC	2					79,02	31003
1,2	0,2	1,2	1,14	6,0	50	16	4	5 x DC	2	55,55	31202				

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

→ v_c/f_z Page 316+317

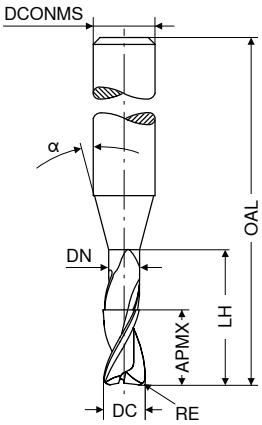
Continued on next page

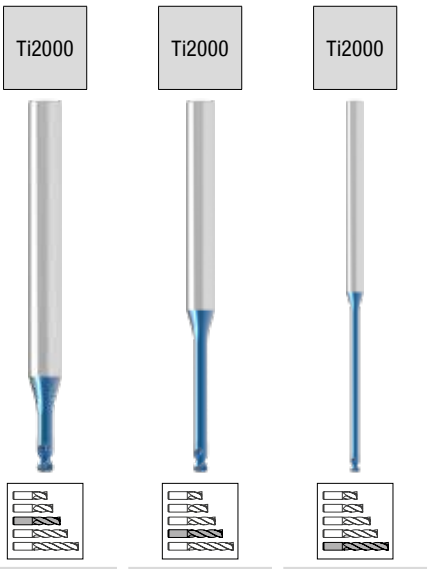
BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth









DC -0,012	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 349 ...		V1 Article no. 52 350 ...		V1 Article no. 52 351 ...	
mm	mm	mm	mm	mm	mm		mm			EUR		EUR		EUR	
1,2	0,2	1,2	1,14	12,0	54	16	4	10 x DC	2			55,55	31202		
1,2	0,2	1,2	1,14	20,0	60	16	4	16,6 x DC	2			83,21	41202		
1,2	0,3	1,2	1,14	6,0	50	16	4	5 x DC	2	55,55	31203				
1,2	0,3	1,2	1,14	12,0	54	16	4	10 x DC	2			55,55	31203		
1,2	0,3	1,2	1,14	20,0	60	16	4	16,6 x DC	2			83,21	41203		
1,5	0,2	1,5	1,44	4,0	50	16	4	2,6 x DC	2	52,24	31502				
1,5	0,2	1,5	1,44	6,0	50	16	4	4 x DC	2	52,24	41502				
1,5	0,2	1,5	1,44	8,0	50	16	4	5,3 x DC	2	55,33	51502				
1,5	0,2	1,5	1,44	10,0	50	16	4	6,6 x DC	2	55,33	61502				
1,5	0,2	1,5	1,44	12,0	54	16	4	8 x DC	2	55,33	71502				
1,5	0,2	1,5	1,44	16,0	54	16	4	10,6 x DC	2			55,33	31502		
1,5	0,2	1,5	1,44	20,0	60	16	4	13,3 x DC	2			55,33	41502		
1,5	0,3	1,5	1,44	4,0	50	16	4	2,6 x DC	2	52,24	31503				
1,5	0,3	1,5	1,44	6,0	50	16	4	4 x DC	2	52,24	41503				
1,5	0,3	1,5	1,44	8,0	50	16	4	5,3 x DC	2	55,33	51503				
1,5	0,3	1,5	1,44	10,0	50	16	4	6,6 x DC	2	55,33	61503				
1,5	0,3	1,5	1,44	12,0	54	16	4	8 x DC	2	55,33	71503				
1,5	0,3	1,5	1,44	16,0	54	16	4	10,6 x DC	2			55,33	31503		
1,5	0,3	1,5	1,44	20,0	60	16	4	13,3 x DC	2			55,33	41503		
1,5	0,5	1,5	1,44	4,0	50	16	4	2,6 x DC	2	52,24	31505				
1,5	0,5	1,5	1,44	6,0	50	16	4	4 x DC	2	52,24	41505				
1,5	0,5	1,5	1,44	8,0	50	16	4	5,3 x DC	2	52,24	51505				
1,5	0,5	1,5	1,44	10,0	50	16	4	6,6 x DC	2	52,24	61505				
1,5	0,5	1,5	1,44	12,0	54	16	4	8 x DC	2	52,24	71505				
1,5	0,5	1,5	1,44	16,0	54	16	4	10,6 x DC	2			52,24	31505		
1,5	0,5	1,5	1,44	20,0	60	16	4	13,3 x DC	2			52,24	41505		
2,0	0,1	2,0	1,91	4,0	50	16	4	2 x DC	2	51,91	32001				
2,0	0,1	2,0	1,91	6,0	50	16	4	3 x DC	2	51,91	42001				
2,0	0,1	2,0	1,91	8,0	50	16	4	4 x DC	2	55,33	52001				
2,0	0,1	2,0	1,91	10,0	50	16	4	5 x DC	2	55,33	62001				
2,0	0,1	2,0	1,91	12,0	54	16	4	6 x DC	2	55,33	72001				
2,0	0,1	2,0	1,91	16,0	54	16	4	8 x DC	2	55,33	82001				
2,0	0,1	2,0	1,91	20,0	60	16	4	10 x DC	2			55,33	32001		
2,0	0,1	2,0	1,91	26,0	70	16	4	13 x DC	2			55,33	42001		
2,0	0,2	2,0	1,91	4,0	50	16	4	2 x DC	2	51,91	32002				
2,0	0,2	2,0	1,91	6,0	50	16	4	3 x DC	2	51,91	42002				
2,0	0,2	2,0	1,91	8,0	50	16	4	4 x DC	2	55,33	52002				
2,0	0,2	2,0	1,91	10,0	50	16	4	5 x DC	2	55,33	62002				
2,0	0,2	2,0	1,91	12,0	54	16	4	6 x DC	2	55,33	72002				
2,0	0,2	2,0	1,91	16,0	54	16	4	8 x DC	2	55,33	82002				
2,0	0,2	2,0	1,91	20,0	60	16	4	10 x DC	2			55,33	32002		
2,0	0,2	2,0	1,91	26,0	70	16	4	13 x DC	2			55,33	42002		
2,0	0,3	2,0	1,91	4,0	50	16	4	2 x DC	2	51,91	32003				
2,0	0,3	2,0	1,91	6,0	50	16	4	3 x DC	2	51,91	42003				
2,0	0,3	2,0	1,91	8,0	50	16	4	4 x DC	2	51,91	52003				
2,0	0,3	2,0	1,91	10,0	50	16	4	5 x DC	2	55,33	62003				
2,0	0,3	2,0	1,91	12,0	54	16	4	6 x DC	2	55,33	72003				

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

→ v_c/f_z Page 316+317

14

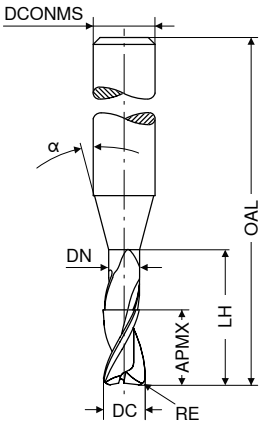
Continued on next page

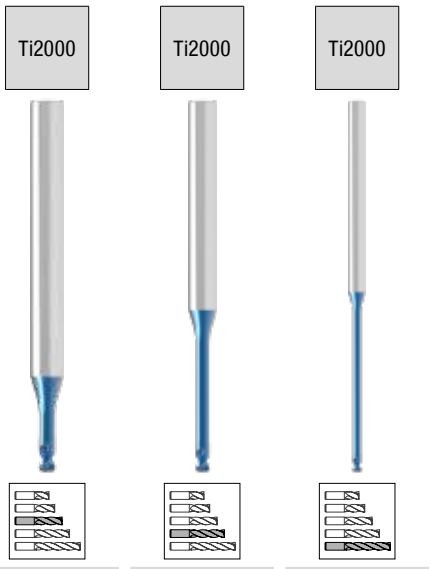
BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC







Factory standard | Factory standard | Factory standard

HA | HA | HA

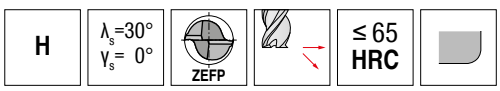
DC -0,012	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 349 ...		V1 Article no. 52 350 ...		V1 Article no. 52 351 ...	
mm	mm	mm	mm	mm	mm		mm			EUR		EUR		EUR	
2,0	0,3	2,0	1,91	16,0	54	16	4	8 x DC	2	55,33	**82003**				
2,0	0,3	2,0	1,91	20,0	60	16	4	10 x DC	2			55,33	**32003**		
2,0	0,3	2,0	1,91	26,0	70	16	4	13 x DC	2			55,33	**42003**		
2,0	0,5	2,0	1,91	4,0	50	16	4	2 x DC	2	51,91	**32005**				
2,0	0,5	2,0	1,91	6,0	50	16	4	3 x DC	2	51,91	**42005**				
2,0	0,5	2,0	1,91	8,0	50	16	4	4 x DC	2	55,33	**52005**				
2,0	0,5	2,0	1,91	10,0	50	16	4	5 x DC	2	55,33	**62005**				
2,0	0,5	2,0	1,91	12,0	54	16	4	6 x DC	2	55,33	**72005**				
2,0	0,5	2,0	1,91	16,0	54	16	4	8 x DC	2	55,33	**82005**				
2,0	0,5	2,0	1,91	20,0	60	16	4	10 x DC	2			55,33	**32005**		
2,0	0,5	2,0	1,91	26,0	70	16	4	13 x DC	2			55,33	**42005**		
2,5	0,3	2,5	2,41	10,0	50	16	4	4 x DC	2	57,64	**32503**				
2,5	0,3	2,5	2,41	12,0	60	16	4	4,8 x DC	2	59,29	**42503**				
2,5	0,3	2,5	2,41	30,0	70	16	4	12 x DC	2			61,16	**32503**		
2,5	0,5	2,5	2,41	10,0	50	16	4	4 x DC	2	57,64	**32505**				
2,5	0,5	2,5	2,41	12,0	60	16	4	4,8 x DC	2	57,64	**42505**				
2,5	0,5	2,5	2,41	30,0	70	16	4	12 x DC	2			61,16	**32505**		
3,0	0,3	3,0	2,92	10,0	50	16	4	3,3 x DC	2	54,66	**33003**				
3,0	0,3	3,0	2,92	12,0	50	16	4	4 x DC	2	55,44	**43003**				
3,0	0,3	3,0	2,92	30,0	70	16	4	10 x DC	2			74,29	**33003**		
3,0	0,5	3,0	2,92	10,0	50	16	4	3,3 x DC	2	54,66	**33005**				
3,0	0,5	3,0	2,92	12,0	50	16	4	4 x DC	2	55,33	**43005**				
3,0	0,5	3,0	2,92	30,0	70	16	4	10 x DC	2			74,29	**33005**		

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

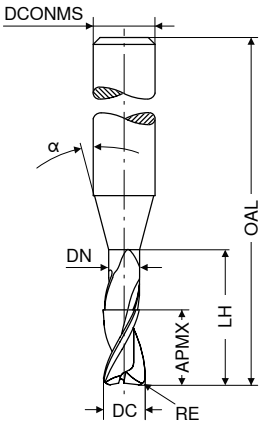
→ v_c/f_z Page 316+317

BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth













Factory standard



V1

DC -0,008	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	Article no. 52 362 ...
mm	mm	mm	mm	mm	mm		mm			EUR
0,6	0,1	0,6	0,58	2	50	16	4	3,3 x DC	2	52,02 30601
0,6	0,1	0,6	0,58	3	50	16	4	5 x DC	2	52,02 40601
0,6	0,1	0,6	0,58	4	50	16	4	6,6 x DC	2	52,02 50601
1,0	0,1	1,0	0,95	2	50	16	4	2 x DC	2	49,82 31001
1,0	0,1	1,0	0,95	4	50	16	4	4 x DC	2	49,82 41001
1,0	0,1	1,0	0,95	6	50	16	4	6 x DC	2	53,79 51001
1,0	0,2	1,0	0,95	2	50	16	4	2 x DC	2	49,82 31002
1,0	0,2	1,0	0,95	4	50	16	4	4 x DC	2	49,82 41002
1,0	0,2	1,0	0,95	6	50	16	4	6 x DC	2	53,68 51002
1,0	0,3	1,0	0,95	2	50	16	4	2 x DC	2	49,82 31003
1,0	0,3	1,0	0,95	4	50	16	4	4 x DC	2	49,82 41003
1,0	0,3	1,0	0,95	6	50	16	4	6 x DC	2	53,79 51003
2,0	0,1	2,0	1,91	4	50	16	4	2 x DC	2	51,91 32001
2,0	0,1	2,0	1,91	6	50	16	4	3 x DC	2	51,91 42001
2,0	0,1	2,0	1,91	8	50	16	4	4 x DC	2	55,33 52001
2,0	0,1	2,0	1,91	10	50	16	4	5 x DC	2	55,33 62001
2,0	0,1	2,0	1,91	12	54	16	4	6 x DC	2	55,33 72001
2,0	0,2	2,0	1,91	4	50	16	4	2 x DC	2	51,91 32002
2,0	0,2	2,0	1,91	6	50	16	4	3 x DC	2	51,91 42002
2,0	0,2	2,0	1,91	8	50	16	4	4 x DC	2	55,33 52002
2,0	0,2	2,0	1,91	10	50	16	4	5 x DC	2	55,33 62002
2,0	0,2	2,0	1,91	12	54	16	4	6 x DC	2	55,33 72002
2,0	0,3	2,0	1,91	4	50	16	4	2 x DC	2	51,91 32003
2,0	0,3	2,0	1,91	6	50	16	4	3 x DC	2	51,91 42003
2,0	0,3	2,0	1,91	8	50	16	4	4 x DC	2	55,33 52003
2,0	0,3	2,0	1,91	10	50	16	4	5 x DC	2	55,33 62003
2,0	0,3	2,0	1,91	12	54	16	4	6 x DC	2	55,33 72003
2,0	0,5	2,0	1,91	4	50	16	4	2 x DC	2	51,91 32005
2,0	0,5	2,0	1,91	6	50	16	4	3 x DC	2	51,91 42005
2,0	0,5	2,0	1,91	8	50	16	4	4 x DC	2	55,33 52005
2,0	0,5	2,0	1,91	10	50	16	4	5 x DC	2	55,33 62005
2,0	0,5	2,0	1,91	12	54	16	4	6 x DC	2	55,33 72005

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

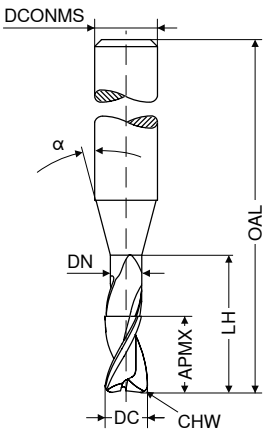
→ v_c/f_z Page 316+317

14

BlueLine – End milling cutter







Ti2000





Factory standard

HA

V1

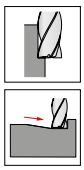
DC e8 mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 344 ... EUR	
0,5	1,5			58	12	6	0,02	2	41,01	**905**
1,0	3,0			58	12	6	0,02	2	41,01	**010**
1,5	4,0			58	12	6	0,03	2	41,01	**015**
2,0	5,0	1,8	12	58	20	6	0,03	2	41,01	**020**
2,5	6,0	2,3	13	58	20	6	0,04	2	41,01	**025**
3,0	8,0	2,8	15	58	20	6	0,04	2	41,01	**030**
3,5	8,0	3,3	15	58	20	6	0,05	2	41,01	**035**
4,0	11,0	3,8	15	58	20	6	0,05	2	41,01	**040**
5,0	13,0	4,8	21	58	20	6	0,06	2	41,01	**050**
6,0	16,0	5,8	24	58		6	0,07	2	41,01	**060**
8,0	19,0	7,8	27	64		8	0,08	2	53,79	**080**
10,0	22,0	9,8	32	73		10	0,10	2	81,99	**100**
12,0	26,0	11,8	38	84		12	0,13	2	107,40	**120**
16,0	32,0	15,7	44	93		16	0,18	2	184,10	**160**
20,0	38,0	19,7	54	104		20	0,20	2	282,20	**200**

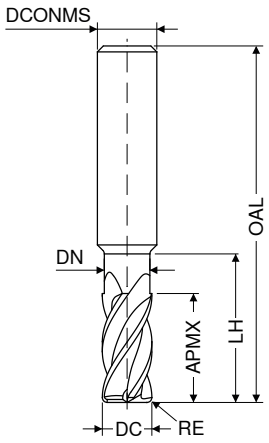
Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

→ v_c/f_z Page 314+315

BlueLine – End milling cutter with corner radius

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC













Factory standard | Factory standard

HA | HA

V1 | V1

DC e8	RE ±0,005	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 52 353 ...	EUR	Article no. 52 354 ...	EUR
mm	mm	mm	mm	mm	mm	mm					
1	0,10	1,5	0,85	10	50	3	4	31001	49,26		
1	0,10	1,5	0,85	20	75	3	4			31001	70,76
1	0,20	1,5	0,85	10	50	3	4	31002	49,60		
1	0,20	1,5	0,85	20	75	3	4			31002	70,76
2	0,20	2,5	1,80	12	50	3	4	32002	48,83		
2	0,20	2,5	1,80	25	75	3	4			32002	69,66
2	0,30	2,5	1,80	12	50	3	4	32003	48,83		
2	0,30	2,5	1,80	25	75	3	4			32003	69,66
2	0,50	2,5	1,80	12	50	3	4	32005	48,83		
2	0,50	2,5	1,80	25	75	3	4			32005	69,66
3	0,25	4,0	2,70	14	50	3	4	33002	46,40		
3	0,25	4,0	2,70	32	75	3	4			33002	66,02
3	0,30	4,0	2,70	14	50	3	4	33003	46,40		
3	0,30	4,0	2,70	32	75	3	4			33003	66,02
3	0,50	4,0	2,70	14	50	3	4	33005	46,40		
3	0,50	4,0	2,70	32	75	3	4			33005	66,02
3	1,00	4,0	2,70	14	50	3	4	33010	46,40		
3	1,00	4,0	2,70	32	75	3	4			33010	66,02
4	0,20	5,0	3,70	16	50	4	4	44002	49,82		
4	0,20	5,0	3,70	36	75	4	4			44002	71,53
4	0,25	5,0	3,70	16	50	4	4	44003	49,82		
4	0,25	5,0	3,70	36	75	4	4			44003	71,53
4	0,40	5,0	3,70	16	50	4	4	44004	49,82		
4	0,40	5,0	3,70	36	75	4	4			44004	71,53
4	0,50	5,0	3,70	16	50	4	4	44005	49,82		
4	0,50	5,0	3,70	36	75	4	4			44005	71,53
4	1,00	5,0	3,70	16	50	4	4	44010	49,82		
4	1,00	5,0	3,70	36	75	4	4			44010	71,53
5	0,25	6,0	4,60	18	54	5	4	55002	54,01		
5	0,25	6,0	4,60	40	75	5	4			55002	79,80
5	0,50	6,0	4,60	18	54	5	4	55005	54,01		
5	0,50	6,0	4,60	40	75	5	4			55005	79,80
5	1,00	6,0	4,60	18	54	5	4	55010	54,01		
5	1,00	6,0	4,60	40	75	5	4			55010	79,80
6	0,25	7,0	5,50	21	58	6	4	06002	61,16		
6	0,25	7,0	5,50	44	80	6	4			06002	86,41
6	0,50	7,0	5,50	21	58	6	4	06005	61,16		
6	0,50	7,0	5,50	44	80	6	4			06005	86,41
6	0,80	7,0	5,50	21	58	6	4	06008	61,16		
6	1,00	7,0	5,50	21	58	6	4	06010	61,16		
6	1,00	7,0	5,50	44	80	6	4			06010	86,41
6	1,50	7,0	5,50	21	58	6	4	06015	61,16		
6	1,50	7,0	5,50	44	80	6	4			06015	86,41
6	2,00	7,0	5,50	21	58	6	4	06020	61,16		
8	0,25	9,0	7,40	27	64	8	4	08002	80,57		

Steel	●	●
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

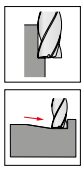
→ v_c/f_z Page 314+315

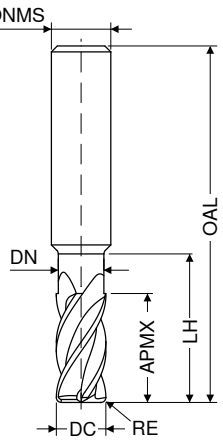
14

Continued on next page

BlueLine – End milling cutter with corner radius















Factory standard

Factory standard

HA

HA

DC e8	RE ±0,005	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 52 353 ...		V1 Article no. 52 354 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
8	0,25	9,0	7,40	54	100	8	4			117,90	08002
8	0,50	9,0	7,40	27	64	8	4	80,57	08005		
8	0,50	9,0	7,40	54	100	8	4			117,90	08005
8	0,80	9,0	7,40	27	64	8	4	80,57	08008		
8	0,80	9,0	7,40	54	100	8	4			117,90	08008
8	1,00	9,0	7,40	27	64	8	4	80,57	08010		
8	1,00	9,0	7,40	54	100	8	4			117,90	08010
8	1,50	9,0	7,40	27	64	8	4	80,57	08015		
8	1,50	9,0	7,40	54	100	8	4			117,90	08015
8	2,00	9,0	7,40	27	64	8	4	80,57	08020		
8	2,00	9,0	7,40	54	100	8	4			117,90	08020
8	2,50	9,0	7,40	27	64	8	4	80,57	08025		
8	3,00	9,0	7,40	27	64	8	4	80,57	08030		
8	3,00	9,0	7,40	54	100	8	4			117,90	08030
10	0,25	11,0	9,20	32	73	10	4	105,10	10002		
10	0,25	11,0	9,20	60	100	10	4			161,00	10002
10	0,50	11,0	9,20	32	73	10	4	105,10	10005		
10	0,50	11,0	9,20	60	100	10	4			161,00	10005
10	0,80	11,0	9,20	32	73	10	4	105,10	10008		
10	0,80	11,0	9,20	60	100	10	4			161,00	10008
10	1,00	11,0	9,20	32	73	10	4	105,10	10010		
10	1,00	11,0	9,20	60	100	10	4			161,00	10010
10	1,50	11,0	9,20	32	73	10	4	105,10	10015		
10	1,50	11,0	9,20	60	100	10	4			161,00	10015
10	2,00	11,0	9,20	32	73	10	4	105,10	10020		
10	2,00	11,0	9,20	60	100	10	4			161,00	10020
10	3,00	11,0	9,20	32	73	10	4	105,10	10030		
10	3,00	11,0	9,20	60	100	10	4			161,00	10030
10	3,50	11,0	9,20	32	73	10	4	105,10	10035		
12	0,50	12,0	11,00	38	84	12	4	142,30	12005		
12	0,50	12,0	11,00	75	120	12	4			212,80	12005
12	1,00	12,0	11,00	38	84	12	4	142,30	12010		
12	1,00	12,0	11,00	75	120	12	4			212,80	12010
12	1,50	12,0	11,00	38	84	12	4	142,30	12015		
12	1,50	12,0	11,00	75	120	12	4			212,80	12015
12	2,00	12,0	11,00	38	84	12	4	142,30	12020		
12	2,00	12,0	11,00	75	120	12	4			212,80	12020
12	3,00	12,0	11,00	38	84	12	4	142,30	12030		
12	3,00	12,0	11,00	75	120	12	4			212,80	12030
16	2,00	16,0	15,00	44	93	16	4	240,20	16020		
16	2,00	16,0	15,00	92	150	16	4			360,40	16020
16	3,00	16,0	15,00	44	93	16	4	240,20	16030		
16	3,00	16,0	15,00	92	150	16	4			360,40	16030

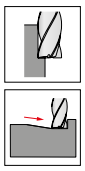
Steel	●	●
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

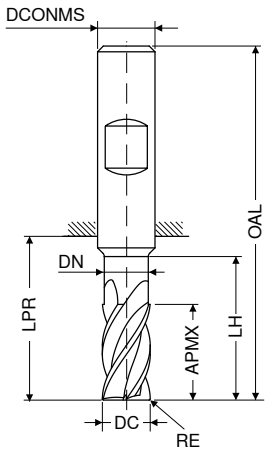
→ v_c/f_z Page 314+315

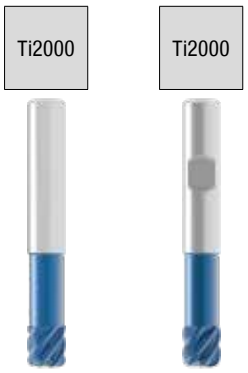
BlueLine – End milling cutter with corner radius

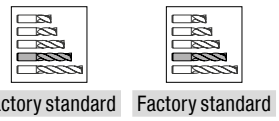
▲ with decreasing helix angle for reduced machining noise & vibration















DC e8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 52 140 ...		V1 Article no. 52 141 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3	0,3	4	2,7	14	22	50	3	4	58,31	031		
3	0,5	4	2,7	14	22	50	3	4	58,31	033		
3	1,0	4	2,7	14	22	50	3	4	58,31	034		
4	0,4	5	3,7	16	22	50	4	4	62,93	042		
4	0,5	5	3,7	16	22	50	4	4	62,93	043		
4	1,0	5	3,7	16	22	50	4	4	62,93	044		
5	0,5	6	4,6	18	26	54	5	4	66,02	053		
5	1,0	6	4,6	18	26	54	5	4	66,02	054		
6	0,5	7	5,5	21	21	57	6	6	82,33	063	82,33	063
6	1,0	7	5,5	21	21	57	6	6	82,33	064	82,33	064
6	1,5	7	5,5	21	21	57	6	6	82,33	065	82,33	065
8	0,5	9	7,4	27	27	63	8	6	108,70	083	108,70	083
8	1,0	9	7,4	27	27	63	8	6	108,70	084	108,70	084
8	1,5	9	7,4	27	27	63	8	6	108,70	085	108,70	085
8	2,0	9	7,4	27	27	63	8	6	108,70	086	108,70	086
10	0,5	11	9,2	32	32	72	10	6	140,00	103	140,00	103
10	1,0	11	9,2	32	32	72	10	6	140,00	104	140,00	104
10	1,5	11	9,2	32	32	72	10	6	140,00	105	140,00	105
10	2,0	11	9,2	32	32	72	10	6	140,00	106	140,00	106
12	0,5	12	11,0	38	38	83	12	6	189,60	123	189,60	123
12	1,0	12	11,0	38	38	83	12	6	189,60	124	189,60	124
12	1,5	12	11,0	38	38	83	12	6	189,60	125	189,60	125
12	2,0	12	11,0	38	38	83	12	6	189,60	126	189,60	126
16	1,0	16	15,0	44	45	93	16	6	321,90	161	321,90	161
16	2,0	16	15,0	44	45	93	16	6	321,90	163	321,90	163
20	1,0	20	18,5	50	54	104	20	6	453,00	201	453,00	201
20	2,5	20	18,5	50	54	104	20	6	453,00	204	453,00	204

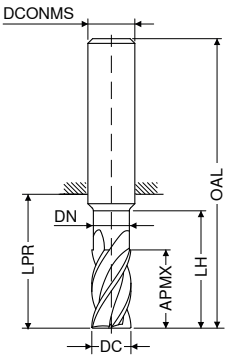
Steel	○	○
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

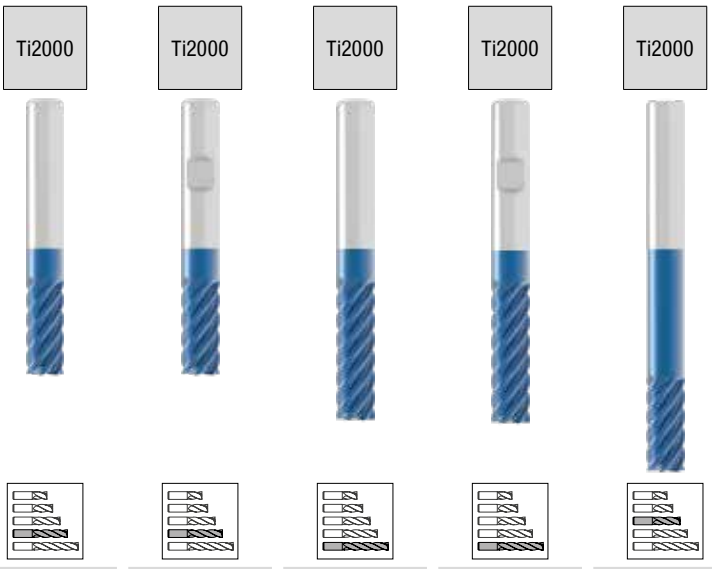
→ v_c/f_z Page 310+311

BlueLine – Finish milling cutter

▲ with decreasing helix angle for reduced machining noise & vibration

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB | HA

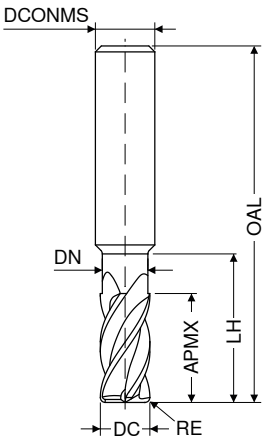
DC e8	APMX	LPR	DN	LH	OAL	DCONMS h6	ZEFP	V1 Article no. 52 133 ... EUR		V1 Article no. 52 134 ... EUR		V1 Article no. 52 135 ... EUR		V1 Article no. 52 136 ... EUR		V1 Article no. 52 348 ... EUR	
mm	mm	mm	mm	mm	mm	mm											
2	8	22			58	6	4	44,42	020	44,42	020						
3	12	22			58	6	4	44,42	030	44,42	030						
4	13	22			58	6	4	52,35	040	52,35	040						
5	15	22			58	6	6	54,23	050	54,23	050						
6	16	22			58	6	6	59,96	060	59,96	060						
6	16	44	5,8	40	80	6	6									62,82	060
6	21	29			65	6	6					74,39	060	74,39	060		
8	19	64	7,7	50	100	8	6									78,25	080
8	22	34			70	8	6	72,08	080	72,08	080						
8	28	39			75	8	6					87,84	080	87,84	080		
10	25	33			73	10	6	115,80	100	115,80	100						
10	25	60	9,7	60	100	10	6									115,80	100
10	35	45			85	10	6					131,30	100	131,30	100		
12	28	39			84	12	6	166,50	120	166,50	120						
12	30	75	11,6	60	120	12	6									152,10	120
12	45	55			100	12	6					200,60	120	200,60	120		
14	30	39			84	14	6	175,20	140	175,20	140						
14	45	55			100	14	6					232,50	140	232,50	140		
16	35	45			93	16	8	256,80	160	256,80	160						
16	40	102	15,6	100	150	16	8									314,10	160
16	50	62			110	16	8					327,30	160	327,30	160		
16	65	77			125	16	8					352,70	161	352,70	161		
18	35	45			93	18	10	271,10	180	271,10	180						
18	54	66			114	18	10					363,80	180	363,80	180		
20	40	54			104	20	10	367,00	200	367,00	200						
20	50	100	19,6	100	150	20	10									421,10	200
20	55	76			126	20	10					462,90	200	462,90	200		
20	70	85			135	20	10					565,50	201	565,50	201		

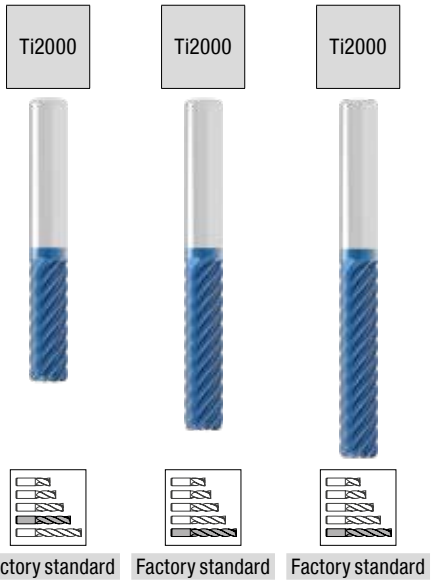
Steel	○	○	○	○	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials	●	●	●	●	●

→ v_c/f_z Page 310–315

BlueLine – Finish milling cutter with corner radius

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard

HA | HA | HA

V1 | V1 | V1

DC e8	RE +/-0,005	APMX	DN	LH	OAL	DCONMS h6	ZEFP	Article no. 52 324 ...		Article no. 52 325 ...		Article no. 52 326 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
5	0,5	15	4,8	19	58	6	6	59,84	052				
5	1,0	15	4,8	19	58	6	6	59,84	053				
6	0,5	16	5,8	20	58	6	6	60,29	062				
6	0,5	21	5,8	29	65	6	6			86,62	062		
6	1,0	16	5,8	20	58	6	6	70,10	063				
6	1,0	21	5,8	29	65	6	6			86,62	063		
8	0,5	22	7,8	26	70	8	6	70,65	082				
8	0,5	28	7,8	39	75	8	6			98,75	082		
8	1,0	22	7,8	26	70	8	6	78,04	083				
8	1,0	28	7,8	39	75	8	6			98,75	083		
10	0,5	25	9,8	31	73	10	6	113,60	102				
10	0,5	35	9,8	45	85	10	6			153,20	102		
10	1,0	25	9,8	31	73	10	6	113,60	103				
10	1,0	35	9,8	45	85	10	6			124,60	103		
10	1,5	25	9,8	31	73	10	6	131,30	104				
10	1,5	35	9,8	45	85	10	6			153,20	104		
12	0,5	28	11,8	37	84	12	6	153,20	122				
12	0,5	45	11,8	55	100	12	6			222,60	122		
12	1,0	28	11,8	37	84	12	6	153,20	123				
12	1,0	45	11,8	55	100	12	6			183,00	123		
12	1,5	28	11,8	37	84	12	6	177,50	124				
12	1,5	45	11,8	55	100	12	6			222,60	124		
14	1,0	30	13,8	37	84	14	6	189,60	143				
14	1,0	45	13,8	55	100	14	6			250,20	143		
16	1,0	35	15,8	43	93	16	8	291,00	163				
16	1,0	50	15,8	62	110	16	8			365,90	163		
16	1,0	65	15,8	77	125	16	8					391,40	163
16	2,0	35	15,8	43	93	16	8	291,00	165				
16	2,0	50	15,8	62	110	16	8			365,90	165		
16	2,0	65	15,8	77	125	16	8					391,40	165
18	1,0	35	17,8	43	93	18	10	311,90	183				
18	1,0	54	17,8	66	114	18	10			402,30	183		
20	1,0	40	19,8	52	104	20	10	414,30	203				
20	1,0	55	19,8	76	126	20	10			536,90	203		
20	1,0	70	19,8	85	135	20	10					640,30	203
20	2,0	40	19,8	52	104	20	10	414,30	205				
20	2,0	55	19,8	76	126	20	10			536,90	205		
20	2,0	70	19,8	85	135	20	10					640,30	205

Steel	○	○	○
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

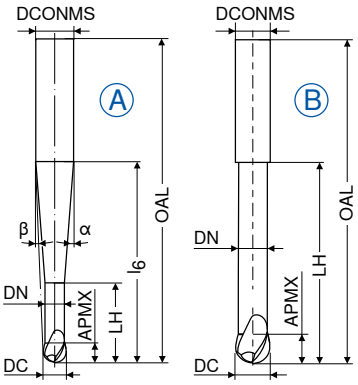
→ v_c/f_z Page 310+311

14

BlueLine – Ball Nosed Cutter

▲ Radius accuracy: ±0,005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC | Ti2000





Factory standard

HA

DC mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS $_{h5}$ mm	ZEFP	Fig.	V1 Article no. 52 302 ... EUR	
1,0	1,00	0,95	10	16,5	57	15	9,0	6	2	A	127,80	**010**
1,5	1,25	1,40	12	18,0	57	15	7,5	6	2	A	115,80	**015**
2,0	1,50	1,90	16	20,0	57	15	6,0	6	2	A	92,14	**020**
3,0	2,00	2,90	20	34,5	80	15	2,5	6	2	A	111,30	**030**
4,0	2,50	3,90	22	35,0	80	15	2,0	6	2	A	104,40	**040**
5,0	3,00	4,90	25	35,0	80	15	1,0	6	2	A	102,40	**050**
6,0	3,50	5,90	29		80	15		6	2	B	97,43	**060**

Steel	○
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

→ v_c/f_z Page 310+311

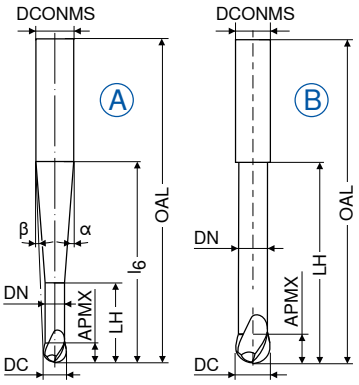
BlueLine – Ball Nosed Cutter

▲ Radius accuracy: ± 0.005 mm for Ø ≤ 6.0 mm / ± 0.01 mm for Ø > 6,0 mm
▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5°

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC

Ti2000









Factory standard

HA

V1

DC mm	Tol.	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS $_{h5}$ mm	ZEFP	Fig.	Article no. 52 303 ... EUR	
0,5	±0,01	1,0	0,45	2,0	20	57	10,0	8,5	6	2	A	138,80	**005**
1,0	±0,01	2,0	0,95	4,0	20	57	10,0	8,0	6	2	A	130,00	**010**
1,5	±0,01	2,5	1,40	7,5	20	57	12,5	7,0	6	2	A	123,50	**015**
2,0	±0,01	3,0	1,80	8,0	20	57	12,0	6,5	6	2	A	104,80	**020**
3,0	±0,01	3,5	2,80	10,0	20	57	11,5	5,0	6	2	A	99,75	**030**
4,0	±0,01	4,0	3,80	12,0	20	57	11,0	3,5	6	2	A	97,98	**040**
5,0	±0,01	5,0	4,70	14,0	20	57	10,0	2,0	6	2	A	98,20	**050**
6,0	±0,01	6,0	5,60	20,0		57			6	2	B	89,82	**060**
8,0	±0,02	7,0	7,60	25,0		63			8	2	B	122,30	**080**
10,0	±0,02	8,0	9,60	30,0		72			10	2	B	166,50	**100**
12,0	±0,02	10,0	11,50	35,0		83			12	2	B	215,00	**120**
12,0	±0,02	10,0	11,50	35,0	40	92	35,0	3,5	16	2	A	299,80	**121**
16,0	±0,02	12,0	15,50	40,0		92			16	2	B	291,00	**160**

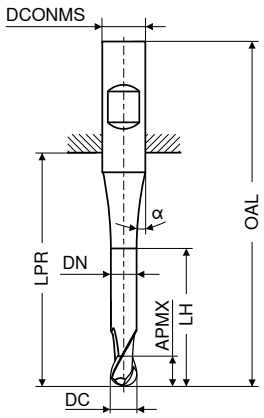
Steel	○
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

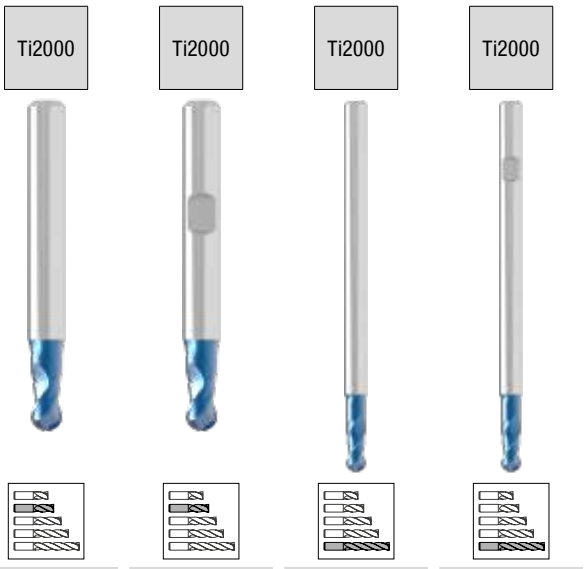
→ v_c/f_z Page 310+311

BlueLine – Ball Nosed Cutter

▲ Radius accuracy: ±0,005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC $_{f8}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	α° $_{\pm 0,5}$	ZEFP	Article no. 52 256 ...	EUR	Article no. 52 257 ...	EUR	Article no. 52 258 ...	EUR	Article no. 52 259 ...	EUR
0,10	0,2			11	10	38	3	8,0	2	98,53	**910**						
0,15	0,3			12	10	38	3	7,5	2	90,82	**915**						
0,20	0,4			12	10	38	3	7,0	2	85,20	**920**						
0,25	0,5	0,20	0,8	12	10	38	3	7,0	2	90,93	**925**						
0,30	1,0	0,25	1,3	12	10	38	3	7,0	2	85,20	**930**						
0,35	1,0	0,30	1,3	12	10	38	3	7,0	2	76,16	**935**						
0,40	1,0	0,35	1,3	12	10	38	3	7,0	2	57,09	**940**						
0,50	1,5	0,40	2,0	12	10	38	3	7,5	2	47,29	**950**						
0,50	1,5	0,40	2,0	17	18	54	6	10,5	2	50,14	**005**	50,14	**005**				
0,50	1,5	0,40	2,0	13	47	75	3	7,0	2					64,26	**950**		
0,50	1,5	0,40	2,0	17	44	80	6	10,5	2					73,62	**005**	73,62	**005**
0,60	1,5	0,50	2,0	12	10	38	3	7,0	2	51,03	**960**						
0,70	2,0	0,60	2,5	12	10	38	3	7,5	2	47,29	**970**						
0,80	2,0	0,70	2,5	13	10	38	3	7,5	2	47,29	**980**						
0,90	2,5	0,80	3,5	13	10	38	3	7,0	2	47,29	**990**						
1,00	2,0	0,90	3,0	13	22	50	3	6,0	2	50,59	**011**						
1,00	2,0	0,90	3,0	18	18	54	6	9,5	2	55,33	**106**	55,33	**010**				
1,00	3,0	0,90	4,0	14	47	75	3	6,0	2					64,26	**011**		
1,00	3,0	0,90	4,0	19	44	80	6	9,5	2					70,87	**010**	70,87	**010**
1,10	3,0	1,00	4,0	13	22	50	3	7,0	2	47,29	**911**						
1,20	3,0	1,10	4,0	13	22	50	3	7,0	2	47,29	**012**						
1,40	3,0	1,30	4,0	14	22	50	3	5,0	2	47,29	**014**						
1,50	3,0	1,40	4,0	13	22	50	3	5,5	2	50,59	**016**						
1,50	3,0	1,40	4,0	18	18	54	6	9,0	2	55,33	**156**	55,33	**015**				
1,50	4,0	1,40	6,0	13	47	75	3	7,0	2					63,48	**016**		
1,50	4,0	1,40	6,0	19	44	80	6	10,0	2					70,21	**015**	70,21	**015**
1,60	4,0	1,50	5,0	13	22	50	3	5,0	2	47,29	**916**						
1,80	4,0	1,70	5,0	13	22	50	3	5,0	2	47,29	**018**						
2,00	4,0	1,90	5,5	12	22	50	3	5,0	2	50,59	**021**						
2,00	4,0	1,90	5,5	18	18	54	6	9,0	2	55,33	**206**	55,33	**020**				
2,00	6,0	1,90	8,0	12	47	75	3	8,0	2					60,07	**021**		
2,00	6,0	1,90	8,0	20	44	80	6	11,0	2					66,02	**020**	66,02	**020**
2,50	5,0	2,30	6,5	10	22	50	3	7,0	2	47,29	**025**						
2,50	5,0	2,30	6,5	17	18	54	6	10,0	2	55,33	**026**	55,33	**026**				
2,50	8,0	2,30	10,0	14	47	75	3	5,5	2					58,97	**026**		
2,50	8,0	2,30	10,0	20	44	80	6	10,0	2					65,14	**025**	65,14	**025**
3,00	6,0	2,80	8,0		22	50	3		2	50,59	**031**						
3,00	6,0	2,80	8,0	18	18	54	6	9,0	2	55,33	**306**	55,33	**030**				
3,00	10,0	2,80	13,0		47	75	3		2					58,08	**031**		
3,00	10,0	2,80	15,0	23	44	80	6	11,0	2					64,37	**030**	64,37	**030**

Steel	○	○	○	○
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials	●	●	●	●

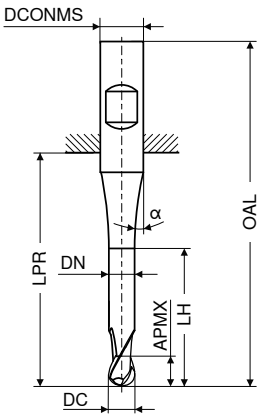
→ v_c/f_z Page 310+311

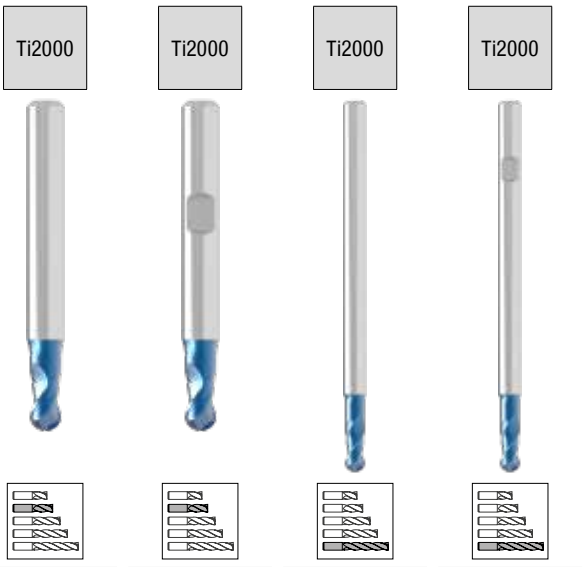
Continued on next page

BlueLine – Ball Nosed Cutter

▲ Radius accuracy: ±0,005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	α° ±0,5	ZEFP	Article no. 52 256 ... EUR		Article no. 52 257 ... EUR		Article no. 52 258 ... EUR		Article no. 52 259 ... EUR	
4,00	7,0	3,80	10,0	18	18	54	6	11,0	2	55,33	**406**	55,33	**040**				
4,00	7,0	3,80	10,0		26	54	4		2	53,24	**041**						
4,00	13,0	3,80	20,0		47	75	4		2					55,99	**041**		
4,00	13,0	3,80	18,0	23	44	80	6	12,5	2					61,61	**040**	65,24	**040**
5,00	8,0	4,80	11,0	15	18	54	6	8,0	2	55,33	**506**	55,33	**050**				
5,00	8,0	4,80	11,0		26	54	5		2	55,33	**051**						
5,00	14,0	4,80	19,0		47	75	5		2					63,04	**051**		
5,00	14,0	4,80	19,0	21	64	100	6	13,0	2					69,66	**050**	69,66	**050**
6,00	10,0	5,80	15,0		18	54	6		2	55,33	**061**	55,33	**060**				
6,00	16,0	5,80	25,0		64	100	6		2					81,78	**060**	81,78	**060**
8,00	12,0	7,80	17,0		23	59	8		2	67,24	**081**	67,24	**080**				
8,00	22,0	7,80	35,0		64	100	8		2					98,09	**080**	98,09	**080**
10,00	13,0	9,80	18,0		27	67	10		2	87,52	**101**	87,52	**100**				
10,00	25,0	9,80	40,0		60	100	10		2					129,00	**100**	129,00	**100**
12,00	16,0	11,90	21,0		28	73	12		2	124,60	**121**	124,60	**120**				
12,00	26,0	11,80	40,0		55	100	12		2					168,60	**120**	168,60	**120**
14,00	16,0	13,80	21,0		30	75	14		2	157,60	**141**	157,60	**140**				
14,00	26,0	13,80	40,0		55	100	14		2					230,40	**140**	230,40	**140**
16,00	20,0	15,80	25,0		35	83	16		2	180,80	**161**	180,80	**160**				
16,00	30,0	15,80	50,0		102	150	16		2					371,40	**160**	371,40	**160**
20,00	25,0	19,80	30,0		43	93	20		2	295,40	**201**	295,40	**200**				
20,00	40,0	19,80	60,0		100	150	20		2					453,00	**200**	453,00	**200**

Steel	○	○	○	○
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials	●	●	●	●

→ v_c/f_z Page 310+311

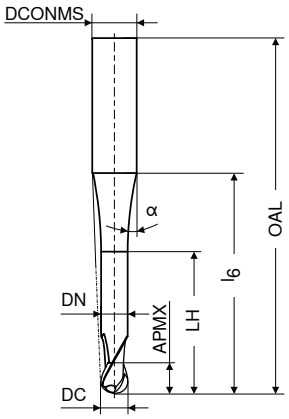
14

BlueLine – Ball Nosed Cutter

- Radius accuracy: ±0.005 mm
- for Ø ≤ 5.0 mm, angle tolerance α: ±0.5°

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC





Ti2000





Factory standard

HA

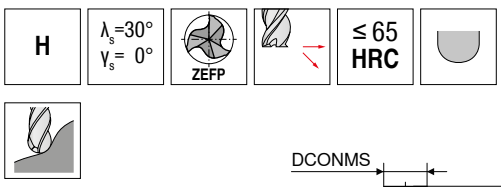
DC $_{f8}$ mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	DCONMS $_{h6}$ mm	ZEFP	V1 Article no. 52 352 ...	EUR
0,6	0,8	0,55	1,4	27	75	1,5	3	2	70,87	**906**
0,8	1,0	0,75	1,6	27	75	1,5	3	2	68,44	**908**
1,0	1,2	0,95	2,0	27	75	1,5	3	2	67,12	**310**
1,2	1,4	1,15	2,4	27	75	1,5	3	2	66,47	**312**
1,5	1,8	1,45	3,0	27	75	1,5	3	2	64,58	**315**
2,0	2,4	1,95	4,0	27	75	1,5	3	2	64,03	**320**
3,0	4,0	2,80	12,0	40	80	1,5	6	2	102,50	**030**
4,0	5,0	3,80	16,0	40	80	1,5	6	2	101,50	**040**
5,0	6,0	4,80	20,0	40	80	1,5	6	2	101,10	**050**
6,0	6,0	5,80	25,0	50	100	1,5	8	2	138,80	**060**
8,0	7,0	7,80	32,0	60	120	1,5	10	2	188,60	**080**
10,0	9,0	9,80	40,0	80	160	1,5	12	2	294,30	**100**
12,0	11,0	11,80	50,0	100	200	1,5	16	2	503,70	**120**

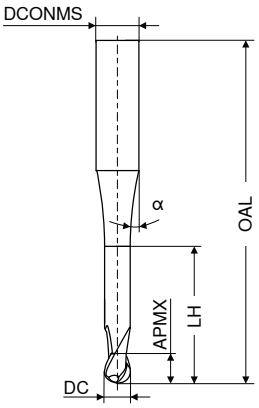
Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

→ v_c/f_z Page 314

BlueLine – Ball nosed cutter

▲ Radius accuracy: ±0.005 mm











Factory standard



DC f8 mm	APMX mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	V1 Article no. 52 355 ... EUR	
3	8	11	65	12	6	3	61,29	**030**
4	8	11	75	12	6	3	63,04	**040**
5	10	13	75	12	6	3	63,04	**050**
6	12		100		6	3	65,14	**060**
8	14		100		8	3	88,72	**080**
10	18		100		10	3	112,40	**100**
12	22		120		12	3	146,50	**120**

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

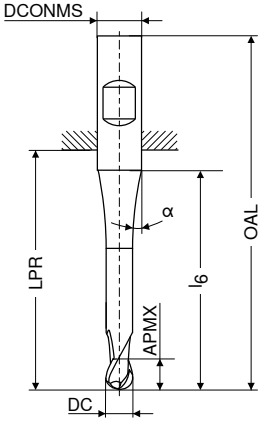
→ v_c/f_z Page 314

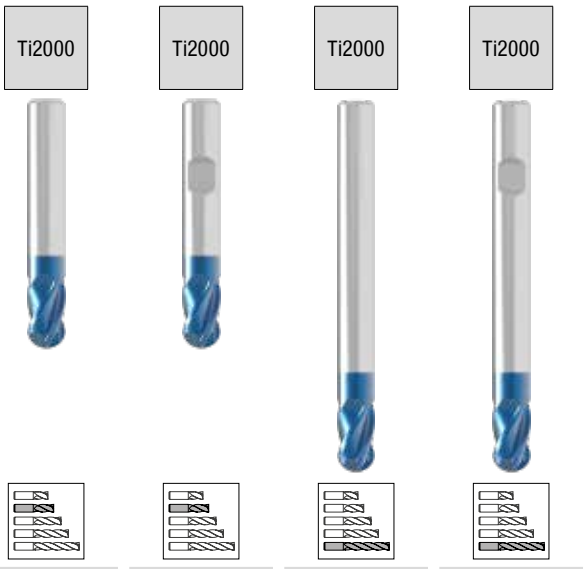
BlueLine – Ball nosed cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC







Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

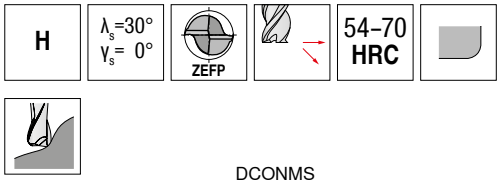
DC f8 mm	APMX mm	l_6 mm	LPR mm	OAL mm	α° ±1°	DCONMS h6 mm	ZEFP	V1 Article no. 52 404 ... EUR		V1 Article no. 52 405 ... EUR		V1 Article no. 52 404 ... EUR		V1 Article no. 52 405 ... EUR	
2,0	4	10,0	22	50	8	3	4	47,83	020						
2,0	4	16,0	18	54	12	6	4	56,76	021	56,76	021				
2,0	4	10,0	47	75	8	3	4					62,93	022		
2,0	4	16,0	44	80	12	6	4					82,33	023	82,33	023
2,5	5	16,0	18	54	12	6	4	56,76	025	56,76	025				
2,5	5	16,0	44	80	12	6	4					77,49	026	77,49	026
3,0	5		22	50		3	4	51,03	030						
3,0	5	14,0	18	54	12	6	4	55,55	031	55,55	031				
3,0	5		47	75		3	4					64,15	032		
3,0	5	14,0	44	80	12	6	4					80,35	033	80,35	033
4,0	8	15,0	18	54	12	6	4	55,55	041	55,55	041				
4,0	8		26	54		4	4	52,90	040						
4,0	8		47	75		4	4					73,29	042		
4,0	8	15,0	44	80	12	6	4					79,80	043	79,80	043
5,0	9	13,5	18	54	12	6	4	54,89	051	54,89	051				
5,0	9		26	54		5	4	52,69	050						
5,0	9		47	75		5	4					73,94	052		
5,0	9	13,5	64	100	12	6	4					77,81	053	77,81	053
6,0	10		18	54		6	4	54,78	060	54,78	060				
6,0	10		64	100		6	4					76,60	062	76,60	062
7,0	12	15,0	23	59	12	8	4	74,39	070	74,39	070				
8,0	12		23	59		8	4	68,22	080	68,22	080				
8,0	12		64	100		8	4					97,54	082	97,54	082
9,0	14	17,0	27	67	12	10	4	99,53	090	99,53	090				
10,0	14	16,0	27	67		10	4	92,25	100	92,25	100				
10,0	14		60	100		10	4					126,80	102	126,80	102
12,0	16		29	74		12	4	124,60	120	124,60	120				
12,0	16		55	100		12	4					162,00	122	162,00	122
14,0	18		30	75		14	4	155,50	140	155,50	140				
14,0	18	20,0	55	100		14	4					202,80	142	202,80	142
16,0	22	24,0	35	83		16	4	195,10	160	195,10	160				
16,0	22	24,0	102	150		16	4					315,20	162	315,20	162
20,0	26	28,0	43	93		20	4	297,50	200	297,50	200				
20,0	26	28,0	100	150		20	4					435,30	202	435,30	202

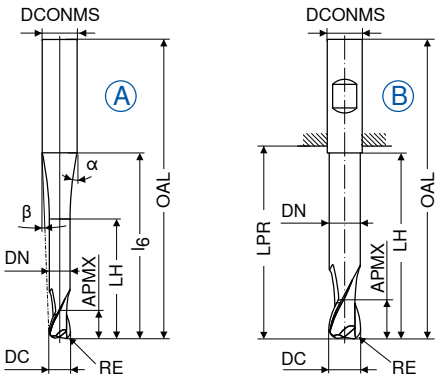
Steel	○	○	○	○
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials	●	●	●	●

→ v_c/f_z Page 310+311

BlueLine – Torus cutter

▲ Radius accuracy: ±0,005 mm for Ø ≤ 6,0 mm / ±0,01 mm for Ø > 6,0 mm
▲ or Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5 °





LPR with Shank DIN 6535 HB









Factory standard

Factory standard

HA

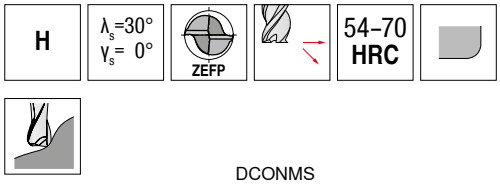
HB

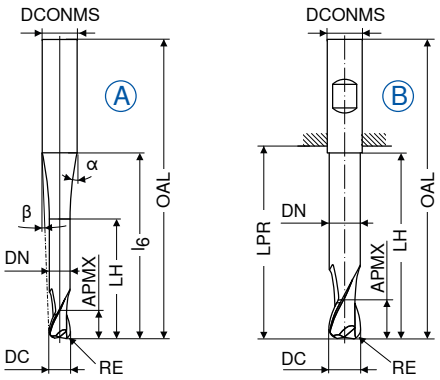
DC ±0,01	RE	APMX	DN	LH	LPR	l6	OAL	α° ±0,5	β°	DCONMS h5	ZEFP	Fig.	V1 Article no. 52 305 ...		V1 Article no. 52 305 ...	
mm	mm	mm	mm	mm	mm	mm	mm			mm			EUR		EUR	
1,0	0,2	1,00	0,95	10	21	16,5	57	23,0	9,0	6	2	A	138,80	**010**		
1,5	0,3	1,25	1,40	12	21	18,0	57	21,0	7,5	6	2	A	125,70	**015**		
2,0	0,4	1,50	1,90	16	21	20,0	57	25,0	6,0	6	2	A	102,20	**020**		
3,0	0,5	2,00	2,90	20	44	34,5	80	6,0	2,5	6	2	A	121,30	**030**		
4,0	0,6	2,50	3,90	22	44	35,0	80	4,5	2,0	6	2	A	114,60	**040**		
5,0	0,8	3,00	4,90	25	44	35,0	80	3,5	1,0	6	2	A	112,40	**050**		
6,0	1,0	3,50	5,90	29	44		80			6	2	B			105,60	**060**
Steel														○		○
Stainless steel																
Cast iron																
Non ferrous metals																
Heat resistant alloys																
hardened materials														●		●

→ v_c/f_z Page 312+313

BlueLine – Torus cutter

▲ Radius accuracy: ±0,005 mm for Ø ≤ 6,0 mm / ±0,01 mm for Ø > 6,0 mm
▲ or Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5 °













Factory standard

Factory standard

LPR with Shank DIN 6535 HB

HA

HB

DC	Tol.	RE	APMX	DN	LH	LPR	l_6	OAL	α°	β°	DCONMS $_{h5}$	ZEFP	Fig.	V1 Article no. 52 304 ...		V1 Article no. 52 304 ...	
mm		mm	mm	mm	mm	mm	mm	mm			mm			EUR		EUR	
0,5	±0,01	0,10	1,0	0,45	2,0	21	20	57	10,0	8,5	6	2	A	144,40	**005**		
1,0	±0,01	0,25	2,0	0,95	4,0	21	20	57	10,0	8,0	6	2	A	142,30	**010**		
1,5	±0,01	0,30	2,5	1,40	7,5	21	20	57	12,5	7,0	6	2	A	130,00	**015**		
2,0	±0,01	0,50	3,0	1,80	8,0	21	20	57	12,0	6,5	6	2	A	103,60	**020**		
3,0	±0,01	0,50	3,5	2,80	10,0	21	20	57	11,5	5,0	6	2	A	101,10	**030**		
4,0	±0,01	1,00	4,0	3,80	12,0	21	20	57	11,0	3,5	6	2	A	97,98	**040**		
5,0	±0,01	1,50	5,0	4,70	14,0	21	20	57	10,0	2,0	6	2	A	101,90	**050**		
6,0	±0,01	2,00	6,0	5,60	20,0	21		57			6	2	B			98,75	**060**
8,0	±0,02	2,00	7,0	7,60	25,0	27		63			8	2	B			127,80	**080**
10,0	±0,02	3,00	8,0	9,60	30,0	32		72			10	2	B			177,50	**100**
12,0	±0,02	4,00	10,0	11,50	35,0	38		83			12	2	B			227,00	**120**
12,0	±0,02	4,00	10,0	11,50	35,0	44	40	92	37,0	3,5	16	2	A	328,50	**121**		
16,0	±0,02	5,00	12,0	15,50	40,0	44		92			16	2	B			321,90	**160**

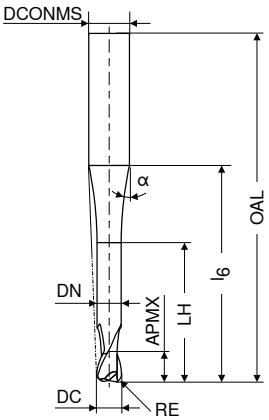
Steel	○	○
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

→ v_c/f_z Page 312+313

BlueLine – Torus cutter

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC

Ti2000





Factory standard

HA

V1

DC $_{e8}$ mm	RE $_{\pm 0,01}$ mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	DCONMS $_{h5}$ mm	ZEFP	Article no. 52 361 ... EUR	
0,8	0,08	1,0	0,75	1,6	27	75	1,5	3	2	65,79	**90801**
1,0	0,10	1,2	0,95	2,0	27	75	1,5	3	2	67,24	**31001**
1,0	0,25	2,0	0,85	4,0	40	80	1,5	6	2	106,00	**01002**
1,2	0,12	1,4	1,15	2,4	27	75	1,5	3	2	66,47	**31201**
1,5	0,15	1,8	1,45	3,0	27	75	1,5	3	2	64,58	**31501**
2,0	0,20	2,4	1,95	4,0	27	75	1,5	3	2	64,03	**32002**
2,0	0,50	2,0	1,80	8,0	40	80	1,5	6	2	102,50	**02005**
3,0	0,30	3,6	2,95	6,0	27	75	1,5	4	2	68,44	**43003**
3,0	0,50	2,0	2,80	12,0	40	80	1,5	6	2	102,50	**03005**
3,0	1,00	2,0	2,80	12,0	40	80	1,5	6	2	102,50	**03010**
4,0	1,00	3,0	3,80	16,0	40	80	1,5	6	2	102,50	**04010**
6,0	1,00	4,0	5,80	25,0	50	100	1,5	8	2	138,80	**06010**
6,0	2,00	4,0	5,80	25,0	50	100	1,5	8	2	138,80	**06020**
8,0	1,00	4,0	7,80	32,0	60	120	1,5	10	2	188,60	**08010**
8,0	2,00	4,0	7,80	32,0	60	120	1,5	10	2	188,60	**08020**
10,0	1,50	6,0	9,80	40,0	80	160	1,5	12	2	294,30	**10015**
12,0	1,50	8,0	11,80	50,0	100	200	1,5	16	2	508,10	**12015**

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

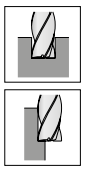
→ v_c/f_z Page 314+315

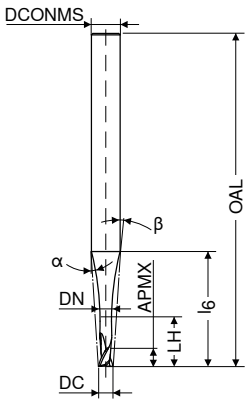
14

Micro-end milling cutter

▲ T_x = maximum engagement depth









Factory standard | Factory standard

HA | HA

DC	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS $_{h5}$	T_x	ZEFP	V1 Article no. 52 802 ...		V1 Article no. 52 802 ...	
mm	mm	mm	mm	mm	mm			mm			EUR		EUR	
0,2	0,12	0,16	0,44	5,7	38	15,0	14	3	2,2 x DC	2	49,71	**021**		
0,2	0,20	0,16	1,00	6,4	38	15,0	13	3	5 x DC	2	49,71	**023**		
0,2	0,20	0,16	2,00	9,2	38	15,0	9	3	10 x DC	2	49,71	**025**		
0,2	0,20	0,16	0,44	5,7	43	15,0	14	3	2,2 x DC	2			49,71	**022**
0,2	0,20	0,16	1,00	6,4	43	15,0	13	3	5 x DC	2			49,71	**024**
0,2	0,20	0,16	2,00	9,2	43	15,0	9	3	10 x DC	2			49,71	**026**
0,5	0,30	0,40	1,10	5,8	38	15,0	13	3	2,2 x DC	2	38,14	**051**		
0,5	0,50	0,40	2,50	7,8	38	15,0	10	3	5 x DC	2	38,14	**053**		
0,5	0,50	0,40	5,00	10,7	38	13,0	7	3	10 x DC	2	38,14	**055**		
0,5	0,50	0,40	1,10	5,8	43	15,0	13	3	2,2 x DC	2			38,14	**052**
0,5	0,50	0,40	2,50	7,8	43	15,0	10	3	5 x DC	2			38,14	**054**
0,5	0,50	0,40	5,00	14,5	43	13,0	5	3	10 x DC	2			38,14	**056**
0,8	0,48	0,64	1,76	5,9	38	15,0	11	3	2,2 x DC	2	43,98	**081**		
0,8	0,80	0,64	4,00	9,0	38	15,0	7	3	5 x DC	2	43,98	**083**		
0,8	0,80	0,64	8,00	13,5	38	12,0	5	3	10 x DC	2	43,98	**085**		
0,8	0,80	0,64	1,76	5,9	43	15,0	11	3	2,2 x DC	2			43,98	**082**
0,8	0,80	0,64	4,00	9,0	43	15,0	7	3	5 x DC	2			43,98	**084**
0,8	0,80	0,64	8,00	15,5	43	9,8	5	3	10 x DC	2			43,98	**086**
1,0	0,60	0,80	2,20	5,9	38	15,0	10	3	2,2 x DC	2	36,59	**101**		
1,0	1,00	0,80	2,20	5,9	43	15,0	10	3	2,2 x DC	2			36,59	**102**
1,0	1,00	0,80	5,00	9,7	43	15,0	6	3	5 x DC	2	36,59	**103**		
1,0	1,00	0,80	10,00	15,3	43	11,0	4	3	10 x DC	2	37,69	**105**		
1,0	1,00	0,80	5,00	9,7	50	15,0	6	3	5 x DC	2			36,59	**104**
1,0	1,00	0,80	10,00	20,6	50	8,5	3	3	10 x DC	2			37,69	**106**
1,5	0,90	1,20	3,30	6,1	38	15,0	8	3	2,2 x DC	2	39,46	**151**		
1,5	1,50	1,20	3,30	6,1	43	15,0	8	3	2,2 x DC	2			39,46	**152**
1,5	1,50	1,20	7,50	11,8	43	14,0	4	3	5 x DC	2	39,46	**153**		
1,5	1,50	1,20	15,00	18,1	43	14,6	3	3	10 x DC	2	42,11	**155**		
1,5	1,50	1,20	7,50	11,8	50	14,0	4	3	5 x DC	2			39,46	**154**
1,5	1,50	1,20	15,00	22,0	50	6,2	2	3	10 x DC	2			42,11	**156**
1,8	1,08	1,44	3,96	6,2	38	15,0	6	3	2,2 x DC	2	39,46	**181**		
1,8	1,80	1,44	3,96	6,2	43	15,0	6	3	2,2 x DC	2			39,46	**182**
1,8	1,80	1,44	9,00	12,9	43	12,0	3	3	5 x DC	2	39,90	**183**		
1,8	1,80	1,44	18,00	20,0	43	19,8	2	3	10 x DC	2	44,53	**185**		
1,8	1,80	1,44	9,00	12,9	50	12,0	3	3	5 x DC	2			39,90	**184**
1,8	1,80	1,44	18,00	22,0	50	5,3	2	3	10 x DC	2			44,53	**186**
2,0	1,20	1,60	4,40	11,9	50	15,0	10	6	2,2 x DC	2	39,46	**201**		
2,0	2,00	1,60	10,00	19,7	50	15,0	6	6	5 x DC	2	39,90	**203**		
2,0	2,00	1,60	20,00	25,0	50	22,1	5	6	10 x DC	2	44,53	**205**		
2,0	2,00	1,60	4,40	11,9	57	15,0	10	6	2,2 x DC	2			39,46	**202**
2,0	2,00	1,60	10,00	19,7	57	15,0	6	6	5 x DC	2			39,90	**204**
2,0	2,00	1,60	20,00	29,0	57	7,8	4	6	10 x DC	2			44,53	**206**

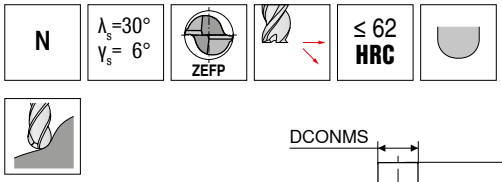
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials	●	●

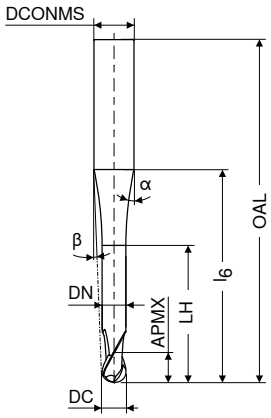
→ v_c/f_z Page 318–325

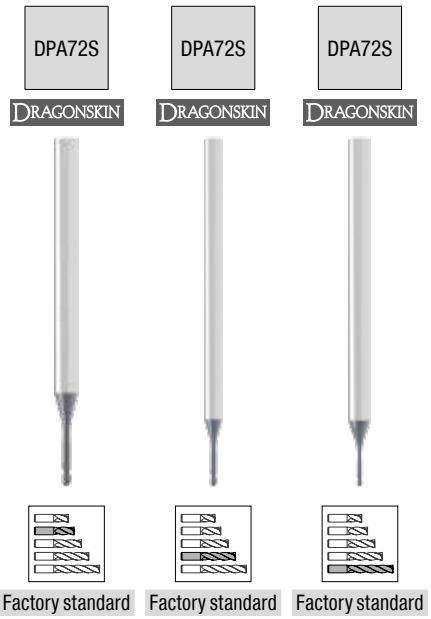
Use the Micro mills on machines with the highest accuracy and good stability.

Micro-ball nosed cutter

▲ T_x = maximum engagement depth













DC ±0,01	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 804 ...		V1 Article no. 52 804 ...		V1 Article no. 52 804 ...	
mm	mm	mm	mm	mm	mm			mm			EUR		EUR		EUR	
0,2	0,12	0,16	0,44	5,7	38	15,0	14	3	2,2 x DC	2	55,55	021				
0,2	0,20	0,16	1,00	6,4	38	15,0	13	3	5 x DC	2	55,55	024				
0,2	0,20	0,16	2,00	9,2	38	15,0	9	3	10 x DC	2	55,55	027				
0,2	0,12	0,16	0,44	5,7	50	15,0	14	3	2,2 x DC	2			55,55	022		
0,2	0,20	0,16	1,00	6,4	50	15,0	13	3	5 x DC	2			55,55	025		
0,2	0,20	0,16	2,00	9,2	50	15,0	9	3	10 x DC	2			55,55	028		
0,2	0,12	0,16	0,44	11,3	80	15,0	15	6	2,2 x DC	2					55,55	023
0,2	0,20	0,16	1,00	12,0	80	15,0	14	6	5 x DC	2					55,55	026
0,2	0,20	0,16	2,00	14,8	80	15,0	12	6	10 x DC	2					55,55	029
0,5	0,30	0,40	1,10	5,8	38	15,0	13	3	2,2 x DC	2	43,32	051				
0,5	0,50	0,40	2,50	7,8	38	15,0	10	3	5 x DC	2	43,32	054				
0,5	0,50	0,40	5,00	10,7	38	13,0	7	3	10 x DC	2	43,32	057				
0,5	0,30	0,40	1,10	5,8	50	15,0	13	3	2,2 x DC	2			43,32	052		
0,5	0,50	0,40	2,50	7,8	50	15,0	10	3	5 x DC	2			43,32	055		
0,5	0,50	0,40	5,00	14,5	50	13,0	5	3	10 x DC	2			43,32	058		
0,5	0,30	0,40	1,10	11,4	80	15,0	14	6	2,2 x DC	2					43,32	053
0,5	0,50	0,40	2,50	13,4	80	15,0	12	6	5 x DC	2					43,32	056
0,5	0,50	0,40	5,00	20,2	80	15,0	8	6	10 x DC	2					43,32	059
0,8	0,48	0,64	1,76	5,9	38	15,0	11	3	2,2 x DC	2	48,93	081				
0,8	0,80	0,64	4,00	9,0	38	15,0	7	3	5 x DC	2	48,93	084				
0,8	0,80	0,64	8,00	10,5	38	8,2	6	3	10 x DC	2	49,38	087				
0,8	0,48	0,64	1,76	5,9	50	15,0	11	3	2,2 x DC	2			48,93	082		
0,8	0,80	0,64	4,00	9,0	50	15,0	7	3	5 x DC	2			48,93	085		
0,8	0,80	0,64	8,00	18,7	50	9,8	4	3	10 x DC	2			49,38	088		
0,8	0,48	0,64	1,76	11,5	80	15,0	13	6	2,2 x DC	2					48,93	083
0,8	0,80	0,64	4,00	14,6	80	15,0	11	6	5 x DC	2					48,93	086
0,8	0,80	0,64	8,00	25,9	80	14,8	6	6	10 x DC	2					49,38	089
1,0	0,60	0,80	2,20	7,8	43	15,0	11	4	2,2 x DC	2	41,56	101				
1,0	1,00	0,80	5,00	11,6	43	15,0	8	4	5 x DC	2	41,56	104				
1,0	1,00	0,80	10,00	18,3	43	8,0	5	4	10 x DC	2	44,64	107				
1,0	0,60	0,80	2,20	7,8	60	15,0	11	4	2,2 x DC	2			41,56	102		
1,0	1,00	0,80	5,00	11,6	60	15,0	8	4	5 x DC	2			41,56	105		
1,0	1,00	0,80	10,00	23,7	60	10,2	4	4	10 x DC	2			44,64	108		
1,0	0,60	0,80	2,20	11,5	80	15,0	13	6	2,2 x DC	2					41,56	103
1,0	1,00	0,80	5,00	15,3	80	15,0	10	6	5 x DC	2					41,56	106
1,0	1,00	0,80	10,00	28,7	80	13,0	5	6	10 x DC	2					44,64	109
1,2	0,72	0,96	2,64	7,9	43	15,0	11	4	2,2 x DC	2	46,06	121				
1,2	1,20	0,96	6,00	12,4	43	15,0	7	4	5 x DC	2	46,06	124				
1,2	1,20	0,96	12,00	18,2	43	9,3	5	4	10 x DC	2	47,83	127				
1,2	0,72	0,96	2,64	7,9	60	15,0	11	4	2,2 x DC	2			46,06	122		
1,2	1,20	0,96	6,00	12,4	60	15,0	7	4	5 x DC	2			46,06	125		
1,2	1,20	0,96	12,00	26,1	60	9,1	4	4	10 x DC	2			47,83	128		

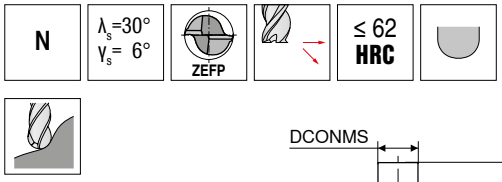
Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials	●	●	●

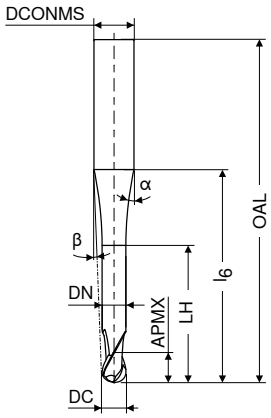
→ v_c/f_z Page 318–325

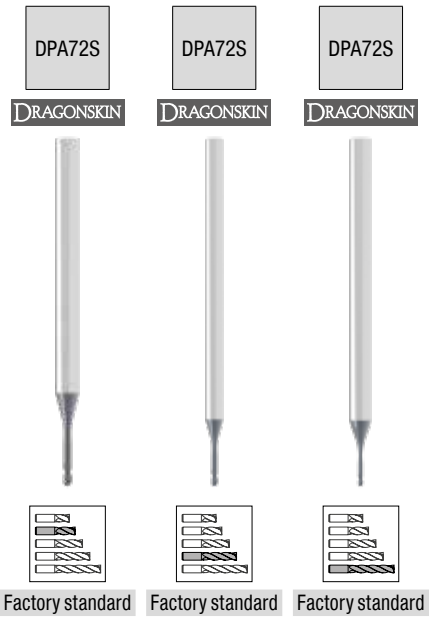
Use the Micro mills on machines with the highest accuracy and good stability.

Micro-ball nosed cutter

▲ T_x = maximum engagement depth









DC ±0,01	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 804 ...	EUR	V1 Article no. 52 804 ...	EUR	V1 Article no. 52 804 ...	EUR
mm	mm	mm	mm	mm	mm			mm								
1,2	0,72	0,96	2,64	11,6	80	15,0	12	6	2,2 x DC	2					46,06	123
1,2	1,20	0,96	6,00	16,2	80	15,0	9	6	5 x DC	2					46,06	126
1,2	1,20	0,96	12,00	31,8	80	11,7	5	6	10 x DC	2					47,83	129
1,5	0,90	1,20	3,30	8,0	43	15,0	9	4	2,2 x DC	2	43,43	151				
1,5	1,50	1,20	7,50	13,7	43	15,0	6	4	5 x DC	2	45,96	154				
1,5	1,50	1,20	15,00	18,1	43	13,5	4	4	10 x DC	2	45,96	157				
1,5	0,90	1,20	3,30	8,0	60	15,0	9	4	2,2 x DC	2			43,43	152		
1,5	1,50	1,20	7,50	13,7	60	15,0	6	4	5 x DC	2			45,96	155		
1,5	1,50	1,20	15,00	28,0	60	7,8	3	4	10 x DC	2			45,96	158		
1,5	0,90	1,20	3,30	11,7	80	15,0	11	6	2,2 x DC	2					43,43	153
1,5	1,50	1,20	7,50	17,4	80	15,0	8	6	5 x DC	2					45,96	156
1,5	1,50	1,20	15,00	35,8	80	10,2	4	6	10 x DC	2					45,96	159
1,8	1,08	1,44	3,96	8,1	43	15,0	8	4	2,2 x DC	2	45,96	181				
1,8	1,80	1,44	9,00	15,0	43	15,0	5	4	5 x DC	2	45,96	184				
1,8	1,80	1,44	18,00	19,5	43	31,1	4	4	10 x DC	2	47,83	187				
1,8	1,08	1,44	3,96	8,1	60	15,0	8	4	2,2 x DC	2			45,96	182		
1,8	1,80	1,44	9,00	15,0	60	15,0	5	4	5 x DC	2			45,96	185		
1,8	1,80	1,44	18,00	31,9	60	6,8	2	4	10 x DC	2			47,83	188		
1,8	1,08	1,44	3,96	11,8	80	15,0	11	6	2,2 x DC	2					45,96	183
1,8	1,80	1,44	9,00	18,7	80	15,0	7	6	5 x DC	2					45,96	186
1,8	1,80	1,44	18,00	39,3	80	9,1	4	6	10 x DC	2					47,83	189
2,0	1,20	1,60	4,40	11,9	57	15,0	10	6	2,2 x DC	2	43,32	201				
2,0	2,00	1,60	10,00	19,7	57	15,0	6	6	5 x DC	2	45,96	204				
2,0	2,00	1,60	20,00	32,0	57	9,5	4	6	10 x DC	2	45,96	207				
2,0	1,20	1,60	4,40	11,9	70	15,0	10	6	2,2 x DC	2			43,32	202		
2,0	2,00	1,60	10,00	19,7	70	15,0	6	6	5 x DC	2			45,96	205		
2,0	2,00	1,60	20,00	41,4	70	8,5	3	6	10 x DC	2			45,96	208		
2,0	1,20	1,60	4,40	11,9	80	15,0	10	6	2,2 x DC	2					43,32	203
2,0	2,00	1,60	10,00	19,7	80	15,0	6	6	5 x DC	2					45,96	206
2,0	2,00	1,60	20,00	41,4	80	8,5	3	6	10 x DC	2					45,96	209

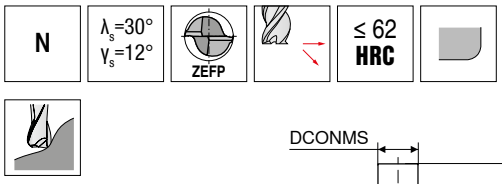
Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials	●	●	●

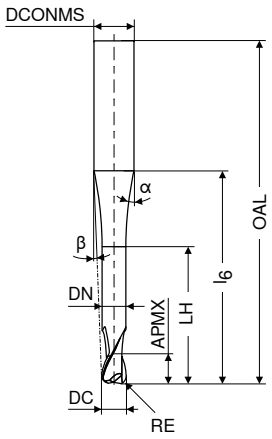
→ v_c/f_z Page 318–325

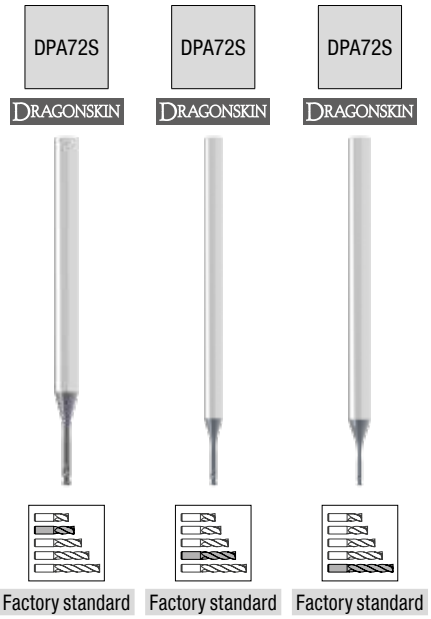
Use the Micro mills on machines with the highest accuracy and good stability.

Micro-torus cutter

▲ T_x = maximum engagement depth







DC ±0,01	RE ±0,005	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 806 ...		V1 Article no. 52 806 ...		V1 Article no. 52 806 ...	
mm	mm	mm	mm	mm	mm	mm			mm			EUR		EUR		EUR	
0,5	0,1	0,3	0,4	1,1	5,8	38	15,0	13	3	2,2 x DC	2	44,19	**051**				
0,5	0,1	0,5	0,4	2,5	7,8	38	15,0	10	3	5 x DC	2	44,19	**054**				
0,5	0,1	0,5	0,4	5,0	10,7	38	13,0	7	3	10 x DC	2	44,19	**057**				
0,5	0,1	0,3	0,4	1,1	5,8	50	15,0	13	3	2,2 x DC	2			44,19	**052**		
0,5	0,1	0,5	0,4	2,5	7,8	50	15,0	10	3	5 x DC	2			44,19	**055**		
0,5	0,1	0,5	0,4	5,0	14,5	50	13,0	5	3	10 x DC	2			44,19	**058**		
0,5	0,1	0,3	0,4	1,1	11,4	80	15,0	14	6	2,2 x DC	2					44,19	**053**
0,5	0,1	0,5	0,4	2,5	13,4	80	15,0	12	6	5 x DC	2					44,19	**056**
0,5	0,1	0,5	0,4	5,0	20,2	80	15,0	8	6	10 x DC	2					44,19	**059**
1,0	0,2	0,6	0,8	2,2	7,8	43	15,0	11	4	2,2 x DC	2	42,21	**101**				
1,0	0,2	1,0	0,8	5,0	11,6	43	15,0	8	4	5 x DC	2	45,51	**104**				
1,0	0,2	1,0	0,8	10,0	18,3	43	8,0	5	4	10 x DC	2	45,51	**107**				
1,0	0,2	0,6	0,8	2,2	7,8	60	15,0	11	4	2,2 x DC	2			42,21	**102**		
1,0	0,2	1,0	0,8	5,0	11,6	60	15,0	8	4	5 x DC	2			45,51	**105**		
1,0	0,2	1,0	0,8	10,0	23,7	60	10,2	4	4	10 x DC	2			45,51	**108**		
1,0	0,2	0,6	0,8	2,2	11,5	80	15,0	13	6	2,2 x DC	2					42,21	**103**
1,0	0,2	1,0	0,8	5,0	15,3	80	15,0	10	6	5 x DC	2					45,51	**106**
1,0	0,2	1,0	0,8	10,0	28,7	80	13,0	5	6	10 x DC	2					45,51	**109**
1,5	0,3	0,9	1,2	3,3	8,0	43	15,0	9	4	2,2 x DC	2	44,30	**151**				
1,5	0,3	1,5	1,2	7,5	13,7	43	15,0	6	4	5 x DC	2	46,96	**154**				
1,5	0,3	1,5	1,2	15,0	18,1	43	13,5	4	4	10 x DC	2	46,96	**157**				
1,5	0,3	0,9	1,2	3,3	8,0	60	15,0	9	4	2,2 x DC	2			44,30	**152**		
1,5	0,3	1,5	1,2	7,5	13,7	60	15,0	6	4	5 x DC	2			46,96	**155**		
1,5	0,3	1,5	1,2	15,0	29,2	60	7,8	3	4	10 x DC	2			46,96	**158**		
1,5	0,3	0,9	1,2	3,3	11,7	80	15,0	11	6	2,2 x DC	2					44,30	**153**
1,5	0,3	1,5	1,2	7,5	17,4	80	15,0	8	6	5 x DC	2					46,96	**156**
1,5	0,3	1,5	1,2	15,0	35,8	80	10,2	4	6	10 x DC	2					46,96	**159**
2,0	0,5	1,2	1,6	4,4	11,9	57	15,0	10	6	2,2 x DC	2	44,19	**201**				
2,0	0,5	2,0	1,6	10,0	19,7	57	15,0	6	6	5 x DC	2	46,96	**204**				
2,0	0,5	2,0	1,6	20,0	32,0	57	9,5	4	6	10 x DC	2	46,96	**207**				
2,0	0,5	1,2	1,6	4,4	11,9	70	15,0	10	6	2,2 x DC	2			44,19	**202**		
2,0	0,5	2,0	1,6	10,0	19,7	70	15,0	6	6	5 x DC	2			46,96	**205**		
2,0	0,5	2,0	1,6	20,0	41,4	70	8,5	3	6	10 x DC	2			46,96	**208**		
2,0	0,5	1,2	1,6	4,4	11,9	80	15,0	10	6	2,2 x DC	2					44,19	**203**
2,0	0,5	2,0	1,6	10,0	19,7	80	15,0	6	6	5 x DC	2					46,96	**206**
2,0	0,5	2,0	1,6	20,0	41,4	80	8,5	3	6	10 x DC	2					46,96	**209**

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials	●	●	●

→ v_c/f_z Page 324+325

Use the Micro mills on machines with the highest accuracy and good stability.

14

MultiChange Programme Overview

The highly stable "MultiChange" exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Solid carbide drilling



▲ Solid Carbide NC Spot Drill
◁ 90°, 120°, 142° / Ø 8, 10, 12, 16, 20 mm / ZEFP* 2

→ **Chapter 2, Solid carbide drills**

*ZEFP = Number of teeth

Reaming and Countersinking





▲ Through hole reamers
Ø 8–30.2 mm incl. special diameters / ZEFP* 4-6

▲ Blind hold reamers
Ø 12.2–30.2 mm incl. special diameters / ZEFP* 6

→ **Chapter 4, Reaming and countersinking**

*ZEFP = Number of teeth

Tool holder



▲ Steel Holder Extra Short
Cylindrical / Tapered 87°
Length 60–90 mm
for KLG 8, 10, 12, 16, 20 mm



▲ Short Holder Steel/Solid Carbide
cylindrical
Length 85–120 mm
for KLG 8, 10, 12, 16, 20 mm



▲ Holder Steel /Solid Carbide, Short
87° taper
Length 85–120 mm
for KLG 8, 10, 12, 16, 20 mm



▲ Solid Carbide Holder Medium
Cylindrical / Tapered 87°
Length 110–150 mm
for KLG 8, 10, 12, 16, 20 mm



▲ Holder Steel/Solid Carbide, Long
cylindrical
Length 150–200 mm
for KLG 8, 10, 12, 16, 20 mm



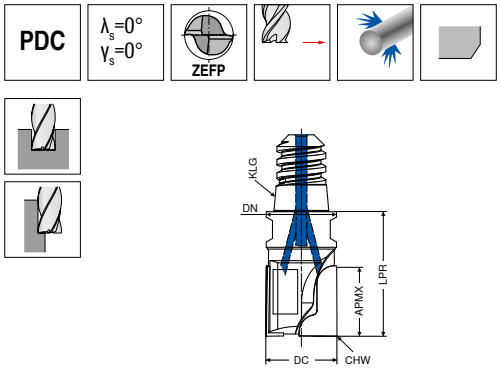
▲ Holder Steel/Solid Carbide, Long
87° taper
Length 150–200 mm
for KLG 8, 10, 12, 16, 20 mm



▲ Steel/Solid Carbide Holder Extra Long
cylindrical
Length 200–250 mm
For Ø 16 and 20 mm

→ **Chapter 17, Accessories**

MultiChange – PCD End Mill



Factory standard

V8

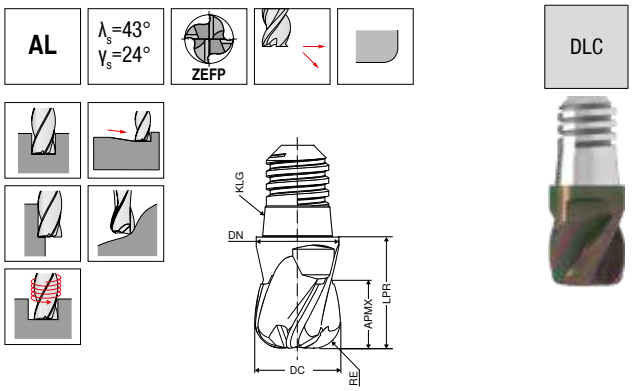
DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	Article no. 52 880 ... EUR	
8	06	8	7,4	17	0,1	2	363,50	080
10	08	10	9,4	20	0,1	2	421,80	100
12	10	12	11,0	24	0,1	2	514,00	120
16	12	15	15,0	28	0,1	2	716,40	160

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 328

Other PCD MultiChange heads can be found in our online shop at cuttingtools.ceratizit.com.

MultiChange – Torus Cutter



Factory standard

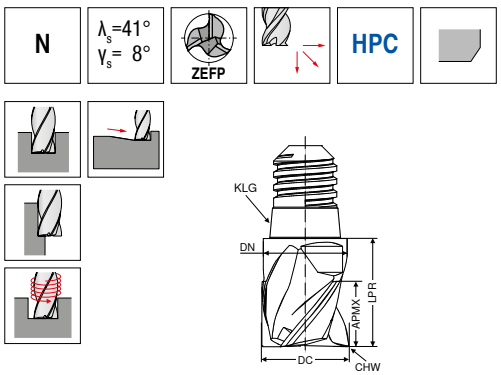
NEW V1

DC mm	RE mm	KLG	APMX mm	DN mm	LPR mm	ZEFP	Article no. 52 870 ... EUR	
10	0,5	08	7,5	9,8	13	3	67,70	10005
10	1,0	08	7,5	9,8	13	3	67,70	10010
12	0,5	10	9,0	11,8	16	3	79,34	12005
12	1,0	10	9,0	11,8	16	3	79,34	12010
12	2,0	10	9,0	11,8	16	3	79,34	12020
16	2,0	12	12,0	15,8	20	3	110,10	16020
16	4,0	12	12,0	15,8	20	3	110,10	16040
20	2,0	16	15,0	19,8	25	3	155,80	20020
20	3,0	16	15,0	19,8	25	3	155,80	20030
20	4,0	16	15,0	19,8	25	3	155,80	20040

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 335

MultiChange – End Mill



Factory standard

V1

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	Article no. 52 861 ... EUR	
8	06	6,0	7,8	11	0,16	3	47,51	080
10	08	7,5	9,8	13	0,20	3	54,01	100
12	10	9,0	11,8	16	0,24	3	67,56	120
16	12	12,0	15,8	20	0,32	3	94,45	160
20	16	15,0	19,8	25	0,40	3	121,30	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 329

Assembly instructions

- KLG = Coupling Size
- SW = Across Flats Size
- M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

- A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- In unstable applications, the cutting data should be reduced.

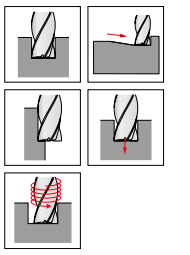
Holders and accessories can be found in → **Chapter 17, Accessories.**

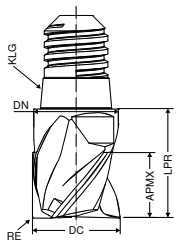
Application Tips

APMX does not correspond to the maximum cutting depth

MultiChange – End Mill

PCR UNI | λ_s=36° γ_s=10° | ZEFP | HPC | APA72S







Factory standard

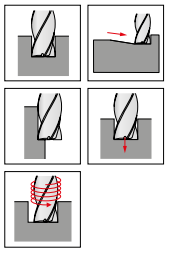
DC mm	RE mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	NEW V1 Article no. 52 871 ... EUR	
9,7	0,32	08	7,5	9,8	13	4	76,56	**09700**
10,0	0,32	08	7,5	9,8	13	4	76,56	**10000**
11,7	0,32	10	9,0	11,8	16	4	88,28	**11700**
12,0	0,32	10	9,0	11,8	16	4	88,28	**12000**
15,7	0,32	12	12,0	15,8	20	4	115,20	**15700**
16,0	0,32	12	12,0	15,8	20	4	115,20	**16000**
19,7	0,50	16	15,0	19,8	25	4	151,20	**19700**
20,0	0,50	16	15,0	19,8	25	4	151,20	**20000**

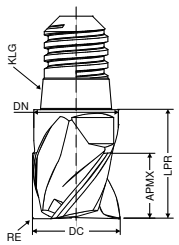
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 326+327

MultiChange – End Mill

PCR ALU | λ_s=41° γ_s=15° | ZEFP | HPC | DLC







Factory standard

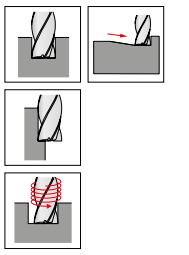
DC mm	RE mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	NEW V1 Article no. 52 872 ... EUR	
9,7	0,32	08	7,5	9,8	13	4	79,44	**09700**
10,0	0,32	08	7,5	9,8	13	4	79,44	**10000**
11,7	0,32	10	9,0	11,8	16	4	95,28	**11700**
12,0	0,32	10	9,0	11,8	16	4	95,28	**12000**
15,7	0,32	12	12,0	15,8	20	4	125,90	**15700**
16,0	0,32	12	12,0	15,8	20	4	125,90	**16000**
19,7	0,50	16	15,0	19,8	25	4	170,30	**19700**
20,0	0,50	16	15,0	19,8	25	4	170,30	**20000**

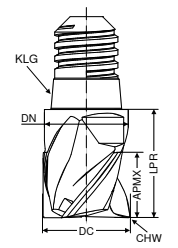
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 326+327

MultiChange – End Mill

N | λ_s=37° γ_s=12° | ZEFP | HPC | Ti1100







Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	V1 Article no. 52 860 ... EUR	
8	06	6,0	7,8	11	0,16	4	51,58	**080**
10	08	7,5	9,8	13	0,20	4	57,87	**100**
12	10	9,0	11,8	16	0,24	4	73,62	**120**
16	12	12,0	15,8	20	0,32	4	105,50	**160**
20	16	15,0	19,8	25	0,40	4	136,80	**200**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 329

Assembly instructions

- ▲ KLG = Coupling Size
- ▲ SW = Across Flats Size
- ▲ M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

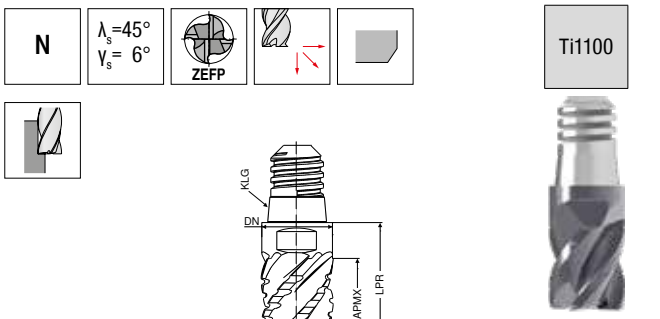
- ▲ A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- ▲ In unstable applications, the cutting data should be reduced.

Holders and accessories can be found in → **Chapter 17, Accessories.**

Application Tips

APMX does not correspond to the maximum cutting depth

MultiChange – Roughing-Finishing Cutter



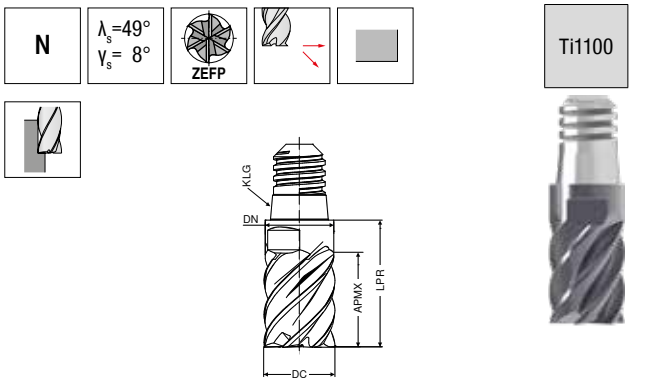
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	V1 Article no. 52 862 ... EUR	
8	06	10,0	7,8	15	0,16	4	59,19	080
10	08	12,5	9,8	18	0,20	4	61,61	100
12	10	15,0	11,8	22	0,24	4	83,76	120
16	12	20,0	15,8	28	0,32	5	127,80	160
20	16	25,0	19,8	35	0,40	6	172,00	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 330

MultiChange – Finish milling cutter



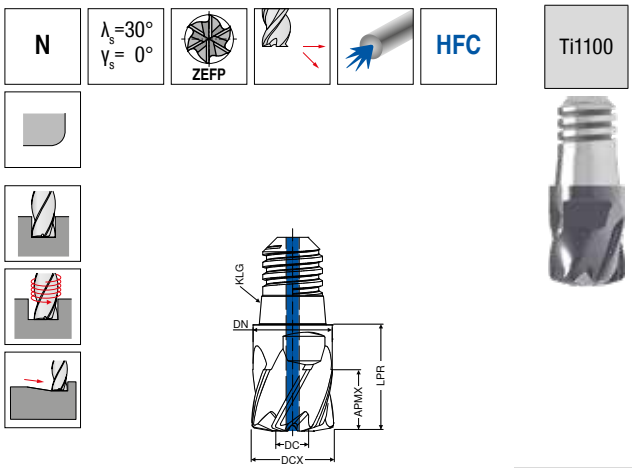
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	V1 Article no. 52 863 ... EUR	
8	06	10,0	7,8	15	6	52,79	080
10	08	12,5	9,8	18	6	59,63	100
12	10	15,0	11,8	22	6	74,72	120
16	12	20,0	15,8	28	6	116,80	160
20	16	25,0	19,8	35	6	161,00	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 332

MultiChange – High Feed Cutter



Factory standard

DCX mm	KLG	r_{3D} mm	APMX mm	LPR ±0,02 mm	ZEFP	V1 Article no. 52 864 ... EUR	
8	06	0,7	6,0	11	6	51,58	080
10	08	0,9	7,5	13	6	57,87	100
12	10	1,0	9,0	16	6	73,62	120
16	12	1,4	12,0	20	6	105,50	160
20	16	1,7	15,0	25	6	136,80	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	○

→ v_c/f_z Page 331

- ▲ r_{3D} = corner radius to be programmed
- ▲ Ø DCX tapered by 0.2 mm, resulting in Ø DN
- ▲ Ø DCX halved, resulting in Ø DC

Assembly instructions

- ▲ KLG = Coupling Size
- ▲ SW = Across Flats Size
- ▲ M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

- ▲ A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- ▲ In unstable applications, the cutting data should be reduced.

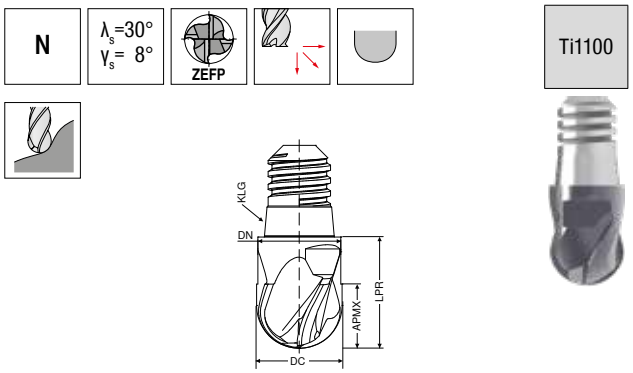
Holders and accessories can be found in → **Chapter 17, Accessories.**

Application Tips

APMX does not correspond to the maximum cutting depth

14

MultiChange – Ball Nosed Cutter



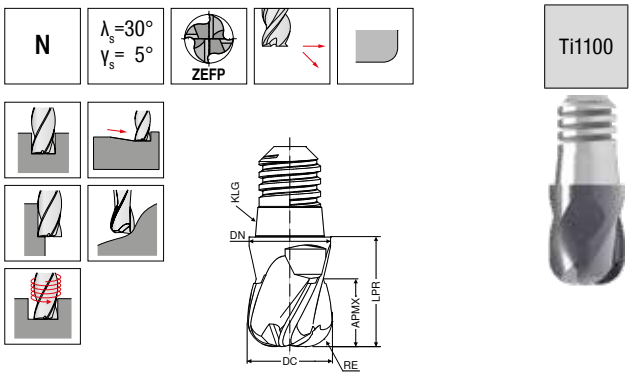
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	V1 Article no. 52 866 ... EUR	
10	08	7,5	9,8	13	4	60,07	100
12	10	9,0	11,8	16	4	74,84	120
16	12	12,0	15,8	20	4	112,40	160
20	16	15,0	19,8	25	4	137,80	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 333+334

MultiChange – Torus Cutter



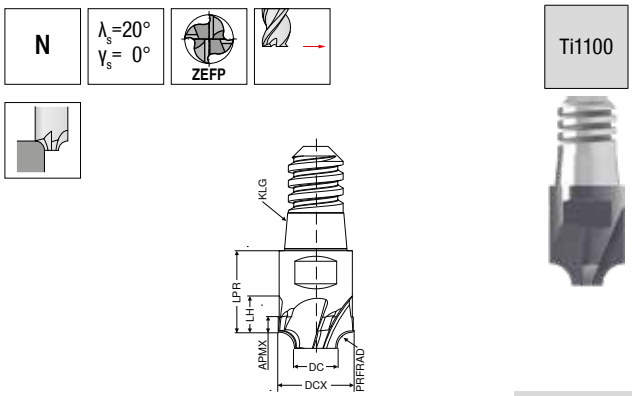
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	RE mm	ZEFP	V1 Article no. 52 865 ... EUR	
8	06	6,0	7,8	11	1,0	4	47,51	081
8	06	6,0	7,8	11	2,0	4	47,51	082
10	08	7,5	9,8	13	1,5	4	54,01	101
10	08	7,5	9,8	13	3,0	4	54,01	103
12	10	9,0	11,8	16	1,5	4	67,56	121
12	10	9,0	11,8	16	4,0	4	67,56	124
16	12	12,0	15,8	20	2,0	4	100,40	162
16	12	12,0	15,8	20	5,0	4	100,40	165
20	16	15,0	19,8	25	2,0	4	135,50	202
20	16	15,0	19,8	25	6,0	4	135,50	206

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 333+334

MultiChange – Quarter-round milling cutter



Factory standard

DCX mm	KLG	PRFRAD ±0,03 mm	APMX mm	DC mm	LPR ±0,02 mm	LH mm	V1 Article no. 52 869 ... EUR	
8	06	0,5	2,0	6,63	11	4,5	69,54	080
8	06	1,0	3,0	5,69	11	5,0	69,54	081
10	08	1,5	4,0	6,63	13	6,5	74,62	100
10	08	2,0	4,5	5,69	13	7,0	74,62	101
12	10	2,5	5,5	6,65	16	8,5	90,15	120
12	10	3,0	6,0	5,70	16	9,0	90,15	121
12	10	3,5	6,5	4,76	16	9,5	90,15	122
16	12	4,0	8,0	7,60	20	12,0	127,80	160
16	12	4,5	8,5	6,68	20	12,5	127,80	161
16	12	5,0	9,0	5,74	20	13,0	127,80	162
20	16	5,0	10,0	9,53	25	15,0	172,00	200
20	16	6,0	11,0	7,64	25	16,0	172,00	201

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 336

Assembly instructions

- KLG = Coupling Size
- SW = Across Flats Size
- M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

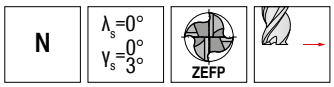
- A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- In unstable applications, the cutting data should be reduced.

Holders and accessories can be found in → **Chapter 17, Accessories.**

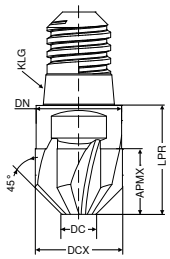
Application Tips

APMX does not correspond to the maximum cutting depth

MultiChange – Deburring Cutter







Ti1050



Factory standard

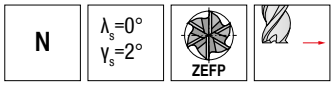
V1

DCX mm	KLG	APMX mm	DC mm	DN mm	LPR ±0,02 mm	ZEFP	Article no. 52 867 ... EUR	
10	08	7,5	0,0	9,8	13	4	48,83	100
12	10	9,0	0,0	11,8	16	4	63,16	120
16	12	12,0	6,4	15,8	20	6	83,99	160
20	16	15,0	8,0	19,8	25	6	111,30	200

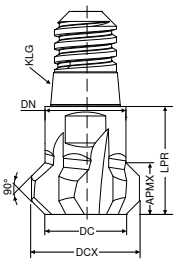
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 337

MultiChange – Deburring Cutter







Ti1100



Factory standard

V1

DCX mm	KLG	APMX mm	DC mm	DN mm	LPR ±0,02 mm	ZEFP	Article no. 52 868 ... EUR	
10	06	4,8	7,5	8	11	6	54,01	100
12	08	5,5	9,0	10	13	6	67,56	120
16	10	8,0	12,0	12	16	6	94,45	160
20	12	9,5	15,0	16	20	6	121,30	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 337

Assembly instructions

- KLG = Coupling Size
- SW = Across Flats Size
- M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

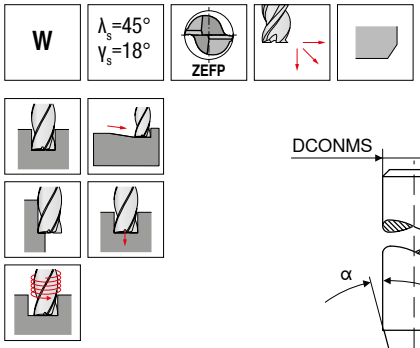
- A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- In unstable applications, the cutting data should be reduced.

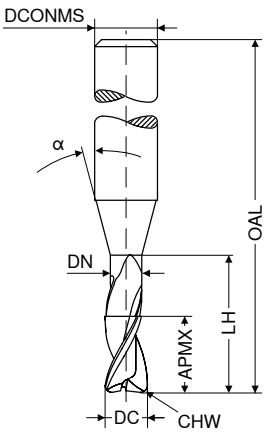
Holders and accessories can be found in → **Chapter 17, Accessories.**

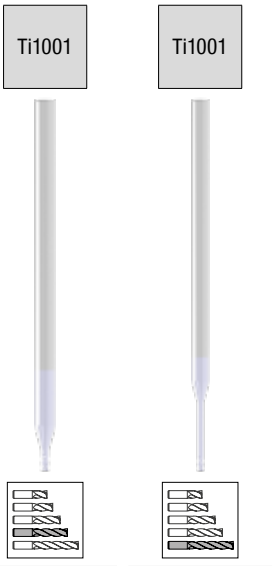
Application Tips

APMX does not correspond to the maximum cutting depth

End milling cutter







Factory standard | Factory standard

HA | HA

V0 | V0

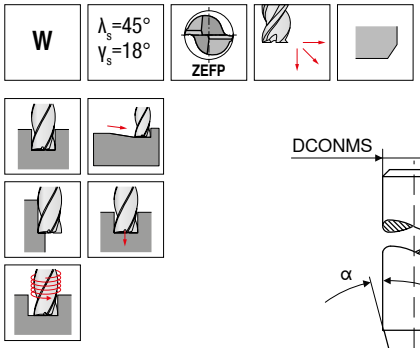
DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	CHW	ZEFP	Article no. 50 900 ...		Article no. 50 900 ...	
mm	mm	mm	mm	mm		mm	mm		EUR		EUR	
0,2	0,2	0,18	0,6	55	15	3	0,02	2	75,39	**021**		
0,2	0,2	0,18	1,0	55	15	3	0,02	2	76,16	**022**		
0,2	0,2	0,18	1,6	55	15	3	0,02	2	76,81	**023**		
0,2	0,2	0,18	2,0	55	15	3	0,02	2	78,04	**024**		
0,3	0,3	0,28	0,9	55	15	3	0,03	2	75,39	**031**		
0,3	0,3	0,28	1,5	55	15	3	0,03	2	76,16	**032**		
0,3	0,3	0,28	2,4	55	15	3	0,03	2	76,81	**033**		
0,3	0,3	0,28	3,0	55	15	3	0,03	2	78,04	**034**		
0,4	0,4	0,37	1,2	55	15	3	0,04	2	75,39	**041**		
0,4	0,4	0,37	2,0	55	15	3	0,04	2	76,16	**042**		
0,4	0,4	0,37	3,2	55	15	3	0,04	2	76,81	**043**		
0,4	0,4	0,37	4,0	55	15	3	0,04	2	78,04	**044**		
0,5	0,5	0,45	1,5	55	15	3	0,05	2	73,74	**051**		
0,5	0,5	0,45	2,5	55	15	3	0,05	2	74,39	**052**		
0,5	0,5	0,45	4,0	55	15	3	0,05	2	75,39	**053**		
0,5	0,5	0,45	5,0	55	15	3	0,05	2	76,16	**054**		
0,6	0,6	0,58	2,0	55	15	3	0,06	2	63,48	**061**		
0,6	0,6	0,58	3,0	55	15	3	0,06	2	61,71	**062**		
0,6	0,6	0,58	5,0	65	15	3	0,06	2			67,34	**063**
0,6	0,6	0,58	6,0	65	15	3	0,06	2			71,42	**064**
0,8	0,8	0,77	2,5	55	15	3	0,08	2	61,71	**081**		
0,8	0,8	0,77	4,0	55	15	3	0,08	2	61,71	**082**		
0,8	0,8	0,77	6,5	65	15	3	0,08	2			68,66	**083**
0,8	0,8	0,77	8,0	65	15	3	0,08	2			71,42	**084**
1,0	1,0	0,95	3,0	55	15	3	0,10	2	61,71	**101**		
1,0	1,0	0,95	5,0	55	15	3	0,10	2	61,71	**102**		
1,0	1,0	0,95	8,0	65	15	3	0,10	2			65,24	**103**
1,0	1,0	0,95	10,0	65	15	3	0,10	2			71,42	**104**
1,0	1,0	0,95	12,0	65	15	3	0,10	2			73,07	**105**
1,2	1,2	1,15	3,0	55	15	3	0,12	2	61,71	**121**		
1,2	1,2	1,15	6,0	55	15	3	0,12	2	61,71	**122**		
1,2	1,2	1,15	10,0	65	15	3	0,12	2			68,66	**123**
1,2	1,2	1,15	12,0	65	15	3	0,12	2			71,42	**124**
1,3	1,3	1,25	4,0	55	15	3	0,12	2	61,71	**131**		
1,3	1,3	1,25	7,0	55	15	3	0,12	2	63,48	**132**		
1,3	1,3	1,25	11,0	65	15	3	0,12	2			68,66	**133**
1,3	1,3	1,25	13,0	65	15	3	0,12	2			73,07	**134**
1,5	1,5	1,44	5,0	55	15	3	0,12	2	63,48	**151**		
1,5	1,5	1,44	7,5	55	15	3	0,12	2	61,71	**152**		
1,5	1,5	1,44	12,0	65	15	3	0,12	2			73,07	**153**
1,5	1,5	1,44	15,0	65	15	3	0,12	2			71,42	**154**

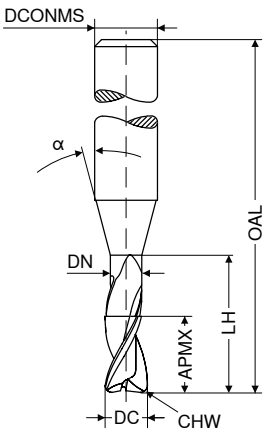
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–355

Continued on next page

End milling cutter







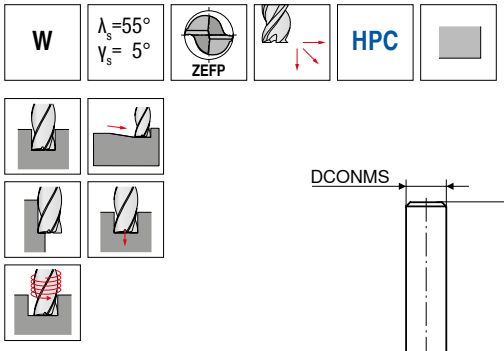
DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	CHW	ZEFP	Factory standard HA V0 Article no. 50 900 ...		Factory standard HA V0 Article no. 50 900 ...	
mm	mm	mm	mm	mm		mm	mm		EUR		EUR	
1,6	1,6	1,52	5,0	55	15	3	0,12	2	63,48	161		
1,6	1,6	1,52	8,0	55	15	3	0,12	2	63,48	162		
1,6	1,6	1,52	13,0	65	15	3	0,12	2			68,66	163
1,6	1,6	1,52	16,0	65	15	3	0,12	2			73,07	164
1,8	1,8	1,72	5,5	55	15	3	0,12	2	61,71	181		
1,8	1,8	1,72	9,0	55	15	3	0,12	2	63,48	182		
1,8	1,8	1,72	14,5	65	15	3	0,12	2			68,66	183
1,8	1,8	1,72	18,0	65	15	3	0,12	2			73,07	184
2,0	2,0	1,92	6,0	55	15	3	0,13	2	61,71	201		
2,0	2,0	1,92	10,0	55	15	3	0,13	2	61,71	202		
2,0	2,0	1,92	14,0	55	15	3	0,13	2	65,24	203		
2,0	2,0	1,92	16,0	65	15	3	0,13	2			73,07	204
2,0	2,0	1,92	20,0	65	15	3	0,13	2			71,42	205
2,3	2,3	2,22	7,0	55	15	3	0,13	2	61,71	231		
2,3	2,3	2,22	11,5	55	15	3	0,13	2	63,48	232		
2,3	2,3	2,22	18,5	65	15	3	0,13	2			65,24	233
2,3	2,3	2,22	20,0	65	15	3	0,13	2			73,07	234
2,3	2,3	2,22	23,0	65	15	3	0,13	2			73,07	235
3,0	3,0	2,90	9,0	65	15	6	0,15	2	65,24	301		
3,0	3,0	2,90	15,0	65	15	6	0,15	2	73,07	302		
3,0	3,0	2,90	24,0	100	15	6	0,15	2			79,25	303
3,0	3,0	2,90	30,0	100	15	6	0,15	2			82,67	304
4,0	4,0	3,90	12,0	65	15	6	0,15	2	73,07	401		
4,0	4,0	3,90	20,0	65	15	6	0,15	2	73,07	402		
4,0	4,0	3,90	32,0	100	15	6	0,15	2			82,67	403
4,0	4,0	3,90	40,0	100	15	6	0,15	2			85,09	404
5,0	5,0	4,90	15,0	65	15	6	0,15	2	73,07	501		
5,0	5,0	4,90	25,0	65	15	6	0,15	2	73,07	502		
5,0	5,0	4,90	40,0	100	15	6	0,15	2			85,09	503
5,0	5,0	4,90	50,0	100	15	6	0,15	2			89,39	504
6,0	6,0	5,90	18,0	65	15	6	0,15	2	73,07	601		
6,0	6,0	5,90	30,0	100	15	6	0,15	2			82,67	602
6,0	6,0	5,90	48,0	100	15	6	0,15	2			89,39	603
6,0	6,0	5,90	60,0	100	15	6	0,15	2			92,14	604

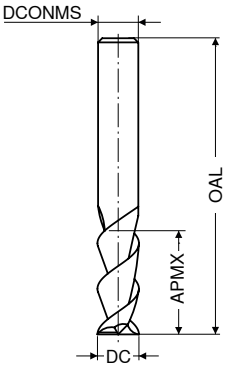
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–355

14

End milling cutter









≈DIN 6527

HA

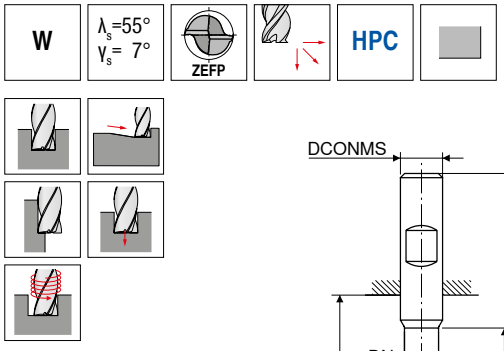
V0

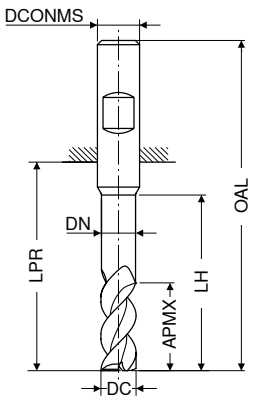
DC h6 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 960 ... EUR	
3	12	50	3	2	15,87	030
4	15	50	4	2	18,08	040
5	20	50	5	2	19,62	050
6	20	57	6	2	21,49	060
8	20	63	8	2	31,86	080
10	25	73	10	2	50,14	100
12	25	83	12	2	65,79	120
14	30	83	14	2	114,60	140
16	30	92	16	2	120,10	160
20	38	104	20	2	169,70	200

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 338+339

End milling cutter









								Factory standard		Factory standard		Factory standard		Factory standard	
								HA		HA		HB		HB	
								V0		V0		V0		V0	
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 54 590 ...		Article no. 54 592 ...		Article no. 54 591 ...		Article no. 54 593 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
2,7	5,0	2,5	12	19	55	6	2	23,25	027	34,16	027	23,25	027	34,16	027
3,0	3,5	2,8	12	19	55	6	2	23,91	033	34,72	033				
3,0	5,0	2,8	12	19	55	6	2	23,25	031	34,16	031	23,25	031	34,16	031
3,7	6,5	3,5	12	19	55	6	2	23,25	037	34,16	037	23,25	037	34,16	037
4,0	4,5	3,8	12	19	55	6	2	23,91	043	34,72	043				
4,0	6,5	3,8	12	19	55	6	2	23,25	041	34,16	041	23,25	041	34,16	041
4,7	8,0	4,5	15	22	58	6	2	23,25	047	34,16	047	23,25	047	34,16	047
5,0	5,5	4,8	15	22	58	6	2	23,91	053	34,72	053				
5,0	8,0	4,8	15	22	58	6	2	23,25	051	34,16	051	23,25	051	34,16	051
5,7	10,0	5,5	18	22	58	6	2	23,25	057	34,16	057	23,25	057	34,16	057
6,0	7,0	5,8	18	22	58	6	2	23,91	063	34,72	063				
6,0	10,0	5,8	18	22	58	6	2	23,25	061	34,16	061	23,25	061	34,16	061
6,7	13,0	6,4	24	28	64	8	2	34,16	067	46,51	067	34,16	067	46,51	067
7,0	13,0	6,7	24	28	64	8	2	34,16	071	46,51	071	34,16	071	46,51	071
7,7	13,0	7,4	24	28	64	8	2	34,16	077	46,51	077	34,16	077	46,51	077
8,0	9,0	7,7	24	28	64	8	2	34,16	083	46,51	083				
8,0	13,0	7,7	24	28	64	8	2	34,16	081	46,51	081	34,16	081	46,51	081
8,7	16,0	8,4	30	34	74	10	2	54,01	087	67,89	087	54,01	087	67,89	087
9,0	16,0	8,7	30	34	74	10	2	54,01	091	67,89	091	54,01	091	67,89	091
9,7	16,0	9,4	30	34	74	10	2	54,01	097	67,89	097	54,01	097	67,89	097
10,0	11,0	9,7	30	34	74	10	2	54,01	103	67,89	103				
10,0	16,0	9,7	30	34	74	10	2	54,01	101	67,89	101	54,01	101	67,89	101
10,7	19,0	10,3	36	40	85	12	2	71,65	107	85,20	107	71,65	107	85,20	107
11,0	19,0	10,6	36	40	85	12	2	71,65	111	85,20	111	71,65	111	85,20	111
11,7	19,0	11,3	36	40	85	12	2	71,65	117	85,20	117	71,65	117	85,20	117
12,0	13,0	11,6	36	40	85	12	2	71,65	123	85,20	123				
12,0	19,0	11,6	36	40	85	12	2	71,65	121	85,20	121	71,65	121	85,20	121
13,0	22,0	12,6	42	46	91	14	2	104,40	131	120,10	131	104,40	131	120,10	131
13,7	22,0	13,3	42	46	91	14	2	104,40	137	120,10	137	104,40	137	120,10	137
14,0	15,0	13,6	42	46	91	14	2	104,40	143	120,10	143				
14,0	22,0	13,6	42	46	91	14	2	104,40	141	120,10	141	104,40	141	120,10	141
15,0	25,0	14,5	48	52	100	16	2	168,60	151	192,80	151	168,60	151	192,80	151
15,7	25,0	15,2	48	52	100	16	2	168,60	157	192,80	157	168,60	157	192,80	157
16,0	17,0	15,5	48	52	100	16	2	168,60	163	192,80	163				
16,0	25,0	15,5	48	52	100	16	2	168,60	161	192,80	161	168,60	161	192,80	161
18,0	20,0	17,5	54	58	106	18	2	216,00	183	251,30	183				
18,0	29,0	17,5	54	58	106	18	2	217,10	181	238,10	181	217,10	181	238,10	181
19,7	32,0	19,2	60	64	114	20	2	237,00	197	253,60	197	237,00	197	262,30	197
20,0	22,0	19,5	60	64	114	20	2	228,10	203	250,20	203				
20,0	32,0	19,5	60	64	114	20	2	237,00	201	253,60	201	237,00	201	253,60	201
24,7	40,0	24,2	75	80	136	25	2	364,80	247	384,60	247	364,80	247	384,60	247
25,0	27,0	24,5	75	80	136	25	2	345,10	253	365,90	253				
25,0	40,0	24,5	75	80	136	25	2	364,80	251	384,60	251	364,80	251	384,60	251

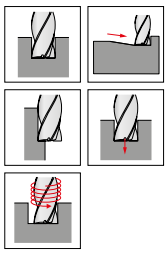
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

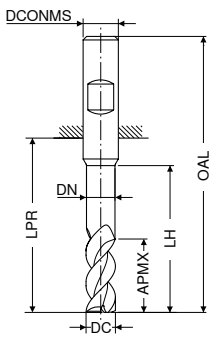
→ v_c/f_z Page 338+339

14

End milling cutter

W | λ_s=55° γ_s= 7° | ZEFP | HPC





LPR with Shank DIN 6535 HB

Ti1005 | Ti1005 | Ti1005



DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 590 ... EUR		Factory standard HA V0 Article no. 54 592 ... EUR		Factory standard HB V0 Article no. 54 591 ... EUR		Factory standard HB V0 Article no. 54 593 ... EUR		Factory standard HA V0 Article no. 54 590 ... EUR		Factory standard HA V0 Article no. 54 592 ... EUR	
mm	mm	mm	mm	mm	mm	mm													
2,7	8,0	2,5	15	22	58	6	2	27,01	028	37,80	028	27,01	028	37,80	028				
3,0	3,5	2,8	15	22	58	6	2	25,57	034	36,48	034								
3,0	8,0	2,8	15	22	58	6	2	27,01	032	37,80	032	27,01	032	37,80	032				
3,0	3,5	2,8	24	31	67	6	2									31,96	035	42,76	035
3,7	10,5	3,5	20	26	62	6	2	27,01	038	37,80	038	27,01	038	37,80	038				
4,0	4,5	3,8	20	26	62	6	2	25,57	044	36,48	044								
4,0	10,5	3,8	20	26	62	6	2	27,01	042	37,80	042	27,01	042	37,80	042				
4,0	4,5	3,8	32	38	74	6	2									31,96	045	42,76	045
4,7	13,0	4,5	25	34	70	6	2	27,01	048	37,80	048	27,01	048	37,80	048				
5,0	5,5	4,8	25	34	70	6	2	25,57	054	36,48	054								
5,0	13,0	4,8	25	34	70	6	2	27,01	052	37,80	052	27,01	052	37,80	052				
5,0	5,5	4,8	40	52	88	6	2									32,73	055	43,43	055
5,7	16,0	5,5	30	34	70	6	2	27,01	058	37,80	058	27,01	058	37,80	058				
6,0	7,0	5,8	30	34	70	6	2	25,57	064	36,48	064								
6,0	16,0	5,8	30	34	70	6	2	27,01	062	37,80	062	27,01	062	37,80	062				
6,0	7,0	5,8	48	52	88	6	2									32,73	065	43,43	065
6,7	21,0	6,4	40	44	80	8	2	38,69	068	50,69	068	38,69	068	50,69	068				
7,0	21,0	6,7	40	44	80	8	2	38,69	072	50,69	072	38,69	072	50,69	072				
7,7	21,0	7,4	40	44	80	8	2	38,69	078	50,69	078	38,69	078	50,69	078				
8,0	9,0	7,7	40	44	80	8	2	37,59	084	49,71	084								
8,0	21,0	7,7	40	44	80	8	2	38,69	082	50,69	082	38,69	082	50,69	082				
8,0	9,0	7,7	64	68	104	8	2									48,50	085	60,94	085
8,7	26,0	8,4	50	54	94	10	2	61,06	088	74,84	088	61,06	088	74,84	088				
9,0	26,0	8,7	50	54	94	10	2	61,06	092	74,84	092	61,06	092	74,84	092				
9,7	26,0	9,4	50	54	94	10	2	61,06	098	74,84	098	61,06	098	74,84	098				
10,0	11,0	9,7	50	54	94	10	2	59,40	104	73,29	104								
10,0	26,0	9,7	50	54	94	10	2	61,06	102	74,84	102	61,06	102	74,84	102				
10,0	11,0	9,7	80	84	124	10	2									98,86	105	115,80	105
10,7	31,0	10,3	60	64	109	12	2	100,50	108	119,10	108	100,50	108	119,10	108				
11,0	31,0	10,6	60	64	109	12	2	100,50	112	119,10	112	100,50	112	119,10	112				
11,7	31,0	11,3	60	64	109	12	2	100,50	118	119,10	118	100,50	118	119,10	118				
12,0	13,0	11,6	60	64	109	12	2	98,64	124	116,80	124								
12,0	31,0	11,6	60	64	109	12	2	100,50	122	119,10	122	100,50	122	119,10	122				
12,0	13,0	11,6	96	100	145	12	2									130,00	125	145,50	125
13,0	36,0	12,6	70	74	119	14	2	145,50	132	165,40	132	145,50	132	165,40	132				
13,7	36,0	13,3	70	74	119	14	2	145,50	138	168,60	138	145,50	138	165,40	138				
14,0	15,0	13,6	70	74	119	14	2	144,40	144	164,20	144								
14,0	36,0	13,6	70	74	119	14	2	145,50	142	165,40	142	145,50	142	165,40	142				

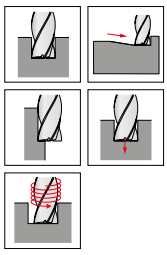
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

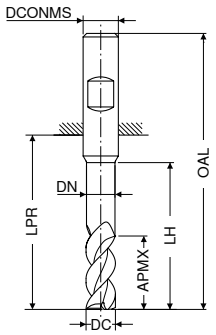
→ v_c/f_z Page 338+339

Continued on next page

End milling cutter

W | λ_s=55° γ_s= 7° | ZEFP | HPC







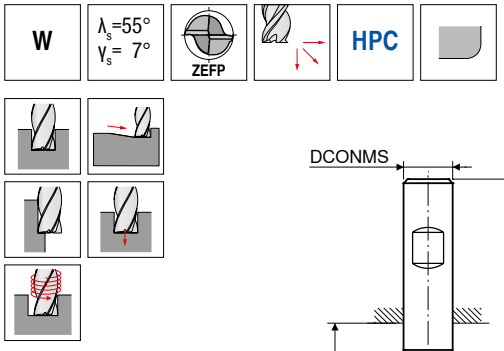
LPR with Shank DIN 6535 HB

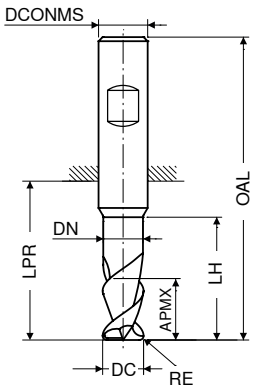
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 590 ... EUR		Factory standard HA V0 Article no. 54 592 ... EUR		Factory standard HB V0 Article no. 54 591 ... EUR		Factory standard HB V0 Article no. 54 593 ... EUR		Factory standard HA V0 Article no. 54 590 ... EUR		Factory standard HA V0 Article no. 54 592 ... EUR	
mm	mm	mm	mm	mm	mm	mm													
14,0	15,0	13,6	112	116	161	14	2									192,80	**145**	212,80	**145**
15,0	41,0	14,5	80	84	132	16	2	189,60	**152**	212,80	**152**	189,60	**152**	212,80	**152**				
15,7	41,0	15,2	80	84	132	16	2	189,60	**158**	212,80	**158**	189,60	**158**	212,80	**158**				
16,0	17,0	15,5	80	84	132	16	2	187,30	**164**	206,10	**164**								
16,0	41,0	15,5	80	84	132	16	2	189,60	**162**	212,80	**162**	189,60	**162**	212,80	**162**				
16,0	17,0	15,5	128	132	180	16	2									250,20	**165**	272,30	**165**
18,0	20,0	17,5	90	94	142	18	2	235,90	**184**	255,70	**184**								
18,0	47,0	17,5	90	94	142	18	2	246,90	**182**	268,80	**182**	246,90	**182**	268,80	**182**				
18,0	20,0	17,5	144	148	196	18	2									318,60	**185**	338,30	**185**
19,7	52,0	19,2	100	104	154	20	2	270,10	**198**	295,40	**198**	270,10	**198**	295,40	**198**				
20,0	22,0	19,5	100	104	154	20	2	251,30	**204**	277,80	**204**								
20,0	52,0	19,5	100	104	154	20	2	270,10	**202**	295,40	**202**	270,10	**202**	295,40	**202**				
20,0	22,0	19,5	160	164	214	20	2									347,20	**205**	373,60	**205**
24,7	65,0	24,2	125	130	186	25	2	503,70	**248**	524,60	**248**	503,70	**248**	524,60	**248**				
25,0	27,0	24,5	125	130	186	25	2	486,10	**254**	505,90	**254**								
25,0	65,0	24,5	125	130	186	25	2	503,70	**252**	524,60	**252**	503,70	**252**	524,60	**252**				
25,0	27,0	24,5	200	204	260	25	2									686,60	**255**	709,80	**255**

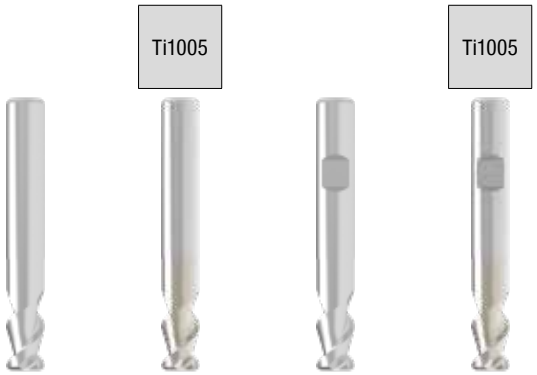
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

→ v_c/f_z Page 338+339

End milling cutter with corner radius







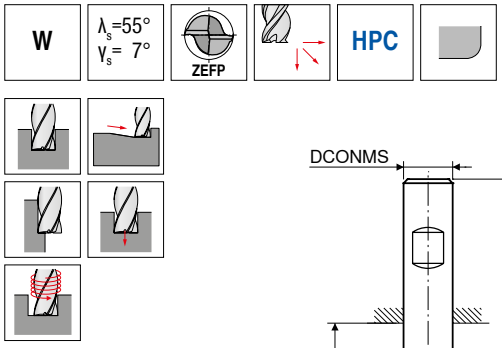


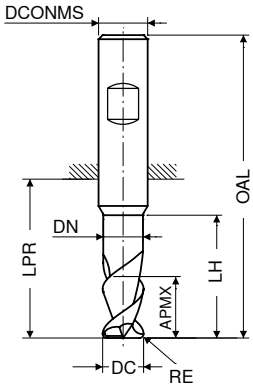
									Factory standard HA V0 Article no. 54 594 ...		Factory standard HA V0 Article no. 54 596 ...		Factory standard HB V0 Article no. 54 595 ...		Factory standard HB V0 Article no. 54 597 ...	
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	EUR		EUR		EUR		EUR	
mm	mm	mm	mm	mm	mm	mm	mm									
3	0,2	5,0	2,8	12	19	55	6	2	26,46	031	37,14	031	26,46	031	37,14	031
3	0,3	5,0	2,8	12	19	55	6	2	26,46	033	37,14	033	26,46	033	37,14	033
3	0,5	5,0	2,8	12	19	55	6	2	26,46	035	37,14	035	26,46	035	37,14	035
4	0,3	6,5	3,8	12	19	55	6	2	26,46	041	37,14	041	26,46	041	37,14	041
4	0,5	6,5	3,8	12	19	55	6	2	26,46	043	37,14	043	26,46	043	37,14	043
4	1,0	6,5	3,8	12	19	55	6	2	26,46	045	37,14	045	26,46	045	37,14	045
5	0,3	8,0	4,8	15	22	58	6	2	27,01	051	37,80	051	27,01	051	37,80	051
5	0,5	8,0	4,8	15	22	58	6	2	27,01	053	37,80	053	27,01	053	37,80	053
5	1,0	8,0	4,8	15	22	58	6	2	27,01	055	37,80	055	27,01	055	37,80	055
6	0,3	10,0	5,8	18	22	58	6	2	27,44	061	38,24	061	27,44	061	38,24	061
6	0,5	10,0	5,8	18	22	58	6	2	27,44	063	38,24	063	27,44	063	38,24	063
6	1,0	10,0	5,8	18	22	58	6	2	27,44	065	38,24	065	27,44	065	38,24	065
8	0,3	13,0	7,7	24	28	64	8	2	37,80	081	50,26	081	37,80	081	50,26	081
8	0,5	13,0	7,7	24	28	64	8	2	37,80	083	50,26	083	37,80	083	50,26	083
8	1,0	13,0	7,7	24	28	64	8	2	37,80	085	50,26	085	37,80	085	50,26	085
10	0,3	16,0	9,7	30	34	74	10	2	57,42	101	71,42	101	57,42	101	71,42	101
10	1,0	16,0	9,7	30	34	74	10	2	57,42	103	71,42	103	57,42	103	71,42	103
10	1,5	16,0	9,7	30	34	74	10	2	57,42	105	71,42	105	57,42	105	71,42	105
12	1,0	19,0	11,6	36	40	85	12	2	75,39	121	89,06	121	75,39	121	89,06	121
12	1,5	19,0	11,6	36	40	85	12	2	75,39	123	89,06	123	75,39	123	89,06	123
12	2,0	19,0	11,6	36	40	85	12	2	75,39	125	89,06	125	75,39	125	89,06	125
16	2,0	25,0	15,5	48	52	100	16	2	175,20	161	196,30	161	175,20	161	196,30	161
16	2,5	25,0	15,5	48	52	100	16	2	176,30	163	197,30	163	176,30	163	197,30	163
16	3,0	25,0	15,5	48	52	100	16	2	176,30	165	197,30	165	176,30	165	197,30	165
20	2,0	32,0	19,5	60	64	114	20	2	239,10	201	266,80	201	232,50	201	266,80	201
20	2,5	32,0	19,5	60	64	114	20	2	239,10	203	266,80	203	239,10	203	266,80	203
20	3,0	32,0	19,5	60	64	114	20	2	239,10	205	266,80	205	239,10	205	266,80	205
20	4,0	32,0	19,5	60	64	114	20	2	239,10	206	266,80	206	239,10	206	266,80	206
25	2,0	40,0	24,5	75	80	136	25	2	367,00	251	388,00	251	367,00	251	388,00	251
25	4,0	40,0	24,5	75	80	136	25	2	368,20	253	388,00	253	368,20	253	388,00	253

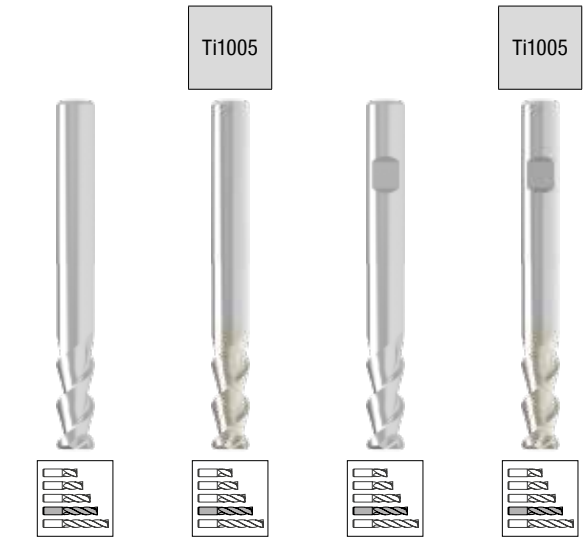
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 338+339

End milling cutter with corner radius







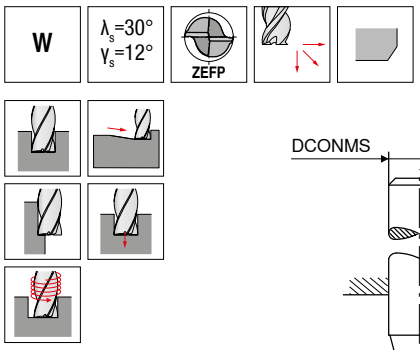
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 594 ...		Factory standard HA V0 Article no. 54 596 ...		Factory standard HB V0 Article no. 54 595 ...		Factory standard HB V0 Article no. 54 597 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	0,2	8,0	2,8	15	22	58	6	2	26,46	032	37,14	032	26,46	032	37,14	032
3	0,3	8,0	2,8	15	22	58	6	2	26,46	034	37,14	034	26,46	034	37,14	034
3	0,5	8,0	2,8	15	22	58	6	2	26,46	036	37,14	036	26,46	036	37,14	036
4	0,3	10,5	3,8	20	26	62	6	2	27,88	042	38,69	042	27,88	042	38,69	042
4	0,5	10,5	3,8	20	26	62	6	2	27,88	044	38,69	044	27,88	044	38,69	044
4	1,0	10,5	3,8	20	26	62	6	2	27,88	046	38,69	046	27,88	046	38,69	046
5	0,3	13,0	4,8	25	34	70	6	2	30,20	052	41,22	052	30,20	052	41,22	052
5	0,5	13,0	4,8	25	34	70	6	2	30,20	054	41,22	054	30,20	054	41,22	054
5	1,0	13,0	4,8	25	34	70	6	2	30,20	056	41,22	056	30,20	056	41,22	056
6	0,3	16,0	5,8	30	34	70	6	2	30,20	062	41,22	062	30,20	062	41,22	062
6	0,5	16,0	5,8	30	34	70	6	2	30,20	064	41,22	064	30,20	064	41,22	064
6	1,0	16,0	5,8	30	34	70	6	2	30,20	066	41,22	066	30,20	066	41,22	066
8	0,3	21,0	7,7	40	44	80	8	2	42,11	082	54,56	082	42,11	082	54,56	082
8	0,5	21,0	7,7	40	44	80	8	2	42,11	084	54,56	084	42,11	084	54,56	084
8	1,0	21,0	7,7	40	44	80	8	2	42,11	086	54,56	086	42,11	086	54,56	086
10	0,5	26,0	9,7	50	54	94	10	2	64,47	102	78,47	102	64,47	102	78,47	102
10	1,0	26,0	9,7	50	54	94	10	2	64,47	104	78,47	104	64,47	104	78,47	104
10	1,5	26,0	9,7	50	54	94	10	2	64,47	106	78,47	106	64,47	106	78,47	106
12	1,0	31,0	11,6	60	64	109	12	2	105,30	122	123,50	122	105,30	122	123,50	122
12	1,5	31,0	11,6	60	64	109	12	2	105,30	124	123,50	124	105,30	124	123,50	124
12	2,0	31,0	11,6	60	64	109	12	2	105,30	126	123,50	126	105,30	126	123,50	126
16	2,0	41,0	15,5	80	84	132	16	2	198,30	162	220,50	162	198,30	162	220,50	162
16	2,5	41,0	15,5	80	84	132	16	2	199,50	164	222,60	164	199,50	164	222,60	164
16	4,0	41,0	15,5	80	84	132	16	2	199,50	166	222,60	166	199,50	166	222,60	166
20	2,0	52,0	19,5	100	104	154	20	2	274,50	202	300,90	202	274,50	202	300,90	202
20	2,5	52,0	19,5	100	104	154	20	2	275,60	204	302,00	204	275,60	204	302,00	204
20	4,0	52,0	19,5	100	104	154	20	2	275,60	207	302,00	207	275,60	207	302,00	207
25	2,0	65,0	24,5	125	130	186	25	2	512,50	252	532,40	252	512,50	252	532,40	252
25	4,0	65,0	24,5	125	130	186	25	2	512,50	254	532,40	254	512,50	254	532,40	254

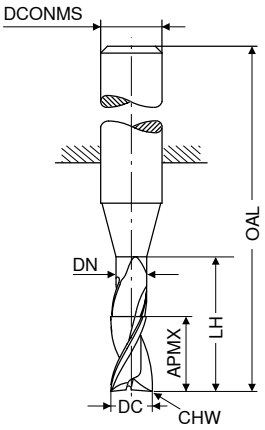
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

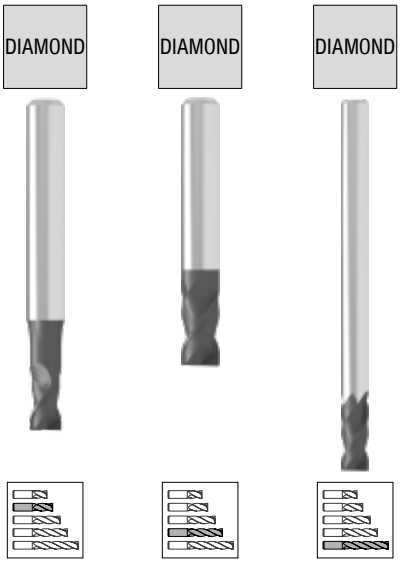
→ v_c/f_z Page 338+339

14

Slot milling cutter







DIN 6527 | DIN 6527 | Factory standard

HA | HA | HA

V1 | V1 | V1

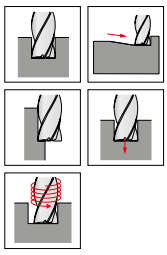
DC	Tol.	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 760 ...		Article no. 52 761 ...		Article no. 52 762 ...	
mm		mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
2	e8	3			50	6	0,04	2	161,00	020				
2	h10	8	1,8	31	60	2	0,04	2					121,30	020
3	e8	4			50	6	0,07	2	161,00	030				
3	h10	12	2,8	41	70	3	0,07	2					130,00	030
4	e8	5			54	6	0,07	2	161,00	040				
4	h10	15	3,8	51	80	4	0,07	2					161,00	040
5	e8	6			54	6	0,12	2	161,00	050				
5	h10	20	4,8	71	100	5	0,12	2					189,60	050
6	e8	10			57	6	0,12	2			157,60	060		
6	h10	20	5,8	63	100	6	0,12	2					208,30	060
8	e8	16			63	8	0,12	2			220,50	080		
8	h10	20	7,8	83	120	8	0,12	2					293,20	080
10	e8	19			72	10	0,20	2			291,00	100		
10	h10	25	9,8	99	140	10	0,20	2					376,90	100
12	e8	22			83	12	0,20	2			361,50	120		
12	h10	25	11,8	104	150	12	0,20	2					493,80	120

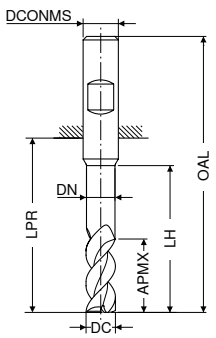
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

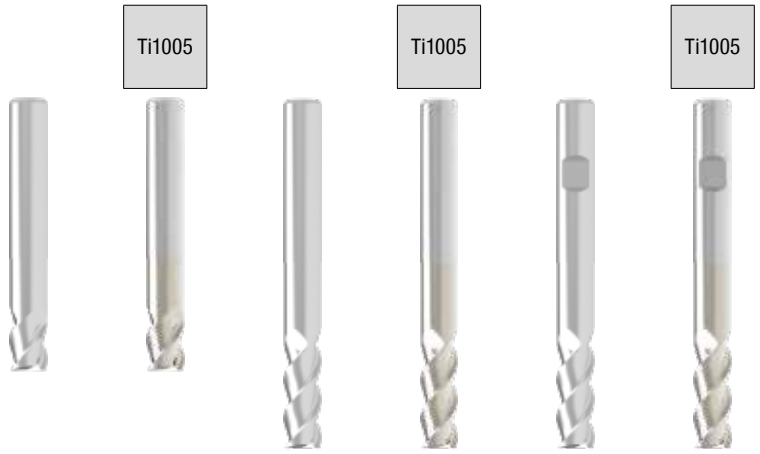
→ v_c/f_z Page 348

End milling cutter

W | λ_s=45° γ_s= 7° | ZEFP | HPC







LPR with Shank DIN 6535 HB

DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 610 ... EUR		Factory standard HA V0 Article no. 54 612 ... EUR		Factory standard HA V0 Article no. 54 610 ... EUR		Factory standard HA V0 Article no. 54 612 ... EUR		Factory standard HB V0 Article no. 54 611 ... EUR		Factory standard HB V0 Article no. 54 613 ... EUR	
mm	mm	mm	mm	mm	mm	mm													
3	3,5	2,8	12	19	55	6	3	25,13	033	36,04	033								
3	3,5	2,8	15	22	58	6	3					27,44	034	38,24	034				
3	8,0	2,8	15	22	58	6	3					27,44	032	38,24	032	27,44	032	38,24	032
4	4,5	3,8	12	19	55	6	3	25,13	043	36,04	043								
4	4,5	3,8	20	26	62	6	3					27,44	044	38,24	044				
4	10,5	3,8	20	26	62	6	3					29,10	042	40,23	042	29,10	042	40,23	042
5	5,5	4,8	15	22	58	6	3	25,13	053	36,04	053								
5	5,5	4,8	25	34	70	6	3					27,44	054	38,24	054				
5	13,0	4,8	25	34	70	6	3					29,10	052	40,23	052	29,10	052	40,23	052
6	7,0	5,8	18	22	58	6	3	25,13	063	36,04	063								
6	7,0	5,8	30	34	70	6	3					27,44	064	38,24	064				
6	16,0	5,8	30	34	70	6	3					29,10	062	40,23	062	29,10	062	40,23	062
7	21,0	6,7	40	44	80	8	3					41,43	072	54,89	072	41,43	072	54,89	072
8	9,0	7,7	24	28	64	8	3	36,04	083	48,50	083								
8	9,0	7,7	40	44	80	8	3					39,35	084	51,91	084				
8	21,0	7,7	40	44	80	8	3					41,43	082	54,89	082	41,43	082	54,89	082
9	26,0	8,7	50	54	94	10	3					65,24	092	80,67	092	65,24	092	80,67	092
10	11,0	9,7	30	34	74	10	3	55,99	103	69,76	103								
10	11,0	9,7	50	54	94	10	3					61,29	104	75,28	104				
10	26,0	9,7	50	54	94	10	3					65,24	102	80,67	102	65,24	102	80,67	102
11	31,0	10,6	60	64	109	12	3					108,40	112	127,80	112	108,40	112	127,80	112
12	13,0	11,6	36	40	85	12	3	73,62	123	87,40	123								
12	13,0	11,6	60	64	109	12	3					113,60	124	132,30	124				
12	31,0	11,6	60	64	109	12	3					108,40	122	127,80	122	108,40	122	127,80	122
13	36,0	12,6	70	74	119	14	3					157,60	132	179,60	132	157,60	132	179,60	132
14	15,0	13,6	42	46	91	14	3	106,50	143	122,30	143								
14	15,0	13,6	70	74	119	14	3					164,20	144	185,20	144				
14	36,0	13,6	70	74	119	14	3					157,60	142	179,60	142	157,60	142	179,60	142
15	17,0	14,5	48	52	100	16	3	137,80	153	155,50	153								
15	17,0	14,5	80	84	132	16	3					213,80	154	237,00	154				
15	41,0	14,5	80	84	132	16	3					203,80	152	229,30	152	203,80	152	229,30	152
16	17,0	15,5	48	52	100	16	3	137,80	163	155,50	163								
16	17,0	15,5	80	84	132	16	3					213,80	164	237,00	164				
16	41,0	15,5	80	84	132	16	3					203,80	162	229,30	162	203,80	162	229,30	162
18	20,0	17,5	54	58	106	18	3	174,10	183	192,80	183								
18	20,0	17,5	90	94	142	18	3					266,80	184	291,00	184				
18	47,0	17,5	90	94	142	18	3					257,90	182	283,30	182	257,90	182	283,30	182
20	22,0	19,5	60	64	114	20	3	257,90	203	283,30	203								
20	22,0	19,5	100	104	154	20	3					283,30	204	315,20	204				
20	52,0	19,5	100	104	154	20	3					275,60	202	305,30	202	275,60	202	305,30	202
25	27,0	24,5	75	80	136	25	3	470,60	253	492,70	253								
25	27,0	24,5	125	130	186	25	3					551,10	254	574,20	254				

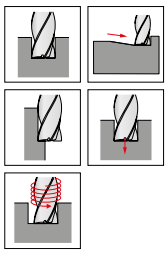
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

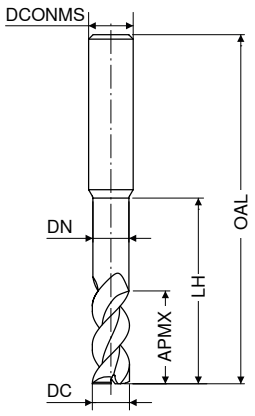
→ v_c/f_z Page 338+339

14

End milling cutter

W | λ_s=45° γ_s= 7° | ZEFP | HPC | Ti1005







Factory standard | Factory standard

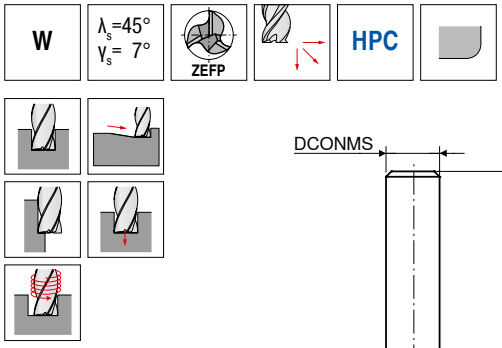
HA | HA

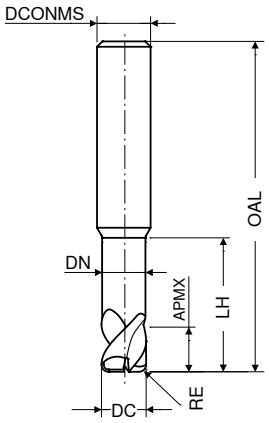
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 54 610 ...		V0 Article no. 54 612 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
3	3,5	2,8	24	67	6	3	33,96	035	44,86	035
4	4,5	3,8	32	74	6	3	33,96	045	44,86	045
5	5,5	4,8	40	88	6	3	33,96	055	44,86	055
6	7,0	5,8	48	88	6	3	33,96	065	44,86	065
8	9,0	7,7	64	104	8	3	49,48	085	61,71	085
10	11,0	9,7	80	124	10	3	112,40	105	131,30	105
12	13,0	11,6	96	145	12	3	149,90	125	165,40	125
14	15,0	13,6	112	161	14	3	218,30	145	238,10	145
16	17,0	15,5	128	180	16	3	282,20	165	306,40	165
18	20,0	17,5	144	196	18	3	358,30	185	380,30	185
20	22,0	19,5	160	214	20	3	392,40	205	422,10	205

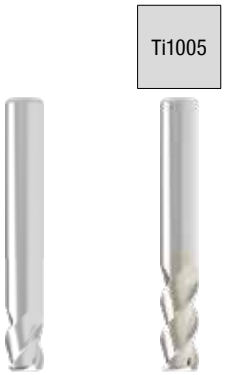
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 338+339

End milling cutter with corner radius









Factory standard



Factory standard

HA



HA



V0

V0

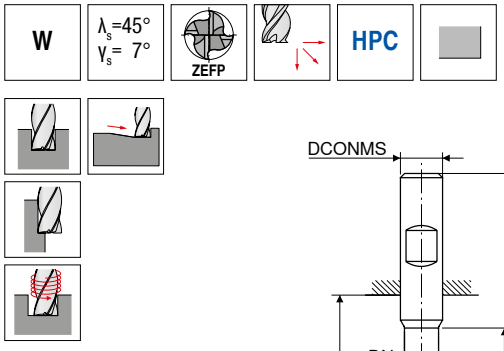
DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 54 620 ...		Article no. 54 622 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3	0,4	3,5	2,8	12	55	6	3	28,22	034	39,01	034
3	0,6	3,5	2,8	12	55	6	3	28,22	035	39,01	035
4	0,4	4,5	3,8	12	55	6	3	28,22	044	39,01	044
4	0,6	4,5	3,8	12	55	6	3	28,22	046	39,01	046
5	0,4	5,5	4,8	15	58	6	3	28,22	054	39,01	054
5	0,6	5,5	4,8	15	58	6	3	28,22	056	39,01	056
6	0,4	7,0	5,8	18	58	6	3	28,22	064	39,01	064
6	0,6	7,0	5,8	18	58	6	3	28,22	066	39,01	066
8	0,4	9,0	7,7	24	64	8	3	39,01	084	51,37	084
8	0,6	9,0	7,7	24	64	8	3	39,01	086	51,37	086
8	0,8	9,0	7,7	24	64	8	3	39,01	087	51,37	087
10	1,6	11,0	9,7	30	74	10	3	59,07	103	72,74	103
12	2,0	13,0	11,6	36	85	12	3	76,49	124	90,59	124
14	0,6	15,0	13,6	42	91	14	3	109,30	146	125,70	146
14	0,8	15,0	13,6	42	91	14	3	109,30	147	125,70	147
16	1,6	17,0	15,5	48	100	16	3	142,30	163	156,50	163
16	3,2	17,0	15,5	48	100	16	3	143,30	167	157,60	167
18	1,6	20,0	17,5	54	106	18	3	176,30	183	195,10	183
20	3,2	22,0	19,5	60	114	20	3	265,60	207	293,20	207
20	5,0	22,0	19,5	60	114	20	3	265,60	209	293,20	209

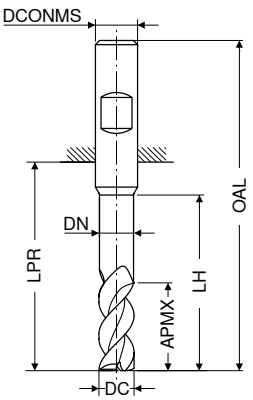
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

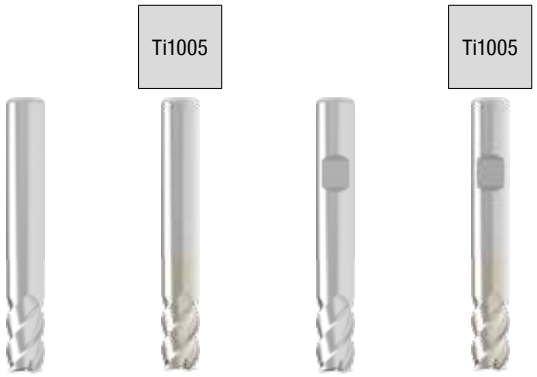
→ v_c/f_z Page 338+339

14

End milling cutter







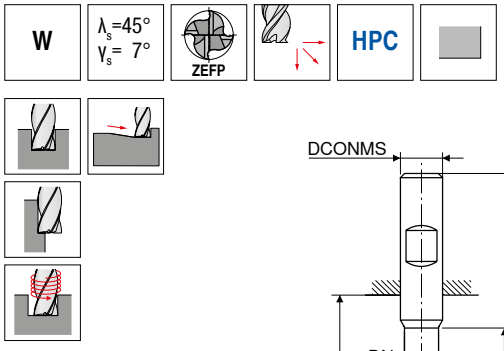


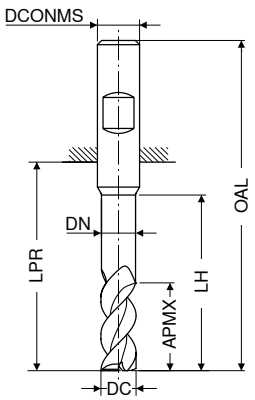
								Factory standard		Factory standard		Factory standard		Factory standard	
								HA		HA		HB		HB	
								V0		V0		V0		V0	
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 54 630 ...		Article no. 54 632 ...		Article no. 54 631 ...		Article no. 54 633 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
6	10	5,8	18	22	58	6	4	26,46	061	37,14	061	26,46	061	37,14	061
7	13	6,7	24	28	64	8	4	37,59	071	50,26	071	37,59	071	50,26	071
8	13	7,7	24	28	64	8	4	37,59	081	50,26	081	37,59	081	50,26	081
9	16	8,7	30	34	74	10	4	58,52	091	72,42	091	58,52	091	72,42	091
10	16	9,7	30	34	74	10	4	58,52	101	72,42	101	58,52	101	72,42	101
11	19	10,6	36	40	85	12	4	76,49	111	91,04	111	76,49	111	91,04	111
12	19	11,6	36	40	85	12	4	76,49	121	91,04	121	76,49	121	91,04	121
13	22	12,6	42	46	91	14	4	110,00	131	126,80	131	110,00	131	126,80	131
14	22	13,6	42	46	91	14	4	110,00	141	126,80	141	110,00	141	126,80	141
15	25	14,5	48	52	100	16	4	143,30	151	158,70	151	143,30	151	158,70	151
16	25	15,5	48	52	100	16	4	143,30	161	158,70	161	143,30	161	158,70	161
18	29	17,5	54	58	106	18	4	179,60	181	198,30	181	179,60	181	198,30	181
20	32	19,5	60	64	114	20	4	203,80	201	229,30	201	203,80	201	229,30	201

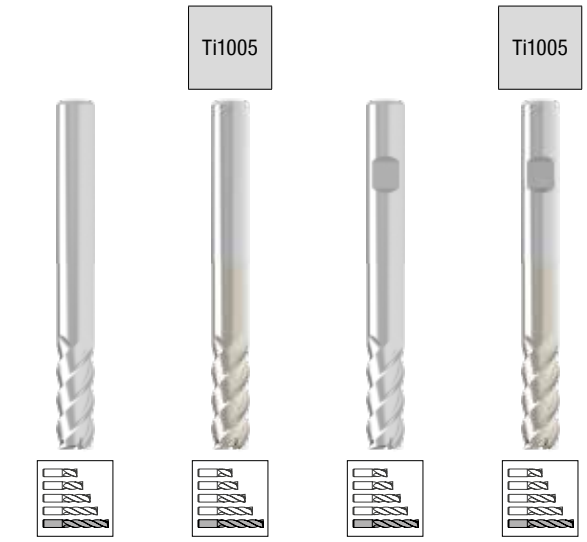
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 338+339

End milling cutter







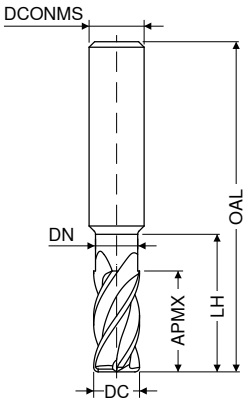
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 630 ...		Factory standard HA V0 Article no. 54 632 ...		Factory standard HB V0 Article no. 54 631 ...		Factory standard HB V0 Article no. 54 633 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
6	16	5,8	30	34	70	6	4	28,00	062	40,11	062	28,00	062	40,11	062
7	21	6,7	40	44	80	8	4	41,43	072	54,89	072	41,43	072	54,89	072
8	21	7,7	40	44	80	8	4	41,43	082	54,89	082	41,43	082	54,89	082
9	26	8,7	50	54	94	10	4	65,24	092	80,67	092	65,24	092	80,67	092
10	26	9,7	50	54	94	10	4	65,24	102	80,67	102	65,24	102	80,67	102
11	31	10,6	60	64	109	12	4	108,40	112	127,80	112	108,40	112	127,80	112
12	31	11,6	60	64	109	12	4	108,40	122	127,80	122	108,40	122	127,80	122
13	36	12,6	70	74	119	14	4	157,60	132	179,60	132	157,60	132	179,60	132
14	36	13,6	70	74	119	14	4	157,60	142	179,60	142	157,60	142	179,60	142
15	41	14,5	80	84	132	16	4	203,80	152	229,30	152	203,80	152	229,30	152
16	41	15,5	80	84	132	16	4	203,80	162	229,30	162	203,80	162	229,30	162
18	47	17,5	90	94	142	18	4	257,90	182	283,30	182	257,90	182	283,30	182
20	52	19,5	100	104	154	20	4	275,60	202	305,30	202	275,60	202	305,30	202

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 338+339

End milling cutter

W | λ_s=38° γ_s=17° | ZEFP | HPC | Ti1005






Factory standard | Factory standard

HA | HA

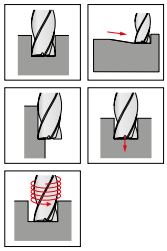
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 54 650 ...		V0 Article no. 54 652 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
6	19	5,8	30	70	6	5	64,15	062	76,49	062
8	25	7,7	40	80	8	5	82,54	082	94,79	082
10	31	9,7	50	94	10	5	127,80	102	142,30	102
12	37	11,6	60	109	12	5	203,80	122	219,30	122
14	43	13,6	70	119	14	5	331,80	142	347,20	142
16	49	15,5	80	132	16	7	369,30	162	385,80	162
18	56	17,5	90	142	18	7	460,60	182	478,40	182
20	62	19,5	100	154	20	7	511,40	202	531,30	202

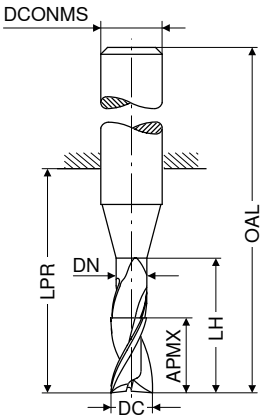
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

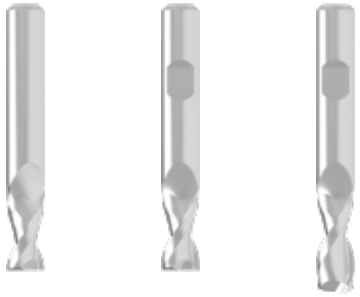
→ v_c/f_z Page 338+339

End milling cutter











Factory standard

HA



Factory standard

HB



Factory standard

HB

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 52 842 ...		V1 Article no. 52 841 ...		V1 Article no. 52 848 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
0,20	0,4			10	38	3	2	51,69	920				
0,25	0,5			10	38	3	2	45,85	925				
0,30	1,0			10	38	3	2	29,65	930				
0,35	1,0			10	38	3	2	29,65	935				
0,40	1,0			10	38	3	2	23,91	940				
0,50	1,5			10	38	3	2	21,49	950				
0,60	1,5			10	38	3	2	21,49	960				
0,70	2,0			10	38	3	2	21,49	970				
0,80	2,0			10	38	3	2	21,49	980				
0,90	2,5			10	38	3	2	21,49	990				
1,00	3,0			10	38	3	2	21,49	010				
1,00	4,0	0,90	6	22	58	6	2					31,52	010
1,10	3,0			10	38	3	2	21,49	011				
1,20	4,0			10	38	3	2	21,49	012				
1,30	4,0			10	38	3	2	22,60	013				
1,40	4,0			10	38	3	2	22,60	014				
1,50	3,0	1,40	6	18	54	6	2	29,65	015	29,65	015		
1,50	4,0			10	38	3	2	22,60	915				
1,50	6,0	1,40	8	22	58	6	2					31,52	015
1,60	4,0			10	38	3	2	24,02	016				
1,80	5,0			10	38	3	2	24,02	018				
2,00	4,0	1,90	8	18	54	6	2	28,43	020	28,43	020		
2,00	7,0	1,90	10	22	58	6	2					31,52	020
2,50	4,0	2,40	8	18	54	6	2			28,43	025		
2,50	6,0			10	38	3	2	22,60	025				
2,80	4,0	2,70	9	18	54	6	2	32,73	028	32,73	028		
2,80	7,0	2,70	12	22	58	6	2					33,96	028
3,00	6,0	2,90	9	18	54	6	2	28,43	030	28,43	030		
3,00	10,0	2,90	14	22	58	6	2					31,52	030
3,50	6,0	3,30	9	18	54	6	2			28,43	035		
3,80	7,0	3,60	12	18	54	6	2	32,73	038	32,73	038		
3,80	10,0	3,60	18	22	58	6	2					33,96	038
4,00	7,0	3,80	12	18	54	6	2	28,22	040	28,22	040		
4,00	13,0	3,80	18	22	58	6	2					31,52	040
4,50	7,0	4,30	12	18	54	6	2			28,43	045		
4,80	8,0	4,60	16	18	54	6	2	32,73	048	32,73	048		
4,80	13,0	4,60	18	22	58	6	2					33,96	048
5,00	8,0	4,80	16	18	54	6	2	28,22	050	28,22	050		
5,00	15,0	4,80	18	22	58	6	2					31,52	050

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

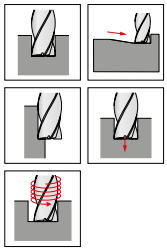
→ v_c/f_z Page 350–353

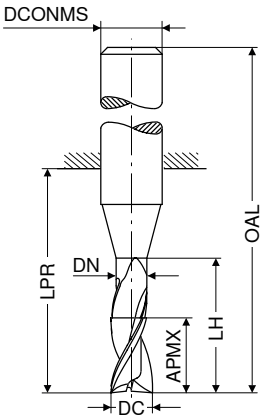
14

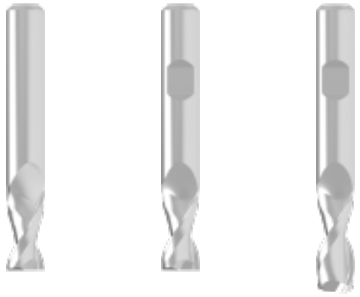
Continued on next page

End milling cutter











Factory standard

HA



Factory standard

HB



Factory standard

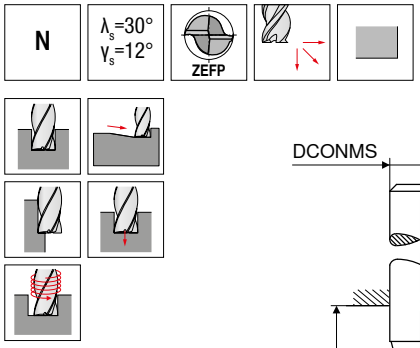
HB

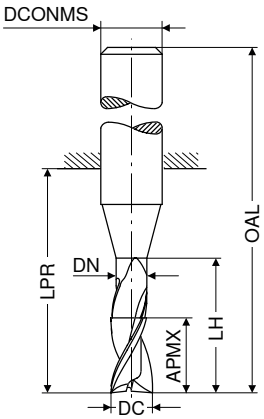
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 52 842 ...		V1 Article no. 52 841 ...		V1 Article no. 52 848 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
5,50	8,0	5,30	16	18	54	6	2			28,43	055		
5,75	10,0	5,55	16	18	54	6	2	32,73	057	32,73	057		
5,75	15,0	5,55	18	22	58	6	2					34,83	057
6,00	10,0	5,80	16	18	54	6	2	28,22	060	28,22	060		
6,00	16,0	5,80	20	22	58	6	2					31,52	060
6,75	10,0	6,45	16	23	59	8	2	37,80	067	37,80	067		
6,75	16,0	6,45	23	34	70	8	2					42,33	067
7,00	12,0	6,70	18	23	59	8	2			36,59	070		
7,00	16,0	6,70	23	34	70	8	2					37,14	070
7,75	12,0	7,45	18	23	59	8	2	36,48	077	36,48	077		
7,75	16,0	7,45	23	34	70	8	2					39,68	077
8,00	12,0	7,70	20	23	59	8	2	31,52	080	31,52	080		
8,00	22,0	7,70	25	34	70	8	2					36,38	080
8,70	12,0	8,40	20	27	67	10	2			60,62	087		
8,70	12,0	8,40	22	27	67	10	2	60,62	087				
9,00	13,0	8,70	22	27	67	10	2			59,40	090		
9,00	22,0	8,70	28	33	73	10	2					66,02	090
9,70	13,0	9,40	22	27	67	10	2	58,64	097	58,64	097		
9,70	22,0	9,40	28	33	73	10	2					67,44	097
10,00	13,0	9,70	24	27	67	10	2	49,71	100	49,71	100		
10,00	25,0	9,70	30	33	73	10	2					63,71	100
11,00	25,0	10,60	32	39	84	12	2					89,82	110
11,70	16,0	11,30	24	28	73	12	2	84,31	117	84,31	117		
11,70	25,0	11,30	32	39	84	12	2					90,82	117
12,00	16,0	11,60	26	28	73	12	2	69,33	120	69,33	120		
12,00	26,0	11,60	35	39	84	12	2					85,52	120
13,70	16,0	13,30	26	30	75	14	2	113,60	137	113,60	137		
13,70	26,0	13,30	35	39	84	14	2					120,10	137
14,00	16,0	13,60	28	30	75	14	2	95,77	140	95,77	140		
14,00	26,0	13,60	35	39	84	14	2					111,30	140
15,70	20,0	15,20	30	35	83	16	2	130,00	157	130,00	157		
16,00	20,0	15,50	32	35	83	16	2	104,20	160	104,20	160		
16,00	30,0	15,50	40	45	93	16	2					133,30	160
17,70	20,0	17,20	32	37	85	18	2	172,00	177	172,00	177		
18,00	20,0	17,50	34	37	85	18	2	137,80	180	137,80	180		
18,00	30,0	17,50	40	45	93	18	2					166,50	180
19,70	25,0	19,20	38	43	93	20	2	207,30	197	207,30	197		
20,00	25,0	19,50	40	43	93	20	2	176,30	200	176,30	200		
20,00	40,0	19,50	50	54	104	20	2					217,10	200

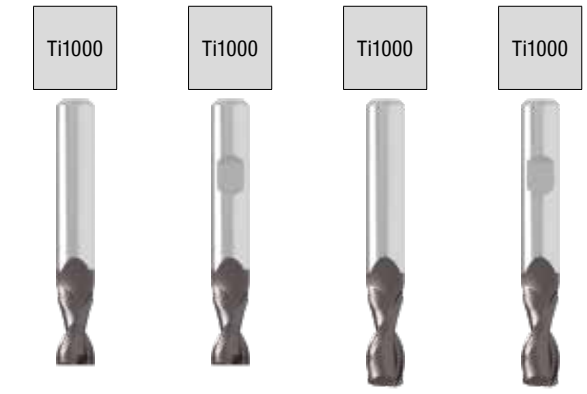
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

→ v_c/f_z Page 350–353

End milling cutter











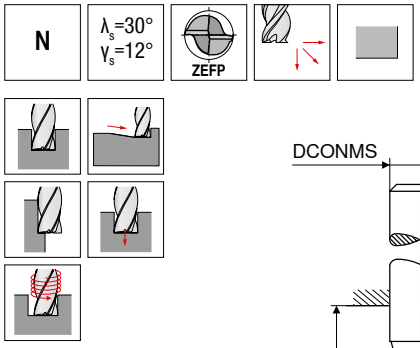
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 52 843 ...		V1 Article no. 52 844 ...		V1 Article no. 52 847 ...		V1 Article no. 52 849 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
0,20	0,4			10	38	3	2	57,76	920						
0,25	0,5			10	38	3	2	57,76	925						
0,30	1,0			10	38	3	2	39,24	930						
0,35	1,0			10	38	3	2	39,24	935						
0,40	1,0			10	38	3	2	32,62	940						
0,50	1,5			10	38	3	2	29,98	950						
0,60	1,5			10	38	3	2	29,98	960						
0,70	2,0			10	38	3	2	29,98	970						
0,80	2,0			10	38	3	2	29,98	980						
0,90	2,5			10	38	3	2	29,98	990						
1,00	3,0			10	38	3	2	29,98	010						
1,00	4,0	0,90	6	22	58	6	2					44,09	010	44,09	010
1,10	3,0			10	38	3	2	29,98	011						
1,20	4,0			10	38	3	2	29,98	012						
1,30	4,0			10	38	3	2	29,98	013						
1,40	4,0			10	38	3	2	31,09	014						
1,50	3,0	1,40	6	18	54	6	2	36,15	015	36,15	015				
1,50	4,0			10	38	3	2	31,09	915						
1,50	6,0	1,40	8	22	58	6	2					44,09	015	44,09	015
1,60	4,0			10	38	3	2	32,73	016						
1,80	5,0			10	38	3	2	32,73	018						
2,00	4,0	1,90	8	18	54	6	2	40,01	020	40,01	020				
2,00	5,0			10	38	3	2	32,73	021						
2,00	7,0	1,90	10	22	58	6	2					44,09	020	44,09	020
2,50	4,0	2,40	8	18	54	6	2	40,01	025	40,01	025				
2,50	6,0			10	38	3	2	34,61	026						
2,80	4,0	2,70	9	18	54	6	2	45,30	028	45,30	028				
2,80	7,0	2,70	12	22	58	6	2					45,96	028	45,96	028
3,00	6,0	2,90	9	18	54	6	2	40,01	030	40,01	030				
3,00	6,0			10	38	3	2	34,61	031						
3,00	10,0	2,90	14	22	58	6	2					44,09	030	44,09	030
3,50	6,0	3,30	9	18	54	6	2	43,09	035	43,09	035				
3,80	7,0	3,60	12	18	54	6	2	45,30	038	45,30	038				
3,80	10,0	3,60	18	22	58	6	2					45,96	038	45,96	038
4,00	7,0	3,80	12	18	54	6	2	40,01	040	40,01	040				
4,00	13,0	3,80	18	22	58	6	2					44,09	040	44,09	040
4,50	7,0	4,30	12	18	54	6	2	43,09	045	43,09	045				
4,80	8,0	4,60	16	18	54	6	2	45,30	048	45,30	048				
4,80	13,0	4,60	18	22	58	6	2					45,96	048	45,96	048
5,00	8,0	4,80	16	18	54	6	2	40,01	050	40,01	050				
5,00	15,0	4,80	18	22	58	6	2					44,09	050	44,09	050
5,50	8,0	5,30	16	18	54	6	2	43,09	055	43,09	055				

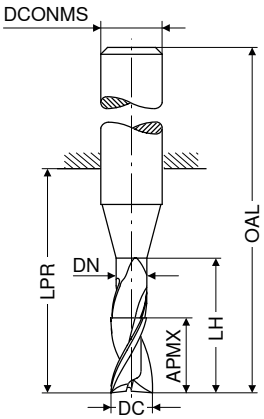
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

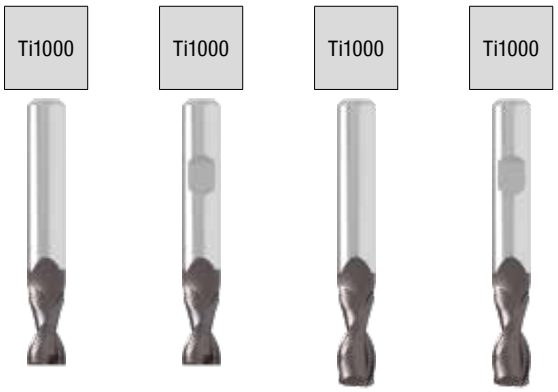
→ v_c/f_z Page 350–353

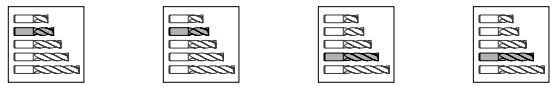
Continued on next page

End milling cutter









Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

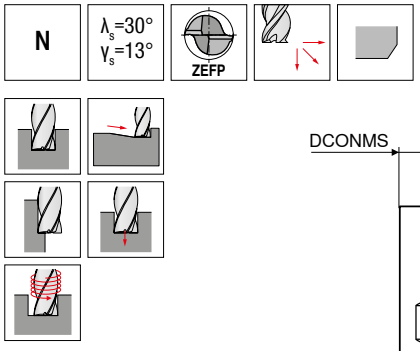
V1 | V1 | V1 | V1

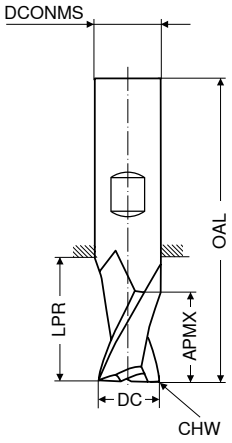
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 843 ...		Article no. 52 844 ...		Article no. 52 847 ...		Article no. 52 849 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
5,75	10,0	5,55	16	18	54	6	2	45,30	057	45,30	057				
5,75	15,0	5,55	18	22	58	6	2					46,96	057	46,96	057
6,00	10,0	5,80	16	18	54	6	2	40,01	060	40,01	060				
6,00	16,0	5,80	20	22	58	6	2					44,09	060	44,09	060
6,75	16,0	6,45	23	34	70	8	2					59,96	067	59,96	067
6,75	10,0	6,45	16	23	59	8	2			54,44	067				
7,00	12,0	6,70	18	23	59	8	2	56,43	070	56,43	070				
7,00	16,0	6,70	23	34	70	8	2					54,11	070	54,11	070
7,75	16,0	7,45	23	34	70	8	2					56,76	077	56,76	077
7,75	12,0	7,45	18	23	59	8	2	52,46	077	52,46	077				
8,00	12,0	7,70	20	23	59	8	2	48,28	080	48,28	080				
8,00	22,0	7,70	25	34	70	8	2					53,24	080	53,24	080
8,70	12,0	8,40	20	27	67	10	2			84,09	087				
9,00	13,0	8,70	22	27	67	10	2	80,12	090	80,12	090				
9,00	22,0	8,70	28	33	73	10	2					91,15	090	91,15	090
9,70	13,0	9,40	22	27	67	10	2	82,12	097	82,12	097				
9,70	22,0	9,40	28	33	73	10	2					92,91	097	92,91	097
10,00	13,0	9,70	24	27	67	10	2	71,20	100	71,20	100				
10,00	25,0	9,70	30	33	73	10	2					89,82	100	89,82	100
11,00	25,0	10,60	32	39	84	12	2					123,50	110	123,50	110
11,70	16,0	11,30	24	28	73	12	2	117,90	117	117,90	117				
11,70	25,0	11,30	32	39	84	12	2					125,70	117	125,70	117
12,00	26,0	11,60	35	39	84	12	2					121,30	120	121,30	120
12,00	16,0	11,60	26	28	73	12	2	98,86	120	98,86	120				
13,70	16,0	13,30	26	30	75	14	2			155,50	137				
13,70	26,0	13,30	35	39	84	14	2					159,90	137	159,90	137
14,00	26,0	13,60	35	39	84	14	2					155,50	140	155,50	140
14,00	16,0	13,60	28	30	75	14	2	132,30	140	132,30	140				
15,70	20,0	15,20	30	35	83	16	2			179,60	157				
16,00	20,0	15,50	32	35	83	16	2	149,90	160	149,90	160				
16,00	30,0	15,50	40	45	93	16	2					196,30	160	196,30	160
17,70	20,0	17,20	32	37	85	18	2			232,50	177				
18,00	20,0	17,50	34	37	85	18	2	191,80	180	191,80	180				
18,00	30,0	17,50	40	45	93	18	2					231,50	180	231,50	180
19,70	25,0	19,20	38	43	93	20	2			280,00	197				
20,00	25,0	19,50	40	43	93	20	2	240,20	200	240,20	200				
20,00	40,0	19,50	50	54	104	20	2					296,50	200	296,50	200

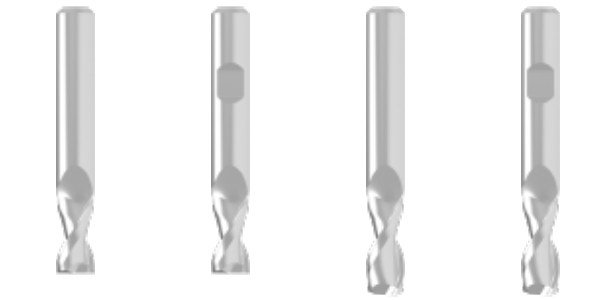
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–353

End milling cutter







							Factory standard		Factory standard		≈DIN 6527		≈DIN 6527		
							HA		HB		HA		HB		
							V0		V0		V0		V0		
DC e8	APMX	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 50 593 ...		Article no. 50 593 ...		Article no. 50 594 ...		Article no. 50 594 ...		
mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		
0,25	0,5	10	38	3,0		2					29,10	925			
0,30	1,0	10	38	3,0		2					29,10	930			
0,35	1,0	10	38	3,0		2					29,10	935			
0,40	1,0	10	38	3,0		2					29,10	940			
0,50	1,5	10	38	3,0		2					29,10	950			
0,60	1,5	10	38	3,0		2					29,10	960			
0,70	2,0	10	38	3,0		2					29,10	970			
0,80	2,0	10	38	3,0		2					29,10	980			
0,90	2,5	10	38	3,0		2					29,10	990			
1,00	3,0	22	50	3,0		2					29,98	010			
1,10	3,0	22	50	3,0		2					29,98	011			
1,20	4,0	22	50	3,0		2					29,98	012			
1,40	4,0	22	50	3,0		2					29,98	014			
1,50	4,0	22	50	3,0		2					29,98	015			
1,60	4,0	22	50	3,0		2					29,98	016			
1,80	5,0	22	50	3,0		2					29,98	018			
2,00	5,0	22	50	3,0	0,07	2					29,98	020			
2,00	8,0	8	32	2,0	0,07	2	14,10	020							
2,50	6,0	22	50	3,0	0,07	2					29,98	025			
2,50	8,0	8	32	2,5	0,07	2	14,10	025							
2,80	8,0	21	57	6,0	0,07	2							24,58	028	
3,00	8,0	21	57	6,0	0,15	2							24,58	030	
3,00	12,0	12	32	3,0	0,15	2	14,10	030							
3,50	12,0	12	32	3,5	0,15	2	14,10	035							
3,80	11,0	21	57	6,0	0,15	2							24,58	038	
4,00	11,0	21	57	6,0	0,15	2							24,58	040	
4,00	12,0	12	40	4,0	0,15	2	14,44	040							
4,50	14,0	22	50	4,5	0,15	2	17,86	045							
4,80	13,0	21	57	6,0	0,15	2							24,58	048	
5,00	13,0	21	57	6,0	0,15	2							24,58	050	
5,00	14,0	22	50	5,0	0,15	2	17,86	050							
5,50	16,0	22	50	5,5	0,15	2	20,28	055							
5,80	13,0	21	57	6,0	0,15	2							24,58	058	
6,00	13,0	21	57	6,0	0,15	2							24,58	060	
6,00	16,0	14	50	6,0	0,15	2			20,28	060					
6,50	16,0	16	50	6,5	0,15	2	27,33	065							
6,80	16,0	27	63	8,0	0,15	2							28,77	068	
7,00	16,0	27	63	8,0	0,15	2							28,77	070	
7,00	20,0	24	60	7,0	0,15	2	27,33	070							
7,50	20,0	24	60	7,5	0,15	2	27,66	075							
7,80	19,0	27	63	8,0	0,15	2							28,77	078	

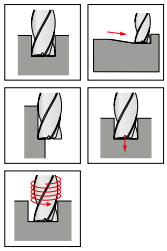
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

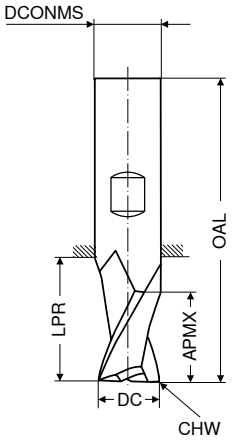
→ v_c/f_z Page 350–353

Continued on next page

End milling cutter










Factory standard
HA
V0


Factory standard
HB
V0


≈DIN 6527
HA
V0

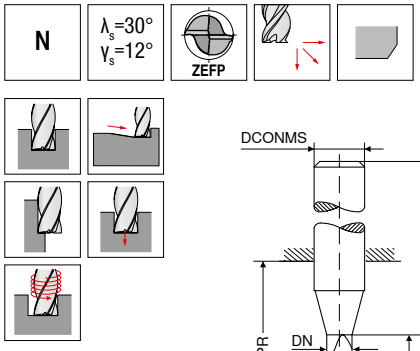

≈DIN 6527
HB
V0

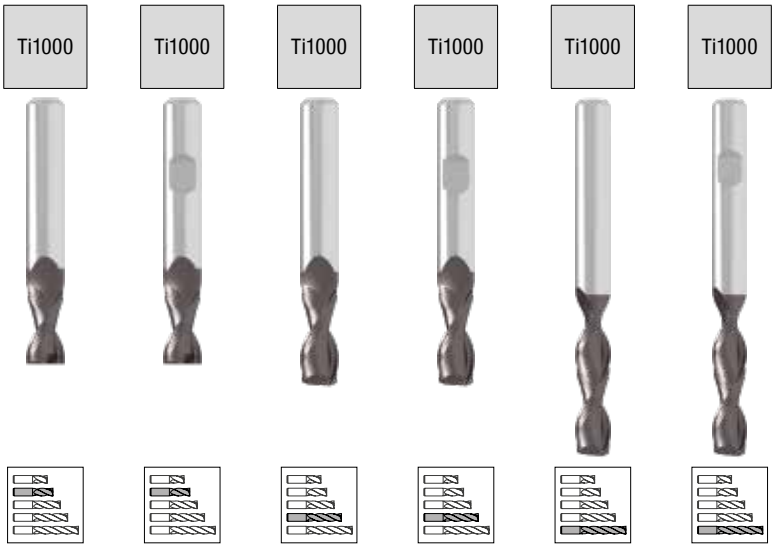
DC e8 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 593 ... EUR		Article no. 50 593 ... EUR		Article no. 50 594 ... EUR		Article no. 50 594 ... EUR	
8,00	18,0	24	60	8,0	0,15	2			27,66	**080**				
8,00	19,0	27	63	8,0	0,15	2							28,77	**080**
8,50	20,0	24	60	8,5	0,15	2	36,81	**085**						
8,70	19,0	32	72	10,0	0,15	2							44,64	**087**
9,00	19,0	32	72	10,0	0,15	2							44,64	**090**
9,00	20,0	24	60	9,0	0,15	2	36,81	**090**						
9,50	22,0	34	70	9,5	0,15	2	43,98	**095**						
9,70	22,0	32	72	10,0	0,15	2							44,64	**097**
10,00	20,0	30	70	10,0	0,15	2			43,98	**100**				
10,00	22,0	32	72	10,0	0,15	2							44,64	**100**
10,70	26,0	38	83	12,0	0,15	2							69,11	**107**
11,00	22,0	30	70	11,0	0,15	2	57,87	**110**						
11,00	26,0	38	83	12,0	0,15	2							69,11	**110**
11,70	26,0	38	83	12,0	0,15	2							69,11	**117**
12,00	20,0	25	70	12,0	0,15	2			57,87	**120**				
12,00	26,0	38	83	12,0	0,15	2							65,92	**120**
13,00	25,0	30	75	13,0	0,15	2	83,32	**130**						
13,70	26,0	38	83	14,0	0,15	2							84,43	**137**
14,00	22,0	30	75	14,0	0,15	2			78,47	**140**				
14,00	26,0	38	83	14,0	0,15	2							84,43	**140**
15,00	25,0	30	75	15,0	0,15	2	110,00	**150**						
15,70	32,0	44	92	16,0	0,15	2							112,40	**157**
16,00	22,0	27	75	16,0	0,15	2			103,50	**160**				
16,00	32,0	44	92	16,0	0,15	2							100,70	**160**
17,70	32,0	44	92	18,0	0,15	2							184,10	**177**
18,00	30,0	52	100	18,0	0,15	2			145,50	**180**				
18,00	32,0	44	92	18,0	0,15	2							131,30	**180**
19,70	38,0	54	104	20,0	0,15	2							245,80	**197**
20,00	30,0	50	100	20,0	0,15	2			147,80	**200**				
20,00	38,0	54	104	20,0	0,15	2							166,50	**200**

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

→ v_c/f_z Page 350–353

End milling cutter





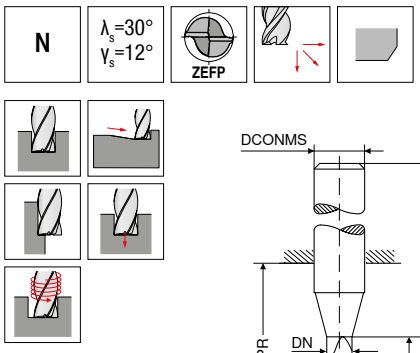
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HA		HB		HA		HB		HA	HB
									V1		V1		V1		V1		V1	V1
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 839 ...		Article no. 52 840 ...		Article no. 52 845 ...		Article no. 52 846 ...		Article no. 52 850 ...	Article no. 52 851 ...
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR	EUR
2,00	4	1,90	8	18	54	6	0,04	2	35,05	020	35,05	020						
2,00	5			10	38	3	0,04	2	30,31	021								
2,00	6			22	38	2	0,04	2					44,09	020				
2,00	7	1,90	10	22	58	6	0,04	2							38,36	020		
2,50	4	2,40	8	18	54	6	0,07	2	35,05	025	35,05	025						
2,50	6			10	38	3	0,07	2	35,05	026								
2,80	4	2,70	9	18	54	6	0,07	2	39,79	028	39,79	028						
2,80	7			22	38	3	0,07	2					48,61	028				
2,80	7	2,70	12	22	58	6	0,07	2							40,01	028		
3,00	6	2,90	9	18	54	6	0,07	2	35,05	030	35,05	030						
3,00	6			10	38	3	0,07	2	35,05	031								
3,00	7			22	38	3	0,07	2					44,09	030				
3,00	10	2,90	14	22	58	6	0,07	2							38,36	030		
3,00	20	2,90	24	32	60	3	0,07	2									55,21	030
3,50	6	3,30	9	18	54	6	0,07	2	37,80	035	37,80	035						
3,80	7	3,60	12	18	54	6	0,07	2	39,79	038	39,79	038						
3,80	8	3,60	20	22	50	4	0,07	2					48,61	038				
3,80	10	3,60	18	22	58	6	0,07	2							40,01	038		
4,00	7	3,80	12	18	54	6	0,07	2	35,05	040	35,05	040						
4,00	8	3,80	20	22	50	4	0,07	2					44,09	040				
4,00	13	3,80	18	22	58	6	0,07	2							38,36	040		
4,00	30	3,80	35	47	75	4	0,07	2									60,84	040
4,50	7	4,30	12	18	54	6	0,12	2	37,80	045	37,80	045						
4,80	8	4,60	16	18	54	6	0,12	2	39,79	048	39,79	048						
4,80	10	4,60	20	22	50	5	0,12	2					48,61	048				
4,80	13	4,60	18	22	58	6	0,12	2							40,01	048		
5,00	8	4,80	16	18	54	6	0,12	2	35,05	050	35,05	050						
5,00	10	4,80	20	22	50	5	0,12	2					44,09	050				
5,00	15	4,80	18	22	58	6	0,12	2							38,36	050		
5,00	30	4,80	35	47	75	5	0,12	2									65,14	050
5,50	8	5,30	16	18	54	6	0,12	2	37,80	055	37,80	055						
5,75	10	5,55	16	18	54	6	0,12	2	44,19	057	44,19	057						
5,75	15	5,55	18	22	58	6	0,12	2					49,60	057	49,60	057		
6,00	10	5,80	16	18	54	6	0,12	2	35,05	060	35,05	060						
6,00	16	5,80	20	22	58	6	0,12	2					44,09	060	44,09	060		
6,00	40	5,80	60	64	100	6	0,12	2									75,39	060
6,75	16	6,45	23	34	70	8	0,12	2					70,54	067	70,54	067		
7,00	12	6,70	18	23	59	8	0,12	2	49,71	070	49,71	070						
7,00	16	6,70	23	34	70	8	0,12	2					63,48	070	63,48	070		

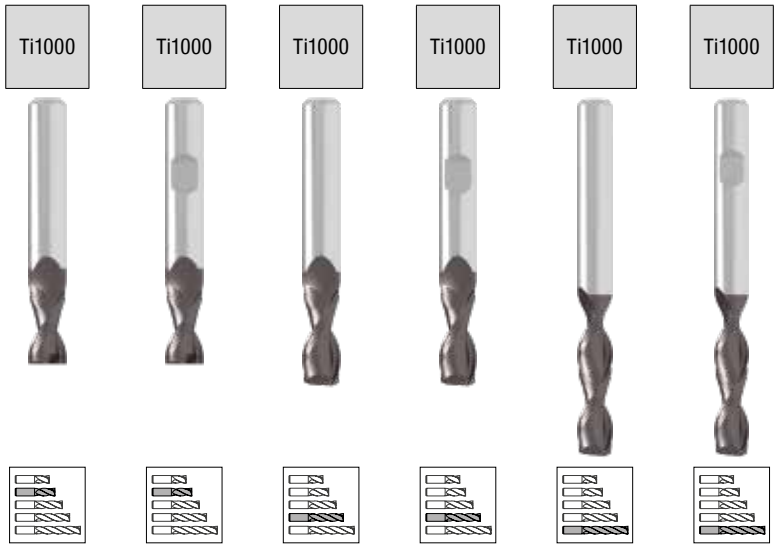
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials	○	○	○	○	○	○

→ v_c/f_z Page 350–355

Continued on next page

End milling cutter





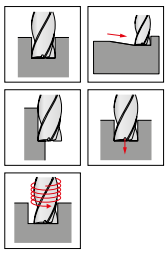
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Factory standard HA V1 Article no. 52 839 ...		Factory standard HB V1 Article no. 52 840 ...		Factory standard HA V1 Article no. 52 845 ...		Factory standard HB V1 Article no. 52 846 ...		Factory standard HA V1 Article no. 52 850 ...		Factory standard HB V1 Article no. 52 851 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
7,75	12	7,45	18	23	59	8	0,12	2	49,82	077	49,82	077								
7,75	16	7,45	23	34	70	8	0,12	2					60,94	077	60,94	077				
8,00	12	7,70	20	23	59	8	0,12	2	43,09	080	43,09	080								
8,00	22	7,70	25	34	70	8	0,12	2					53,24	080	53,24	080				
8,00	40	7,70	60	64	100	8	0,12	2									87,17	080	87,17	080
9,00	13	8,70	22	27	67	10	0,20	2	70,54	090	70,54	090								
9,00	22	8,70	28	33	73	10	0,20	2					101,40	090	101,40	090				
9,70	13	9,40	22	27	67	10	0,20	2	77,04	097	77,04	097								
9,70	22	9,40	28	33	73	10	0,20	2					103,60	097	103,60	097				
10,00	13	9,70	24	27	67	10	0,20	2	66,24	100	66,24	100								
10,00	25	9,70	30	33	73	10	0,20	2					89,82	100	89,82	100				
10,00	40	9,70	55	60	100	10	0,20	2									121,30	100	121,30	100
11,00	25	10,60	32	39	84	12	0,20	2					137,80	110	137,80	110				
11,70	16	11,30	24	28	73	12	0,20	2	108,30	117	108,30	117								
11,70	25	11,30	32	39	84	12	0,20	2					140,00	117	140,00	117				
12,00	16	11,60	26	28	73	12	0,20	2	91,37	120	91,37	120								
12,00	26	11,60	35	39	84	12	0,20	2					121,30	120	121,30	120				
12,00	45	11,60	50	55	100	12	0,20	2									161,00	120	161,00	120
13,70	26	13,30	35	39	84	14	0,20	2					177,50	137	177,50	137				
14,00	16	13,60	28	30	75	14	0,20	2	123,50	140	123,50	140								
14,00	26	13,60	35	39	84	14	0,20	2					155,50	140	155,50	140				
16,00	20	15,50	32	35	83	16	0,20	2	131,30	160	131,30	160								
16,00	30	15,50	40	45	93	16	0,20	2					196,30	160	196,30	160				
16,00	65	15,50	90	102	150	16	0,20	2									370,30	160	370,30	160
18,00	20	17,50	34	37	85	18	0,20	2	175,20	180	175,20	180								
18,00	30	17,50	40	45	93	18	0,20	2					231,50	180	231,50	180				
20,00	25	19,50	40	43	93	20	0,30	2	221,50	200	221,50	200								
20,00	40	19,50	50	54	104	20	0,30	2					296,50	200	296,50	200				
20,00	65	19,50	90	100	150	20	0,30	2									457,40	200	457,40	200

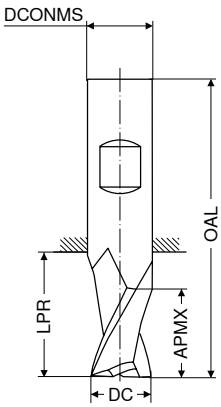
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials	○	○	○	○	○	○

→ v_c/f_z Page 350–355

End milling cutter









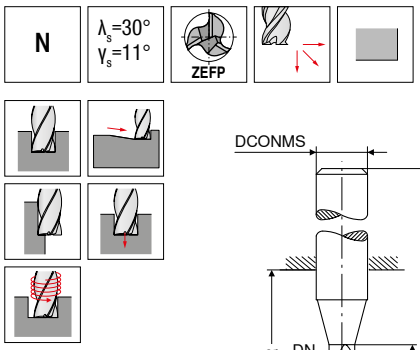
DC e8	APMX	LPR	OAL	DCONMS h5	ZEFP	≈DIN 6527 HB V0 Article no. 50 614 ...		≈DIN 6527 HB V0 Article no. 50 614 ...	
mm	mm	mm	mm	mm		EUR		EUR	
3,0	8	21	57	6	3	26,88	030		
3,5	11	21	57	6	3	29,10	035		
3,5	15	23	59	6	3			44,86	036
4,0	11	21	57	6	3	26,88	040		
4,0	19	27	63	6	3			44,97	041
4,5	13	21	57	6	3	29,10	045		
4,5	19	27	63	6	3			44,86	046
5,0	13	21	57	6	3	26,56	050		
5,0	24	32	68	6	3			48,93	051
5,5	13	21	57	6	3	29,10	055		
5,5	24	32	68	6	3			48,93	056
6,0	13	21	57	6	3	26,88	060		
6,0	24	32	68	6	3			47,39	061
6,5	16	27	63	8	3	35,05	065		
6,5	30	44	80	8	3			67,44	066
7,0	16	27	63	8	3	33,73	070		
7,0	30	44	80	8	3			67,44	071
7,5	19	27	63	8	3	32,07	075		
7,5	30	44	80	8	3			67,44	076
8,0	19	27	63	8	3	30,97	080		
8,0	38	52	88	8	3			61,84	081
8,5	19	32	72	10	3	48,38	085		
8,5	38	48	88	10	3			106,50	086
9,0	19	32	72	10	3	48,38	090		
9,0	38	48	88	10	3			106,50	091
9,5	22	32	72	10	3	55,44	095		
9,5	38	48	88	10	3			106,50	096
10,0	22	32	72	10	3	49,48	100		
10,0	45	55	95	10	3			103,60	101
11,0	26	38	83	12	3	78,47	110		
11,0	45	57	102	12	3			149,90	111
12,0	26	38	83	12	3	71,31	120		
12,0	53	65	110	12	3			149,90	121
14,0	26	38	83	14	3	91,70	140		
14,0	53	65	110	14	3			191,80	141
16,0	32	44	92	16	3	125,70	160		
16,0	63	75	123	16	3			260,10	161
18,0	32	44	92	18	3	152,10	180		
18,0	63	75	123	18	3			315,20	181
20,0	38	54	104	20	3	197,30	200		
20,0	75	91	141	20	3			419,90	201

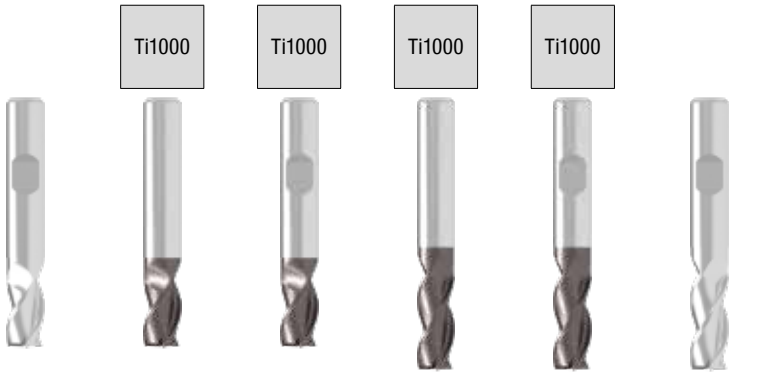
Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 350–355

14

End milling cutter





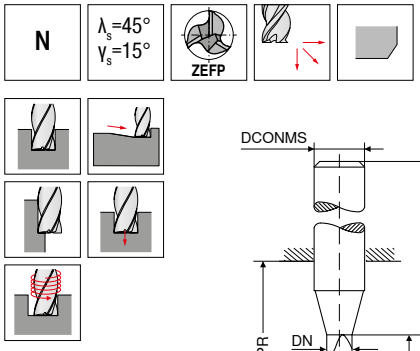


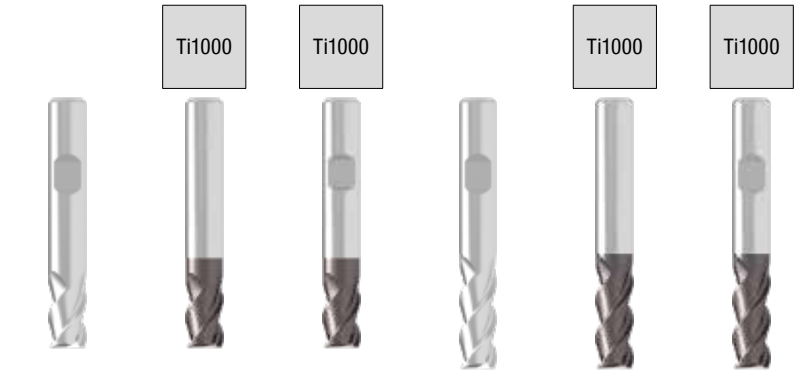
								Factory standard		Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
								HB		HA		HB		HA		HB		HB	
								V1		V1		V1		V1		V1		V1	
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 823 ...		Article no. 52 821 ...		Article no. 52 822 ...		Article no. 52 826 ...		Article no. 52 827 ...		Article no. 52 828 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
1,00	4	1,00		22	58	6	3							43,98	010	43,98	010	31,52	010
1,50	3	1,40	6	18	54	6	3	27,66	015	39,90	015	39,90	015						
1,50	3	1,40	6	10	38	3	3			33,96	016								
1,50	6	1,50		22	58	6	3							43,98	015	43,98	015	31,52	015
2,00	4	1,90	8	18	54	6	3	28,22	020	39,90	020	39,90	020						
2,00	4	1,90	8	10	38	3	3			33,96	021								
2,00	7	2,00		22	58	6	3							43,98	020	43,98	020	31,52	020
2,50	4	2,40	8	18	54	6	3	28,22	025	39,24	025	39,24	025						
2,50	4	2,40	8	10	38	3	3			33,96	026								
2,80	6	2,70	9	18	54	6	3	33,06	028	42,66	028	42,66	028						
3,00	6	2,90	9	18	54	6	3	28,22	030	39,90	030	39,90	030						
3,00	6	2,90	9	10	38	3	3			33,96	031								
3,00	10	2,90	14	22	58	6	3							43,98	030	43,98	030	31,52	030
3,50	6	3,30	9	18	54	6	3	28,22	035	39,24	035	39,24	035						
3,80	6	3,60	12	18	54	6	3	33,06	038	42,66	038	42,66	038						
4,00	7	3,80	12	18	54	6	3	28,22	040	39,90	040	39,90	040						
4,00	13	3,80	17	22	58	6	3							43,98	040	43,98	040	31,52	040
4,50	7	4,30	12	18	54	6	3	28,22	045	39,24	045	39,24	045						
4,80	8	4,60	16	18	54	6	3	33,06	048	42,66	048	42,66	048						
5,00	8	4,80	16	18	54	6	3	28,22	050	39,90	050	39,90	050						
5,00	15	4,80	19	22	58	6	3							43,98	050	43,98	050	31,52	050
5,50	8	5,30	16	18	54	6	3	28,22	055	39,24	055	39,24	055						
5,75	8	5,55	16	18	54	6	3	33,18	057	47,16	057	47,16	057						
6,00	10	5,80	16	18	54	6	3	28,22	060	39,90	060	39,90	060						
6,00	16	5,80	20	22	58	6	3							43,98	060	43,98	060	31,52	060
7,00	19	6,70	23	28	64	8	3							56,53	070	56,53	070	40,34	070
7,75	10	7,45	18	22	58	8	3	37,03	077	53,24	077	53,24	077						
8,00	12	7,70	20	23	59	8	3	31,52	080	46,61	080	46,61	080						
8,00	22	7,70	26	34	70	8	3							53,89	080	53,89	080	36,15	080
9,00	23	8,70	28	32	72	10	3							97,22	090	97,22	090	69,54	090
9,70	12	9,40	18	19	59	10	3	58,64	097	81,99	097	81,99	097						
10,00	13	9,70	24	27	67	10	3	49,82	100	71,75	100	71,75	100						
10,00	25	9,70	31	33	73	10	3							90,04	100	90,04	100	64,03	100
11,00	25	10,60	34	38	83	12	3							130,00	110	130,00	110	93,90	110
11,70	16	11,30	20	22	67	12	3	81,44	117	115,80	117	115,80	117						
12,00	16	11,60	26	28	73	12	3	69,33	120	98,75	120	98,75	120						
12,00	26	11,60	37	39	84	12	3							121,30	120	121,30	120	85,42	120
14,00	16	13,60	28	30	75	14	3	95,77	140	132,30	140	132,30	140						
14,00	26	13,60	37	39	84	14	3							154,30	140	154,30	140	111,30	140
16,00	20	15,50	32	35	83	16	3	104,20	160	151,00	160	151,00	160						
16,00	32	15,50	43	45	93	16	3							194,00	160	194,00	160	134,50	160
18,00	20	17,50	34	37	85	18	3	137,80	180	191,80	180	191,80	180						
18,00	32	17,50	43	45	93	18	3							231,50	180	231,50	180	165,40	180
20,00	25	19,50	40	43	93	20	3	175,20	200	240,20	200	240,20	200						
20,00	40	19,50	52	54	104	20	3							297,50	200	297,50	200	216,00	200

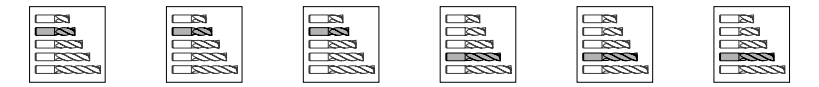
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials		○	○	○	○	

→ v_c/f_z Page 350–353

End milling cutter





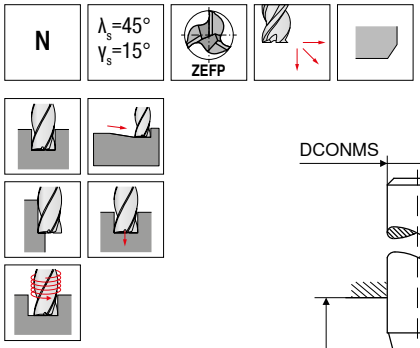


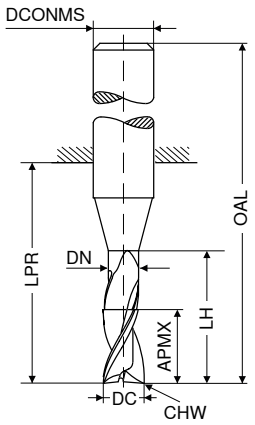
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HB		HA		HB		HB		HA		HB	
									V1		V1		V1		V1		V1		V1	
DC e8	APMX	DN	LH	LPR	OAL	CHW	DCONMS h6	ZEFP	Article no. 52 831 ...		Article no. 52 829 ...		Article no. 52 830 ...		Article no. 52 834 ...		Article no. 52 832 ...		Article no. 52 833 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
2,0	4	1,9	8	18	54	0,04	6	3	28,22	020	40,01	020	40,01	020						
2,0	7	1,9	10	22	58	0,04	6	3							31,52	020	44,97	020	44,97	020
2,5	5	2,4	8	18	54	0,07	6	3	28,22	025	39,68	025	39,68	025						
3,0	6	2,9	9	18	54	0,07	6	3	28,22	030	40,01	030	40,01	030						
3,0	10	2,9	14	22	58	0,07	6	3							31,52	030	44,97	030	44,97	030
4,0	7	3,8	12	18	54	0,07	6	3	28,22	040	40,01	040	40,01	040						
4,0	13	3,8	17	22	58	0,07	6	3							31,52	040	44,97	040	44,97	040
5,0	8	4,8	16	18	54	0,12	6	3	28,22	050	40,01	050	40,01	050						
5,0	15	4,8	19	22	58	0,07	6	3							31,52	050	44,97	050	44,97	050
6,0	10	5,8	16	18	54	0,12	6	3	28,22	060	40,01	060	40,01	060						
6,0	16	5,8	20	22	58	0,12	6	3							31,52	060	44,97	060	44,97	060
7,0	11	6,7	18	23	59	0,12	8	3	34,93	070	51,58	070	51,58	070						
7,0	19	6,7	23	34	70	0,12	8	3							38,91	070	56,53	070	56,53	070
8,0	12	7,7	20	23	59	0,12	8	3	31,52	080	47,16	080	47,16	080						
8,0	22	7,7	26	34	70	0,12	8	3							36,15	080	54,23	080	54,23	080
9,0	13	8,7	22	27	67	0,20	10	3	55,00	090	79,80	090	79,80	090						
9,0	23	8,7	28	33	73	0,12	10	3							69,54	090	97,22	090	97,22	090
10,0	14	9,7	24	27	67	0,20	10	3	49,82	100	71,75	100	71,75	100						
10,0	25	9,7	31	33	73	0,20	10	3							64,03	100	90,70	100	90,70	100
12,0	16	11,6	26	28	73	0,20	12	3	69,33	120	99,53	120	99,53	120						
12,0	28	11,6	37	39	84	0,20	12	3							85,42	120	122,30	120	122,30	120
14,0	18	13,6	28	30	75	0,20	14	3	95,77	140	133,30	140	133,30	140						
14,0	30	13,6	37	39	84	0,20	14	3							111,30	140	155,50	140	155,50	140
16,0	20	15,5	32	35	83	0,20	16	3	104,20	160	149,90	160	149,90	160						
16,0	35	15,5	43	45	93	0,20	16	3							134,50	160	197,30	160	197,30	160
18,0	20	17,5	34	37	85	0,20	18	3	137,80	180	194,00	180	194,00	180						
18,0	35	17,5	43	45	93	0,20	18	3							165,40	180	232,50	180	232,50	180
20,0	25	19,5	40	43	93	0,30	20	3	175,20	200	242,50	200	242,50	200						
20,0	40	19,5	52	54	104	0,20	20	3							216,00	200	296,50	200	296,50	200

Steel	○	○	○	○	○	○
Stainless steel	●	●	●	●	●	●
Cast iron	○	○	○	○	○	○
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened materials		○	○		○	○

→ v_c/f_z Page 350–353

End milling cutter







Factory standard | Factory standard

HA | HB

V1 | V1

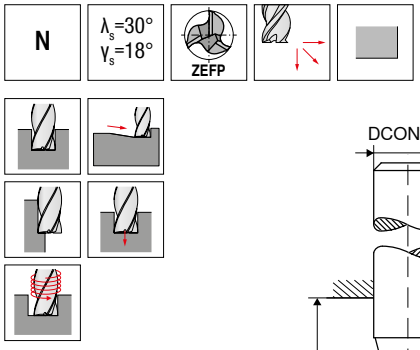
DC e8	DN	APMX	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 835 ...		Article no. 52 836 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3	3,0	20	20	24	60	6	0,07	3	87,72	030	87,72	030
4	3,8	30	35	39	75	6	0,07	3	87,72	040	87,72	040
5	4,8	30	35	39	75	6	0,12	3	87,72	050	87,72	050
6	5,8	40	60	64	100	6	0,12	3	84,75	060	84,75	060
8	7,7	40	60	64	100	8	0,12	3	96,66	080	96,66	080
10	9,7	40	55	60	100	10	0,20	3	127,80	100	127,80	100
12	11,6	45	50	55	100	12	0,20	3	175,20	120	175,20	120
14	13,6	45	50	55	100	14	0,20	3	267,80	140	267,80	140
16	15,5	65	90	102	150	16	0,20	3	394,60	160	394,60	160
18	17,5	65	90	102	150	18	0,20	3	403,40	180	403,40	180
20	19,5	65	90	100	150	20	0,30	3	457,40	200	457,40	200

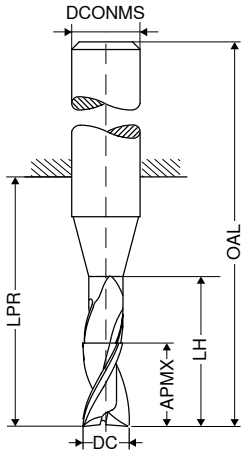
Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials	○	○

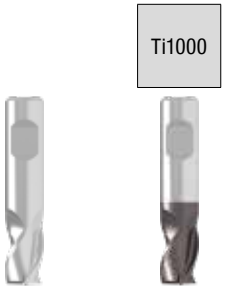
→ v_c/f_z Page 350–355

Mini milling cutter

▲ Shank similar to DIN 6535











Factory standard | Factory standard

HB | HB

V0 | V0

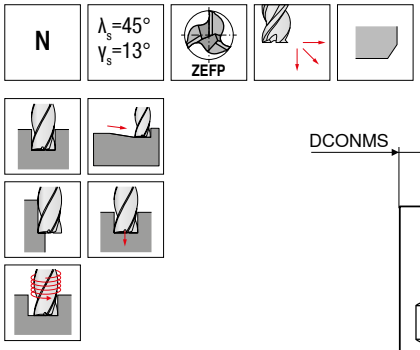
DC e8	APMX	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 598 ...		Article no. 50 599 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
2,00	4	4,0	10	35	6	3	16,97	**020**	23,81	**020**
2,50	4	4,0	10	35	6	3	18,30	**025**	25,24	**025**
3,00	5	5,0	10	36	6	3	16,97	**030**	23,81	**030**
3,50	5	5,0	10	36	6	3	18,30	**035**	25,36	**035**
4,00	7	7,0	12	38	6	3	16,97	**040**	23,81	**040**
4,50	7	7,0	12	38	6	3	18,30	**045**	25,36	**045**
5,00	8	8,0	13	39	6	3	16,97	**050**	23,81	**050**
5,50	8	8,0	13	39	6	3	18,30	**055**	25,36	**055**
5,75	8	8,0	13	39	6	3	18,30	**057**	25,36	**057**
6,00	8	8,5	13	39	6	3	16,97	**060**	23,81	**060**
6,75	11	11,5	16	43	8	3	24,14	**067**	32,29	**067**
7,00	11	11,5	16	43	8	3	23,25	**070**	29,98	**070**
7,75	11	11,5	16	43	8	3	24,36	**077**	32,62	**077**
8,00	11	11,5	16	43	8	3	26,68	**080**	32,07	**080**
8,70	13	13,5	18	50	10	3	38,03	**087**	47,83	**087**
9,00	13	13,5	18	50	10	3	34,72	**090**	44,30	**090**
9,70	13	13,5	18	50	10	3	38,03	**097**	47,83	**097**
10,00	13	13,5	18	50	10	3	37,80	**100**	45,85	**100**
12,00	15	15,5	24	55	12	3	49,26	**120**	59,52	**120**
14,00	15	15,5	26	58	14	3	84,31	**140**	94,45	**140**
16,00	18	18,5	28	62	16	3	94,57	**160**	108,00	**160**
18,00	20	20,5	35	70	18	3	120,10	**180**	134,50	**180**
20,00	22	22,5	40	75	20	3	152,10	**200**	166,50	**200**

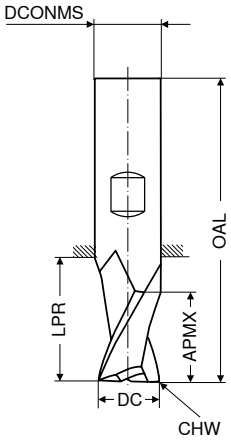
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		○

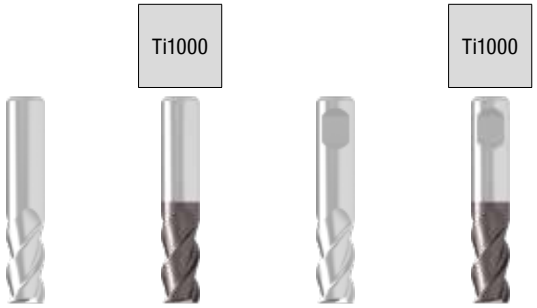
→ v_c/f_z Page 350–353

Mini milling cutter

▲ Shank similar to DIN 6535



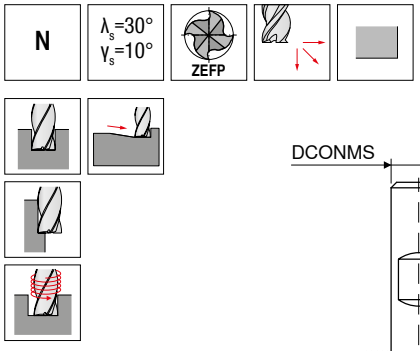


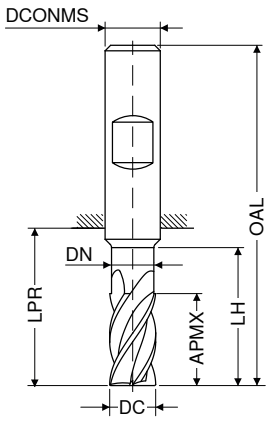


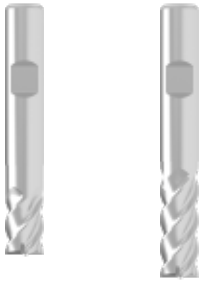
DC e8	APMX	LPR	OAL	DCONMS h5	CHW	ZEFP	Factory standard ~HA V0 Article no. 50 608 ...		Factory standard ~HA V0 Article no. 50 609 ...		Factory standard HB V0 Article no. 50 608 ...		Factory standard HB V0 Article no. 50 609 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
0,5	1,5	17	45	3	0,08	3	18,30	005	22,81	005				
1,0	2,0	17	45	3	0,08	3	18,30	010	22,81	010				
1,5	3,0	17	45	3	0,08	3	18,30	015	22,81	015				
1,8	3,0	17	45	3	0,08	3			22,81	018				
2,0	4,0	19	45	6	0,08	3					21,60	020	23,91	020
2,5	6,0	19	45	6	0,15	3					19,40	025	23,91	025
2,8	6,0	19	45	6	0,15	3							23,91	028
3,0	6,0	19	45	6	0,15	3					19,40	030	23,91	030
3,8	7,0	19	45	6	0,15	3							23,91	038
4,0	7,0	19	45	6	0,15	3					20,18	040	23,91	040
4,8	8,0	19	45	6	0,15	3							23,91	048
5,0	8,0	19	45	6	0,15	3					20,50	050	23,91	050
5,7	10,0	19	45	6	0,15	3							23,91	057
6,0	10,0	19	45	6	0,15	3					20,50	060	23,91	060
6,7	10,0	26	55	8	0,15	3							23,91	067
7,0	12,0	26	55	8	0,15	3					30,20	070	23,91	070
7,8	12,0	26	55	8	0,15	3							34,16	078
8,0	13,0	26	55	8	0,15	3					30,20	080	34,16	080
8,7	14,0	28	55	10	0,15	3							41,56	087
9,7	16,0	28	55	10	0,15	3							41,56	097
10,0	16,0	28	55	10	0,15	3					42,76	100	41,56	100
Steel							○		○		○		○	
Stainless steel							●		●		●		●	
Cast iron							○		○		○		○	
Non ferrous metals							○		○		○		○	
Heat resistant alloys							●		●		●		●	
hardened materials									●				●	

→ v_c/f_z Page 350–353

End milling cutter











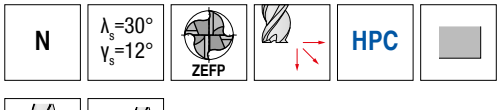
								Factory standard HB V1		Factory standard HB V1	
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 309 ...		Article no. 52 313 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
2	4	1,9	8	18	54	6	4	28,10	020		
2	7			22	58	6	4			31,41	020
3	6	2,9	9	18	54	6	4	28,10	030		
3	10	2,8	14	22	58	6	4			31,41	030
4	7	3,8	12	18	54	6	4	28,10	040		
4	13	3,8	17	22	58	6	4			31,41	040
5	8	4,8	16	18	54	6	4	28,10	050		
5	15	4,8	19	22	58	6	4			31,41	050
6	10	5,8	16	18	54	6	4	28,10	060		
6	16	5,7	20	22	58	6	4			31,41	060
7	19	6,7	23	27	63	8	4			39,01	070
8	12	7,7	20	22	58	8	4	31,41	080		
8	22	7,7	26	34	70	8	4			36,04	080
9	23	8,7	28	33	73	10	4			68,22	090
10	14	9,7	24	26	66	10	4	49,48	100		
10	25	9,6	31	33	73	10	4			63,71	100
11	26	10,6	34	39	84	12	4			90,04	110
12	16	11,6	26	28	73	12	4	68,89	120		
12	28	11,6	37	39	84	12	4			85,09	120
14	18	13,6	28	30	75	14	4	95,45	140		
14	30	13,6	37	36	84	14	4			110,20	140
16	22	15,5	32	34	82	16	4	103,60	160		
16	35	15,6	43	45	93	16	4			134,50	160
18	20	17,5	34	36	80	18	4	135,50	180		
18	35	17,6	43	43	93	18	4			165,40	180
20	25	19,5	40	42	92	20	4	174,10	200		
20	40	19,6	52	54	104	20	4			215,00	200

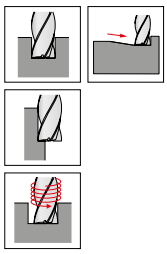
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

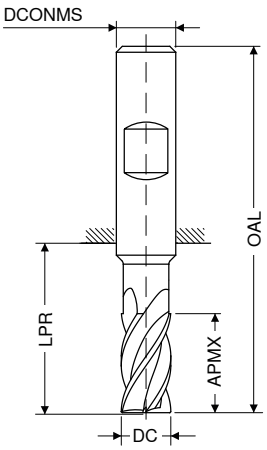
→ v_c/f_z Page 350–353

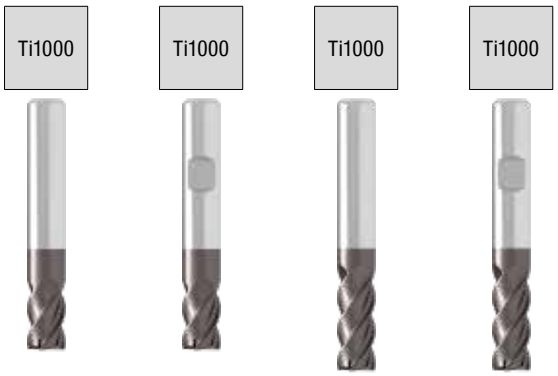
End milling cutter

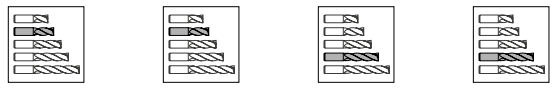
▲ Cutting edges with irregular pitch









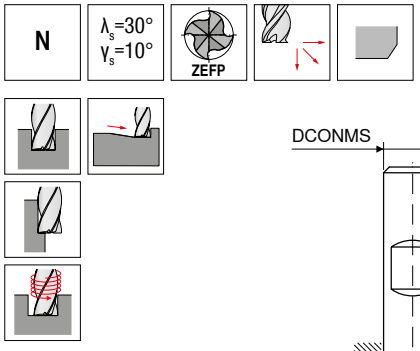


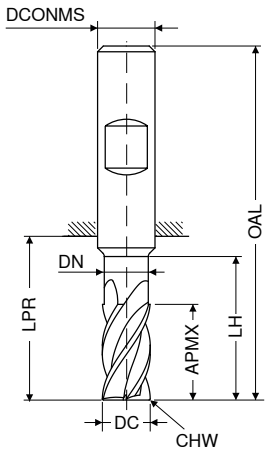
						DIN 6527		DIN 6527		DIN 6527		≈DIN 6527			
						HA		HB		HA		HB			
						V1		V1		V1		V1			
DC e8	APMX	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 121 ...		Article no. 52 131 ...		Article no. 52 126 ...		Article no. 52 132 ...			
mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR			
3,0	6	18	54	6	4	50,92	030	49,05	030						
3,0	10	22	58	6	4					55,66	030	55,66	030		
3,5	7	18	54	6	4	50,92	035	49,05	035						
3,5	13	22	58	6	4					55,66	035	55,66	035		
4,0	7	18	54	6	4	50,92	040	49,05	040						
4,0	13	22	58	6	4					55,66	040	55,66	040		
4,5	8	18	54	6	4	50,92	045	49,05	045						
4,5	15	22	58	6	4					55,66	045	55,66	045		
5,0	8	18	54	6	4	50,92	050	49,05	050						
5,0	15	22	58	6	4					55,66	050	55,66	050		
6,0	10	18	54	6	4	50,92	060	49,05	060						
6,0	16	22	58	6	4					55,66	060	55,66	060		
8,0	12	23	59	8	4	59,07	080	56,66	080						
8,0	22	34	70	8	4					67,79	080	67,79	080		
10,0	14	27	67	10	4	89,82	100	85,97	100						
10,0	25	33	73	10	4					111,30	100	111,30	100		
12,0	16	28	73	12	4	123,50	120	117,90	120						
12,0	28	39	84	12	4					144,40	120	144,40	120		
14,0	16	30	75	14	4	164,20	140	158,70	140						
14,0	30	39	84	14	4					177,50	140	177,50	140		
16,0	20	35	83	16	4	183,00	160	175,20	160						
16,0	35	45	93	16	4					220,50	160	220,50	160		
18,0	20	32	80	18	4	216,00	180	206,10	180						
18,0	35	45	93	18	4					260,10	180	260,10	180		
20,0	25	43	93	20	4	271,10	200	259,10	200						
20,0	40	54	104	20	4					335,10	200	335,10	200		

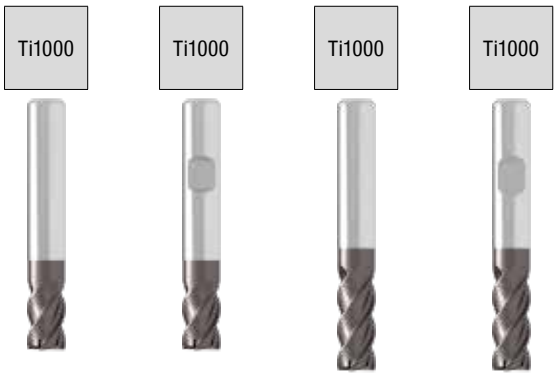
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

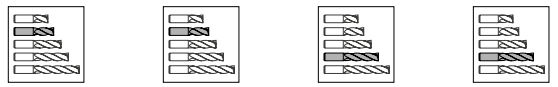
→ v_c/f_z Page 350–353

End milling cutter









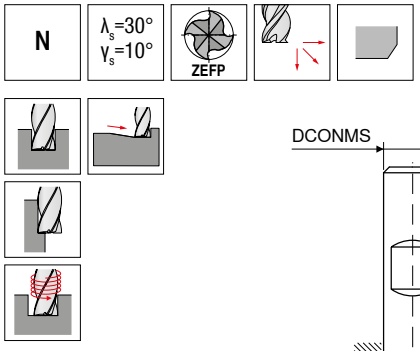


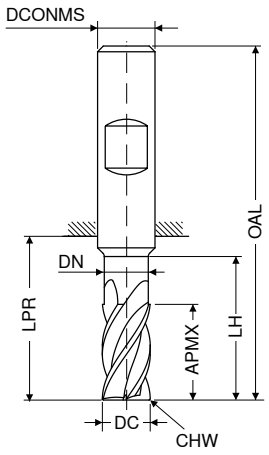
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 52 306 ...		V1 Article no. 52 307 ...		V1 Article no. 52 310 ...		V1 Article no. 52 311 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
1,5	3	1,4	6	10	38	3	0,02	4	34,50	015						
2,0	4	1,9	8	10	38	3	0,03	4	29,98	021						
2,0	4	1,9	8	18	54	6	0,03	4	34,72	020	34,72	020				
2,0	7			10	38	2	0,03	4					43,64	020		
2,5	4	2,4	8	10	38	3	0,04	4	29,98	025						
3,0	6	2,9	9	10	38	3	0,04	4	29,98	031						
3,0	6	2,9	9	18	54	6	0,04	4	34,72	030	34,72	030				
3,0	10	2,8	14	14	38	3	0,03	4					43,64	030		
4,0	7	3,8	12	18	54	6	0,05	4	34,72	040	34,72	040				
4,0	13	3,8	17	22	50	4	0,04	4					43,64	040		
5,0	8	4,8	16	18	54	6	0,06	4	34,72	050	34,72	050				
5,0	15	4,8	19	22	50	5	0,04	4					43,64	050		
6,0	10	5,8	16	18	54	6	0,07	4	34,72	060	34,72	060				
6,0	16	5,7	20	22	58	6	0,04	4					43,64	060	43,64	060
7,0	19	6,7	23	27	63	8	0,05	4					56,21	070	56,21	070
8,0	12	7,7	20	22	58	8	0,08	4	42,54	080	42,54	080				
8,0	22	7,7	26	34	70	8	0,06	4					53,46	080	53,46	080
9,0	23	8,7	28	33	73	10	0,07	4					96,77	090	96,77	090
10,0	14	9,7	24	26	66	10	0,10	4	65,79	100	65,79	100				
10,0	25	9,6	31	33	73	10	0,08	4					89,72	100	89,72	100
11,0	26	10,6	34	39	84	12	0,10	4					130,00	110	130,00	110
12,0	16	11,6	26	28	73	12	0,13	4	90,04	120	90,04	120				
12,0	28	11,6	37	39	84	12	0,13	4					121,30	120	121,30	120
14,0	18	13,6	28	30	75	14	0,15	4	122,30	140	122,30	140				
14,0	30	13,6	37	36	84	14	0,15	4					153,20	140	153,20	140
16,0	22	15,5	32	34	82	16	0,18	4	131,30	160	131,30	160				
16,0	35	15,6	43	45	93	16	0,18	4					194,00	160	194,00	160
18,0	20	17,5	34	36	80	18	0,18	4	176,30	180	176,30	180				
18,0	35	17,6	43	43	93	18	0,18	4					230,40	180	230,40	180
20,0	25	19,5	40	42	92	20	0,20	4	220,50	200	220,50	200				
20,0	40	19,6	52	54	104	20	0,20	4					295,40	200	295,40	200

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–353

End milling cutter









Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HB | HB

V1 | V1 | V1 | V1

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 315 ...		Article no. 52 314 ...		Article no. 52 315 ...		Article no. 52 314 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	16	2,8	32	47	75	3	0,04	4	37,91	032	45,30	032				
4	16	3,8	32	47	75	4	0,05	4	39,01	042	47,39	042				
4	20	3,8	48	72	100	4	0,05	4	43,53	043	50,69	043				
5	20	4,8	35	47	75	5	0,06	4	43,64	052	53,01	052				
5	25	4,8	55	72	100	5	0,06	4	46,29	053	59,19	053				
6	24	5,8	42	44	80	6	0,07	4					59,84	060	68,22	060
6	30	5,8	62	64	100	6	0,07	4					68,22	061	79,35	061
8	32	7,8	60	64	100	8	0,08	4					71,86	080	84,09	080
8	40	7,8	75	84	120	8	0,08	4					84,43	081	101,40	081
10	40	9,8	58	60	100	10	0,10	4					97,09	100	114,60	100
10	50	9,8	78	80	120	10	0,10	4					112,40	101	137,80	101
12	48	11,8	60	75	120	12	0,13	4					140,00	120	166,50	120
12	60	11,8	90	105	150	12	0,13	4					170,90	121	199,50	121
14	45	13,8	50	52	100	14	0,15	4					189,60	140	217,10	140
14	56	13,8	95	102	150	14	0,15	4					207,30	141	243,60	141
16	50	15,8	70	77	125	16	0,18	4					216,00	160	251,30	160
16	65	15,8	95	102	150	16	0,18	4					249,10	161	284,30	161
18	55	17,8	75	80	130	18	0,18	4					305,30	180	356,00	180
18	72	17,8	95	100	150	18	0,18	4					351,60	181	413,30	181
20	60	19,8	80	85	135	20	0,20	4					370,30	200	440,90	200
20	80	19,8	95	100	150	20	0,20	4					402,30	201	478,40	201
25	75	24,5	90	94	150	25	0,25	4					501,60	250	583,10	250

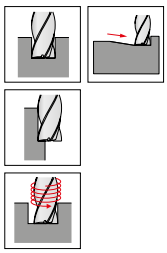
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials		○		○

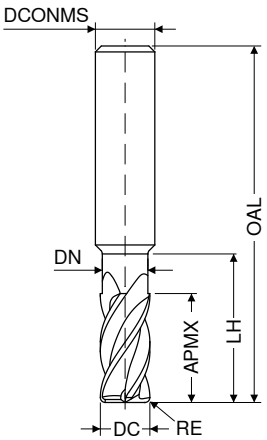
→ v_c/f_z Page 350–355

End milling cutter with corner radius

▲ optimal quiet running with irregular helix













Factory standard

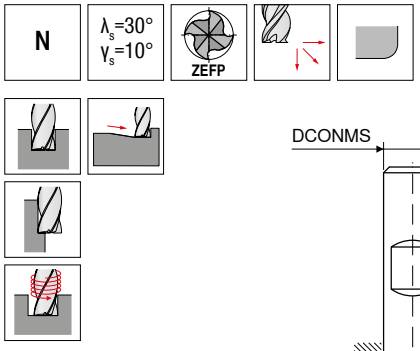


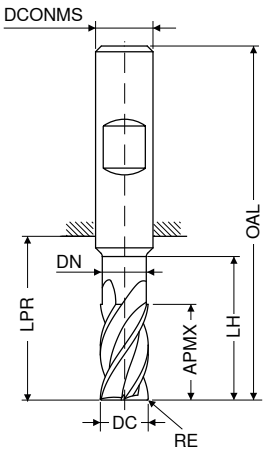
DC e8	RE ±0,01	APMX	DN	LH	OAL	DCONMS h6	ZEFP	V1 Article no. 52 102 ...	
mm	mm	mm	mm	mm	mm	mm		EUR	
2	0,2	7	1,8	11	58	6	4	68,78	022
3	0,3	8	2,8	13	58	6	4	65,79	033
4	0,4	11	3,8	16	58	6	4	63,26	044
5	0,5	13	4,8	18	58	6	4	63,26	055
6	0,5	16	5,8	26	58	6	4	65,69	065
6	1,0	16	5,8	26	58	6	4	65,69	066
8	0,5	22	7,8	32	64	8	4	93,13	085
8	1,0	22	7,8	32	64	8	4	93,13	086
8	1,5	22	7,8	32	64	8	4	93,13	087
10	0,5	25	9,8	35	73	10	4	119,10	105
10	1,0	25	9,8	35	73	10	4	119,10	106
10	1,5	25	9,8	35	73	10	4	119,10	107
12	0,5	28	11,8	38	84	12	4	158,70	125
12	1,0	28	11,8	38	84	12	4	158,70	126
12	1,5	28	11,8	38	84	12	4	158,70	127

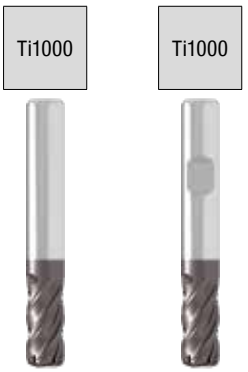
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 350–353

End milling cutter with corner radius









≈DIN 6527 ≈DIN 6527

HA HB

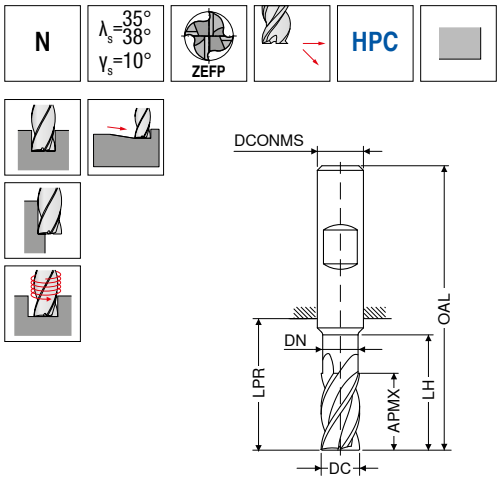
DC e8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 52 316 ...		V1 Article no. 52 317 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3	0,3	8	2,8	13	21	57	6	4	69,11	031	69,11	031
3	0,5	8	2,8	13	21	57	6	4	69,11	032	69,11	032
4	0,3	11	3,8	16	21	57	6	4	67,67	041	67,12	041
4	0,5	11	3,8	16	21	57	6	4	67,67	042	67,67	042
5	0,3	13	4,8	18	21	57	6	4	67,67	051	67,67	051
5	0,5	13	4,8	18	21	57	6	4	67,67	052	67,67	052
6	0,5	13	5,8	26	31	57	6	4	59,07	062	59,07	062
6	1,0	13	5,8	26	31	57	6	4	59,07	064	59,07	064
6	1,5	13	5,8	26	31	57	6	4	60,51	065	60,51	065
8	0,5	19	7,8	32	35	63	8	4	89,94	082	89,94	082
8	1,0	19	7,8	32	35	63	8	4	89,94	084	89,94	084
8	1,5	19	7,8	32	35	63	8	4	94,57	085	94,57	085
8	2,0	19	7,8	32	35	63	8	4	94,57	086	94,57	086
10	1,0	22	9,8	35	36	72	10	4	112,40	104	112,40	104
10	1,5	22	9,8	35	36	72	10	4	117,90	105	117,90	105
10	2,0	22	9,8	35	36	72	10	4	117,90	106	117,90	106
12	1,0	26	11,8	38	38	83	12	4	149,90	124	149,90	124
12	1,5	26	11,8	38	38	83	12	4	154,30	125	154,30	125
12	2,0	26	11,8	38	38	83	12	4	154,30	126	154,30	126
12	3,0	26	11,8	38	38	83	12	4	155,50	128	155,50	128
16	1,0	32	15,8	44	44	92	16	4	249,10	164	249,10	164
16	1,5	32	15,8	44	44	92	16	4	254,60	165	254,60	165
16	2,0	32	15,8	44	44	92	16	4	254,60	166	254,60	166
16	3,0	32	15,8	44	44	92	16	4	256,80	168	256,80	168
20	1,5	38	19,8	52	54	104	20	4	381,40	205	381,40	205
20	2,0	38	19,8	52	54	104	20	4	381,40	206	381,40	206
20	3,0	38	19,8	52	54	104	20	4	383,60	208	383,60	208

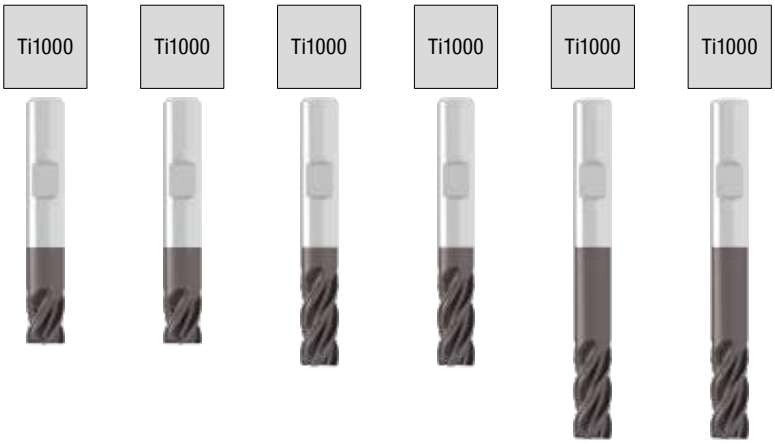
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

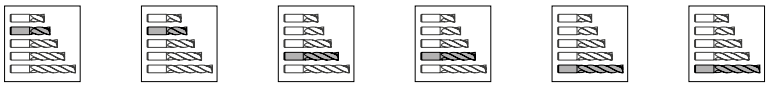
→ v_c/f_z Page 350–353

End milling cutter

- ▲ irregular helix angle
- ▲ 54 050 ... / 54 051 ... / 54 052 ...: special cutting edge preperation for the machining of steel
- ▲ 54 060 ... / 54 061 ... / 54 062 ...: special cutting edge preperation for the machining of stainless steel







								≈DIN 6527 HB V3		≈DIN 6527 HB V3		≈DIN 6527 HB V3		≈DIN 6527 HB V3		≈DIN 6527 HB V3	
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 54 050 ...		Article no. 54 060 ...		Article no. 54 051 ...		Article no. 54 061 ...		Article no. 54 052 ...		Article no. 54 062 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
3	5			14	50	6	4	15,76	030	17,08	030								
3	8	2,8	12	21	57	6	4					15,76	030	17,08	030				
3	8	2,8	15	34	70	6	4									22,26	030	24,14	030
4	8			18	54	6	4	15,76	040	17,08	040								
4	11	3,8	15	21	57	6	4					15,76	040	17,08	040				
4	11	3,8	20	34	70	6	4									22,26	040	24,14	040
5	9			18	54	6	4	15,76	050	17,08	050								
5	13	4,8	17	21	57	6	4					15,76	050	17,08	050				
5	13	4,8	25	34	70	6	4									25,13	050	27,11	050
6	10			18	54	6	4	15,76	060	17,08	060								
6	13	5,8	21	21	57	6	4					18,51	060	19,95	060				
6	13	5,8	30	34	70	6	4									28,10	060	30,31	060
8	12			22	58	8	4	22,26	080	24,02	080								
8	19	7,7	27	27	63	8	4					23,81	080	25,78	080				
8	19	7,7	40	44	80	8	4									35,60	080	38,46	080
10	14			26	66	10	4	28,88	100	31,19	100								
10	22	9,7	32	32	72	10	4					31,30	100	33,96	100				
10	22	9,7	50	54	94	10	4									49,48	100	53,56	100
12	16			28	73	12	4	41,43	120	44,86	120								
12	26	11,6	38	38	83	12	4					49,82	120	53,89	120				
12	26	11,6	64	64	109	12	4									60,94	120	66,02	120
16	22			34	82	16	4	72,63	160	78,58	160								
16	32	15,5	44	44	92	16	4					76,71	160	82,99	160				
16	32	15,5	80	84	132	16	4									115,80	160	124,60	160
20	26			42	92	20	4	108,00	200	116,80	200								
20	38	19,5	54	54	104	20	4					115,80	200	125,70	200				
20	38	19,5	100	104	154	20	4									157,60	200	170,90	200

Steel	●	●	●	●	●	●
Stainless steel		●		●		●
Cast iron	●	○	●	○	●	○
Non ferrous metals		○		○		○
Heat resistant alloys		●		●		●
hardened materials						

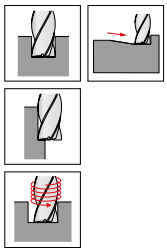
→ v_c/f_z Page 340–343

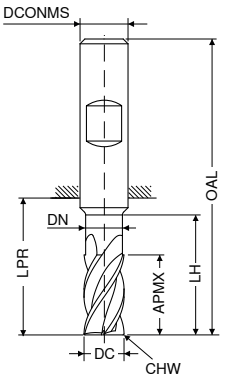
14

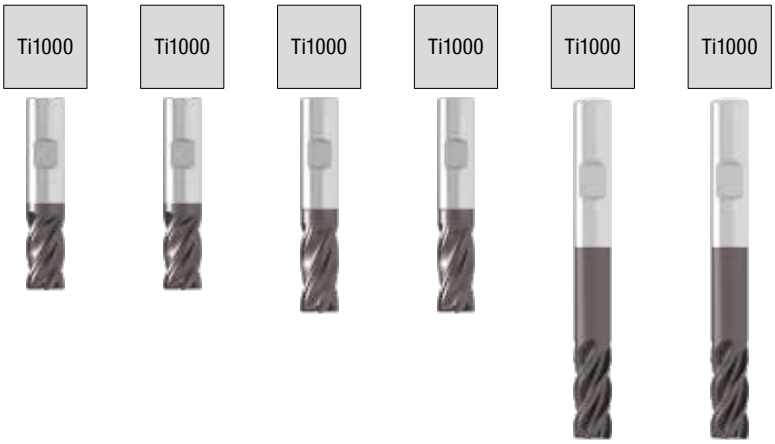
End milling cutter

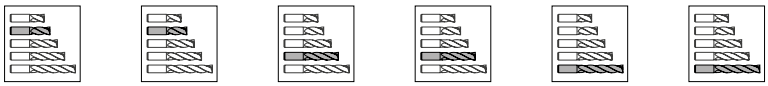
- ▲ irregular helix angle
- ▲ 54 001 ... / 54 002 ... / 54 003 ...: special cutting edge preperation for the machining of steel
- ▲ 54 004 ... / 54 005 ... / 54 006 ...: special cutting edge preperation for the machining of stainless steel











DC h10/	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	≈DIN 6527 HB V3 Article no. 54 001 ... EUR		≈DIN 6527 HB V3 Article no. 54 005 ... EUR		≈DIN 6527 HB V3 Article no. 54 002 ... EUR		≈DIN 6527 HB V3 Article no. 54 006 ... EUR		≈DIN 6527 HB V3 Article no. 54 003 ... EUR		≈DIN 6527 HB V3 Article no. 54 004 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm													
3,0	5			14	50	6	0,15	4	15,87	030	17,08	030								
3,0	8	2,8	12,0	21	57	6	0,15	4					15,87	030	17,08	030				
3,0	8	2,8	15,0	34	70	6	0,15	4									22,26	030	24,14	030
4,0	8			18	54	6	0,15	4	15,87	040	17,08	040								
4,0	11	3,8	15,0	21	57	6	0,15	4					15,87	040	17,08	040				
4,0	11	3,8	20,0	34	70	6	0,15	4									22,26	040	24,14	040
5,0	9			18	54	6	0,15	4	15,87	050	17,08	050								
5,0	13	4,8	17,0	21	57	6	0,15	4					15,87	050	17,08	050				
5,0	13	4,8	25,0	34	70	6	0,15	4									25,13	050	27,11	050
6,0	10			18	54	6	0,15	4	15,87	060	17,08	060								
6,0	13	5,8	21,0	21	57	6	0,15	4					18,51	060	20,06	060				
6,0	13	5,8	30,0	34	70	6	0,15	4									28,10	060	30,31	060
8,0	12			22	58	8	0,25	4	22,15	080	24,14	080								
8,0	19	7,7	27,0	27	63	8	0,25	4					23,81	080	25,91	080				
8,0	19	7,7	40,0	44	80	8	0,25	4									35,60	080	38,46	080
10,0	14			26	66	10	0,25	4	28,88	100	31,30	100								
10,0	22	9,7	32,0	32	72	10	0,25	4					31,30	100	33,96	100				
10,0	22	9,7	50,0	54	94	10	0,25	4									49,48	100	53,56	100
12,0	16			28	73	12	0,35	4	41,56	120	44,97	120								
12,0	26	11,6	38,0	38	83	12	0,35	4					49,82	120	54,01	120				
12,0	26	11,6	64,0	64	109	12	0,35	4									60,94	120	66,02	120
16,0	22			34	82	16	0,35	4	72,74	160	78,70	160								
16,0	32	15,5	44,0	44	92	16	0,35	4					76,81	160	83,32	160				
16,0	32	15,5	80,0	84	132	16	0,35	4									115,80	160	124,60	160
20,0	26			42	92	20	0,35	4	108,10	200	116,80	200								
20,0	38	19,5	54,0	54	104	20	0,35	4					116,80	200	125,70	200				
20,0	38	19,5	100,0	104	154	20	0,35	4									157,60	200	170,90	200

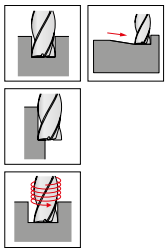
Steel	●	●	●	●	●	●
Stainless steel		●		●		●
Cast iron	●	○	●	○	●	○
Non ferrous metals		○		○		○
Heat resistant alloys		●		●		●
hardened materials						

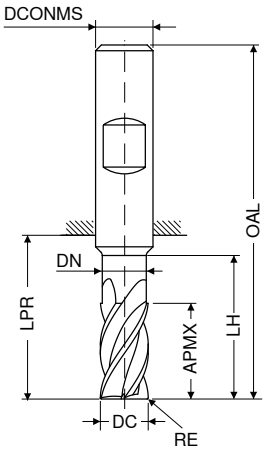
→ v_c/f_z Page 340–343

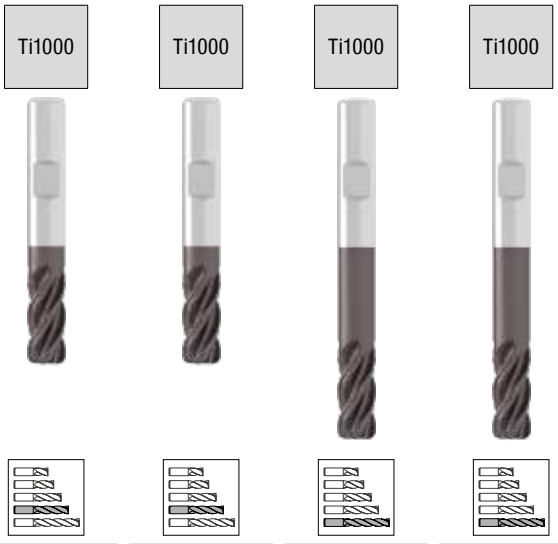
End milling cutter with corner radius

- irregular helix angle
- 54 053 ... / 54 054 ...: special cutting edge preperation for the machining of steel
- 54 063 ... / 54 064 ...: special cutting edge preperation for the machining of stainless steel









≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527

HB | HB | HB | HB

V3 | V3 | V3 | V3

DC h10 mm	RE mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP 4	Article no. 54 053 ... EUR		Article no. 54 063 ... EUR		Article no. 54 054 ... EUR		Article no. 54 064 ... EUR	
3	0,1	8	2,8	12	21	57	6	4	20,61	03001	22,38	03001				
3	0,1	8	2,8	15	34	70	6	4					27,23	03001	29,43	03001
3	0,3	8	2,8	12	21	57	6	4	20,61	03003	22,38	03003				
3	0,3	8	2,8	15	34	70	6	4					27,23	03003	29,43	03003
3	0,5	8	2,8	12	21	57	6	4	20,61	03005	22,38	03005				
3	0,5	8	2,8	15	34	70	6	4					27,23	03005	29,43	03005
3	1,0	8	2,8	12	21	57	6	4	20,61	03010	22,38	03010				
3	1,0	8	2,8	15	34	70	6	4					27,23	03010	29,43	03010
4	0,1	11	3,8	15	21	57	6	4	20,61	04001	22,38	04001				
4	0,1	11	3,8	20	34	70	6	4					27,23	04001	29,43	04001
4	0,3	11	3,8	15	21	57	6	4	20,61	04003	22,38	04003				
4	0,3	11	3,8	20	34	70	6	4					27,23	04003	29,43	04003
4	0,5	11	3,8	15	21	57	6	4	20,61	04005	22,38	04005				
4	0,5	11	3,8	20	34	70	6	4					27,23	04005	29,43	04005
4	1,0	11	3,8	15	21	57	6	4	20,61	04010	22,38	04010				
4	1,0	11	3,8	20	34	70	6	4					27,23	04010	29,43	04010
5	0,1	13	4,8	17	21	57	6	4	20,61	05001	22,38	05001				
5	0,1	13	4,8	25	34	70	6	4					29,98	05001	32,41	05001
5	0,3	13	4,8	17	21	57	6	4	20,61	05003	22,38	05003				
5	0,3	13	4,8	25	34	70	6	4					29,98	05003	32,41	05003
5	0,5	13	4,8	17	21	57	6	4	20,61	05005	22,38	05005				
5	0,5	13	4,8	25	34	70	6	4					29,98	05005	32,41	05005
5	1,0	13	4,8	17	21	57	6	4	20,61	05010	22,38	05010				
5	1,0	13	4,8	25	34	70	6	4					29,98	05010	32,41	05010
6	0,1	13	5,8	21	21	57	6	4	22,81	06001	24,69	06001				
6	0,1	13	5,8	30	34	70	6	4					33,73	06001	36,48	06001
6	0,3	13	5,8	21	21	57	6	4	22,81	06003	24,69	06003				
6	0,3	13	5,8	30	34	70	6	4					33,73	06003	36,48	06003
6	0,5	13	5,8	21	21	57	6	4	22,81	06005	24,69	06005				
6	0,5	13	5,8	30	34	70	6	4					33,73	06005	36,48	06005
6	1,0	13	5,8	21	21	57	6	4	22,81	06010	24,69	06010				
6	1,0	13	5,8	30	34	70	6	4					33,73	06010	36,48	06010
6	1,5	13	5,8	21	21	57	6	4	22,81	06015	24,69	06015				
6	1,5	13	5,8	30	34	70	6	4					33,73	06015	36,48	06015
6	2,0	13	5,8	21	21	57	6	4	22,81	06020	24,69	06020				
6	2,0	13	5,8	30	34	70	6	4					33,73	06020	36,48	06020
8	0,1	19	7,7	27	27	63	8	4	29,86	08001	32,41	08001				
8	0,1	19	7,7	40	44	80	8	4					44,97	08001	48,71	08001
8	0,3	19	7,7	27	27	63	8	4	29,86	08003	32,41	08003				
8	0,3	19	7,7	40	44	80	8	4					44,97	08003	48,71	08003
8	0,5	19	7,7	27	27	63	8	4	29,86	08005	32,41	08005				
8	0,5	19	7,7	40	44	80	8	4					44,97	08005	48,71	08005

Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	○	●	○
Non ferrous metals		○		○
Heat resistant alloys		●		●
hardened materials				

→ v_c/f_z Page 340–343

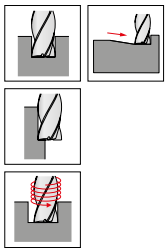
14

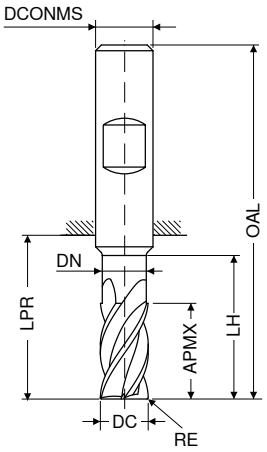
Continued on next page

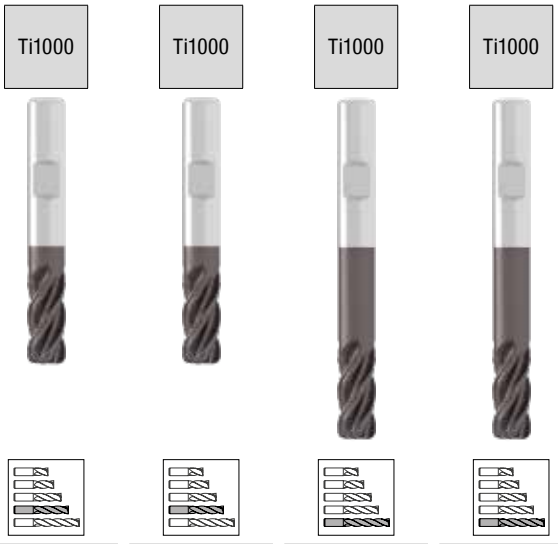
End milling cutter with corner radius

- ▲ irregular helix angle
- ▲ 54 053 ... / 54 054 ...: special cutting edge preperation for the machining of steel
- ▲ 54 063 ... / 54 064 ...: special cutting edge preperation for the machining of stainless steel









≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527

HB | HB | HB | HB

V3 | V3 | V3 | V3

DC h10	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 54 053 ...		Article no. 54 063 ...		Article no. 54 054 ...		Article no. 54 064 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
8	1,0	19	7,7	27	27	63	8	4	29,86	08010	32,41	08010				
8	1,0	19	7,7	40	44	80	8	4					44,97	08010	48,71	08010
8	1,5	19	7,7	27	27	63	8	4	29,86	08015	32,41	08015				
8	1,5	19	7,7	40	44	80	8	4					44,97	08015	48,71	08015
8	1,6	19	7,7	27	27	63	8	4	29,86	08016	32,41	08016				
8	1,6	19	7,7	40	44	80	8	4					44,97	08016	48,71	08016
8	2,0	19	7,7	27	27	63	8	4	29,86	08020	32,41	08020				
8	2,0	19	7,7	40	44	80	8	4					44,97	08020	48,71	08020
10	0,1	22	9,7	32	32	72	10	4	37,80	10001	40,88	10001				
10	0,1	22	9,7	50	54	94	10	4					60,07	10001	65,02	10001
10	0,3	22	9,7	32	32	72	10	4	37,80	10003	40,88	10003				
10	0,3	22	9,7	50	54	94	10	4					60,07	10003	65,02	10003
10	0,5	22	9,7	32	32	72	10	4	37,80	10005	40,88	10005				
10	0,5	22	9,7	50	54	94	10	4					60,07	10005	65,02	10005
10	1,0	22	9,7	32	32	72	10	4	37,80	10010	40,88	10010				
10	1,0	22	9,7	50	54	94	10	4					60,07	10010	65,02	10010
10	1,5	22	9,7	32	32	72	10	4	37,80	10015	40,88	10015				
10	1,5	22	9,7	50	54	94	10	4					60,07	10015	65,02	10015
10	1,6	22	9,7	32	32	72	10	4	37,80	10016	40,88	10016				
10	1,6	22	9,7	50	54	94	10	4					60,07	10016	65,02	10016
10	2,0	22	9,7	32	32	72	10	4	37,80	10020	40,88	10020				
10	2,0	22	9,7	50	54	94	10	4					60,07	10020	65,02	10020
12	0,1	26	11,6	38	38	83	12	4	58,42	12001	63,26	12001				
12	0,1	26	11,6	64	64	109	12	4					87,84	12001	95,12	12001
12	0,3	26	11,6	38	38	83	12	4	58,42	12003	63,26	12003				
12	0,3	26	11,6	64	64	109	12	4					87,84	12003	95,12	12003
12	0,5	26	11,6	38	38	83	12	4	58,42	12005	63,26	12005				
12	0,5	26	11,6	64	64	109	12	4					87,84	12005	95,12	12005
12	1,0	26	11,6	38	38	83	12	4	58,42	12010	63,26	12010				
12	1,0	26	11,6	64	64	109	12	4					87,84	12010	95,12	12010
12	1,5	26	11,6	38	38	83	12	4	58,42	12015	63,26	12015				
12	1,5	26	11,6	64	64	109	12	4					87,84	12015	95,12	12015
12	1,6	26	11,6	38	38	83	12	4	58,42	12016	63,26	12016				
12	1,6	26	11,6	64	64	109	12	4					87,84	12016	95,12	12016
12	2,0	26	11,6	38	38	83	12	4	58,42	12020	63,26	12020				
12	2,0	26	11,6	64	64	109	12	4					87,84	12020	95,12	12020
12	3,0	26	11,6	38	38	83	12	4	58,42	12030	63,26	12030				
12	3,0	26	11,6	64	64	109	12	4					87,84	12030	95,12	12030
16	0,1	32	15,5	44	44	92	16	4	88,28	16001	95,56	16001				
16	0,1	32	15,5	80	84	132	16	4					136,80	16001	147,80	16001
16	0,3	32	15,5	44	44	92	16	4	88,28	16003	95,56	16003				
16	0,3	32	15,5	80	84	132	16	4					136,80	16003	147,80	16003

Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	○	●	○
Non ferrous metals		○		○
Heat resistant alloys		●		●
hardened materials				

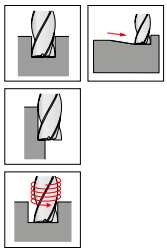
→ v_c/f_z Page 340–343

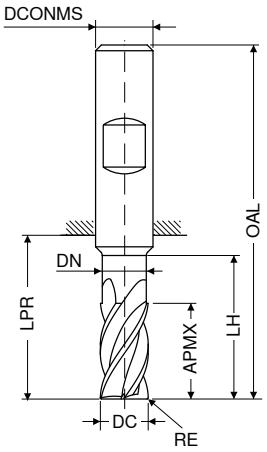
Continued on next page

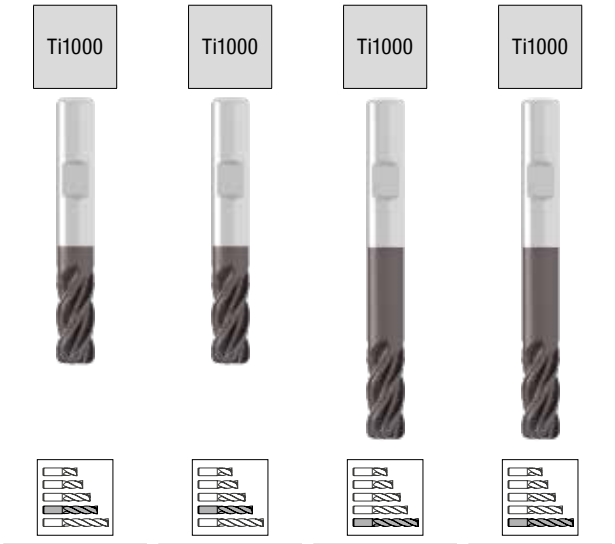
End milling cutter with corner radius

- irregular helix angle
- 54 053 ... / 54 054 ...: special cutting edge preperation for the machining of steel
- 54 063 ... / 54 064 ...: special cutting edge preperation for the machining of stainless steel









DC h10	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	≈DIN 6527 HB V3 Article no. 54 053 ... EUR		≈DIN 6527 HB V3 Article no. 54 063 ... EUR		≈DIN 6527 HB V3 Article no. 54 054 ... EUR		≈DIN 6527 HB V3 Article no. 54 064 ... EUR	
mm	mm	mm	mm	mm	mm	mm	mm									
16	0,5	32	15,5	44	44	92	16	4	88,28	16005	95,56	16005				
16	0,5	32	15,5	80	84	132	16	4					136,80	16005	147,80	16005
16	1,0	32	15,5	44	44	92	16	4	88,28	16010	95,56	16010				
16	1,0	32	15,5	80	84	132	16	4					136,80	16010	147,80	16010
16	1,5	32	15,5	44	44	92	16	4	88,28	16015	95,56	16015				
16	1,5	32	15,5	80	84	132	16	4					136,80	16015	147,80	16015
16	1,6	32	15,5	44	44	92	16	4	88,28	16016	95,56	16016				
16	1,6	32	15,5	80	84	132	16	4					136,80	16016	147,80	16016
16	2,0	32	15,5	44	44	92	16	4	88,28	16020	95,56	16020				
16	2,0	32	15,5	80	84	132	16	4					136,80	16020	147,80	16020
16	3,0	32	15,5	44	44	92	16	4	88,28	16030	95,56	16030				
16	3,0	32	15,5	80	84	132	16	4					136,80	16030	147,80	16030
16	4,0	32	15,5	44	44	92	16	4	88,28	16040	95,56	16040				
16	4,0	32	15,5	80	84	132	16	4					136,80	16040	147,80	16040
20	0,1	38	19,5	54	54	104	20	4	127,80	20001	138,80	20001				
20	0,1	38	19,5	100	104	154	20	4					200,60	20001	217,10	20001
20	0,3	38	19,5	54	54	104	20	4	127,80	20103	138,80	20003				
20	0,3	38	19,5	100	104	154	20	4					200,60	20003	217,10	20003
20	0,5	38	19,5	54	54	104	20	4	127,80	20205	138,80	20005				
20	0,5	38	19,5	100	104	154	20	4					200,60	20005	217,10	20005
20	1,0	38	19,5	54	54	104	20	4	127,80	20310	138,80	20010				
20	1,0	38	19,5	100	104	154	20	4					200,60	20010	217,10	20010
20	1,5	38	19,5	54	54	104	20	4	127,80	20415	138,80	20015				
20	1,5	38	19,5	100	104	154	20	4					200,60	20015	217,10	20015
20	1,6	38	19,5	54	54	104	20	4	127,80	20516	138,80	20016				
20	1,6	38	19,5	100	104	154	20	4					200,60	20016	217,10	20016
20	2,0	38	19,5	54	54	104	20	4	127,80	20620	138,80	20020				
20	2,0	38	19,5	100	104	154	20	4					200,60	20020	217,10	20020
20	3,0	38	19,5	54	54	104	20	4	127,80	20730	138,80	20030				
20	3,0	38	19,5	100	104	154	20	4					200,60	20030	217,10	20030
20	4,0	38	19,5	54	54	104	20	4	127,80	20840	138,80	20040				
20	4,0	38	19,5	100	104	154	20	4					200,60	20040	217,10	20040

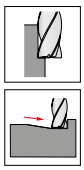
Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	○	●	○
Non ferrous metals		○		○
Heat resistant alloys		●		●
hardened materials				

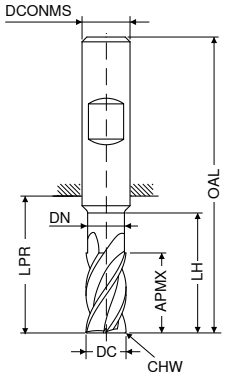
→ v_c/f_z Page 340–343

14

Finish milling cutter







LPR with Shank DIN 6535 HB



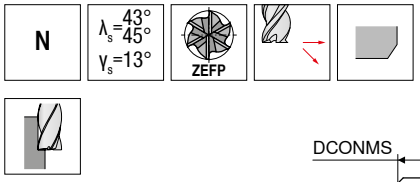


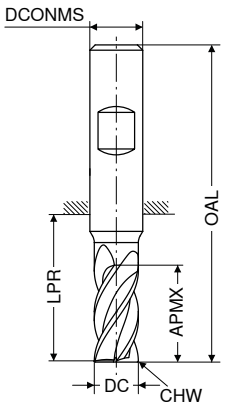
									Factory standard HA		Factory standard HB		Factory standard HA		Factory standard HB		Factory standard HA		Factory standard HB	
									V1		V1		V1		V1		V1		V1	
DC_{e8}	APMX	DN	LH	LPR	OAL	$DCONMS_{h6}$	CHW	ZEFP	Article no. 52 110 ...		Article no. 52 110 ...		Article no. 52 115 ...		Article no. 52 115 ...		Article no. 52 118 ...		Article no. 52 118 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
5	8	4,8	13	18	54	6	0,02	6	35,16	051	35,16	050								
5	13	4,8	18	22	58	6	0,02	6					36,04	051	36,04	050				
6	10	5,8	15	18	54	6	0,03	6	34,38	061	34,38	060								
6	16	5,8	20	22	58	6	0,03	6					34,93	061	34,93	060				
6	21			29	65	6	0,03	6									49,93	061	49,93	060
7	12	6,8	17	23	59	8	0,04	6	41,43	071	41,43	070								
7	22	6,8	30	34	70	8	0,04	6					42,33	071	42,33	070				
7	25			39	75	8	0,04	6									63,92	071	63,92	070
8	12	7,8	17	23	59	8	0,04	6	40,78	081	40,78	080								
8	22	7,8	32	34	70	8	0,04	6					43,53	081	43,53	080				
8	28			39	75	8	0,04	6									57,76	081	57,76	080
9	14	8,8	19	20	60	10	0,04	6	62,39	091	62,39	090								
9	25	8,8	33	33	73	10	0,04	6					69,21	091	69,21	090				
9	30			45	85	10	0,04	6									121,30	091	121,30	090
10	14	9,8	19	20	60	10	0,05	6	61,84	101	61,84	100								
10	25	9,8	33	33	73	10	0,05	6					69,76	101	69,76	100				
10	35			45	85	10	0,05	6									112,40	101	112,40	100
12	16	11,8	21	25	70	12	0,05	6	89,72	121	89,72	120								
12	28	11,8	38	39	84	12	0,05	6					97,32	121	97,32	120				
12	45			55	100	12	0,05	6									157,60	121	157,60	120
14	18	13,8	23	25	70	14	0,06	6	117,90	141	117,90	140								
14	30	13,8	38	39	84	14	0,06	6					131,30	141	131,30	140				
16	20	15,8	28	32	80	16	0,06	6	142,30	161	142,30	160								
16	35	15,8	43	45	93	16	0,06	6					161,00	161	161,00	160				
16	50			62	110	16	0,06	6									227,00	162	227,00	160
16	65			77	125	16	0,06	6									254,60	163	254,60	161
18	20	17,8	28	32	80	18	0,07	8	176,30	181	176,30	180								
18	35	17,8	43	45	93	18	0,07	8					200,60	181	200,60	180				
20	25	19,8	33	35	85	20	0,07	8	220,50	201	220,50	200								
20	40	19,8	45	50	100	20	0,07	8					251,30	201	251,30	200				
20	55			65	115	20	0,07	8									338,30	202	338,30	200
20	70			80	130	20	0,07	8									404,60	203	404,60	201
25	55	24,8	63	69	125	25	0,08	8					423,30	251	423,30	250				
25	75			94	150	25	0,08	8									684,40	251	684,40	250

Steel	○	○	○	○	○	○
Stainless steel	●	●	●	●	●	●
Cast iron	○	○	○	○	○	○
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened materials						

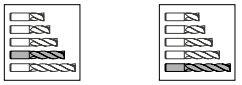
→ v_c/f_z Page 350–355

Finish milling cutter









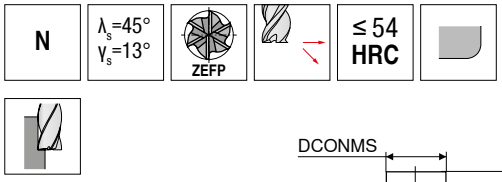
DC f8	APMX	LPR	OAL	DCONMS h5	CHW	ZEFP	≈DIN 6527 HB V0 Article no. 50 633 ... EUR		Factory standard HB V0 Article no. 50 633 ... EUR	
mm	mm	mm	mm	mm	mm					
4	11	21	57	6	0,15	6	41,88	040		
4	16	26	62	6	0,15	6			59,29	041
5	13	21	57	6	0,15	6	41,88	050		
5	18	26	62	6	0,15	6			59,29	051
6	13	21	57	6	0,15	6	41,88	060		
6	18	26	62	6	0,15	6			59,29	061
7	16	27	63	8	0,15	6	51,14	070		
7	21	32	68	8	0,15	6			77,59	071
8	19	27	63	8	0,15	6	48,93	080		
8	24	32	68	8	0,15	6			68,44	081
9	19	32	72	10	0,15	6	80,89	090		
9	27	40	80	10	0,15	6			123,50	091
10	22	32	72	10	0,15	6	78,47	100		
10	30	40	80	10	0,15	6			121,30	101
12	26	38	83	12	0,15	6	104,30	120		
12	36	48	93	12	0,15	6			164,20	121
14	26	38	83	14	0,15	6	142,30	140		
14	42	54	99	14	0,15	6			222,60	141
16	32	44	92	16	0,15	6	187,30	160		
16	48	60	108	16	0,15	6			284,30	161
16	65	77	125	16	0,15	6			358,30	162
16	75	102	150	16	0,15	6			401,10	163
16	95	102	150	16	0,15	6			465,10	164
18	32	44	92	18	0,15	8	217,10	180		
18	54	66	114	18	0,15	8			348,30	181
20	38	54	104	20	0,15	8	266,80	200		
20	60	76	126	20	0,15	8			446,40	201
20	75	85	135	20	0,15	8			471,60	202
20	95	100	150	20	0,15	8			489,30	203
25	75	94	150	25	0,15	8			648,10	250
25	95	104	160	25	0,15	8			689,90	251
32	75	90	150	32	0,15	8	1.246,00	320		
32	95	100	160	32	0,15	8			1.294,00	321

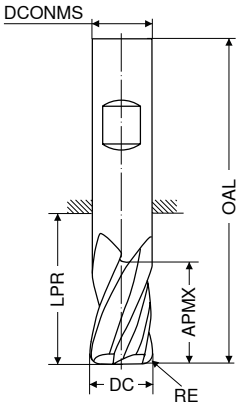
Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials	●	●

→ v_c/f_z Page 350–355

14

Finish milling cutter with corner radius





Ti1000





Factory standard

HB 

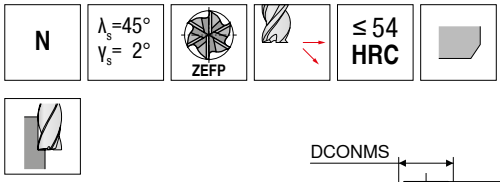
V0

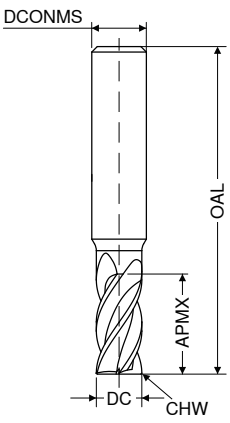
DC f8	RE ±0,01	APMX	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 634 ...
mm	mm	mm	mm	mm	mm		EUR	
6	1,0	18	26	62	6	6	56,43	061
6	0,5	18	26	62	6	6	56,43	060
8	2,0	24	32	68	8	6	56,10	082
8	1,0	24	32	68	8	6	56,10	081
8	0,5	24	32	68	8	6	56,10	080
10	0,5	30	40	80	10	6	114,60	100
10	2,0	30	40	80	10	6	114,60	102
10	1,0	30	40	80	10	6	114,60	101
12	2,0	36	48	93	12	6	151,00	122
12	1,0	36	48	93	12	6	151,00	121
12	3,0	36	48	93	12	6	151,00	123
12	0,5	36	48	93	12	6	151,00	120
16	2,0	48	60	108	16	6	270,10	162
16	1,0	48	60	108	16	6	270,10	161
16	3,0	48	60	108	16	6	270,10	163
16	0,5	48	60	108	16	6	270,10	160
20	0,5	60	76	126	20	8	403,40	200
20	2,0	60	76	126	20	8	403,40	202
20	3,0	60	76	126	20	8	403,40	203
20	1,0	60	76	126	20	8	403,40	201

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	●

→ v_c/f_z Page 350–355

Multi-flute milling cutter











Factory standard



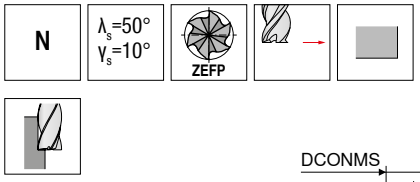
V0

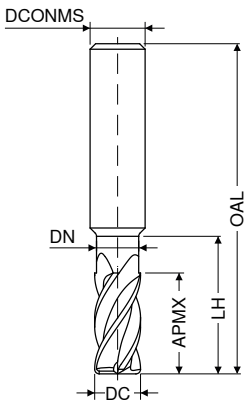
DC h10 mm	APMX mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 631 ... EUR	
4	14	40	4	0,05	5	37,14	040
5	18	50	5	0,05	5	41,11	050
6	18	50	6	0,05	7	45,64	060
8	25	63	8	0,05	7	66,34	080
10	30	72	10	0,08	9	94,67	100
12	32	83	12	0,08	9	123,50	120
14	32	83	14	0,08	9	179,60	140
16	36	92	16	0,08	11	260,10	160
18	40	92	18	0,08	11	295,40	180
20	45	104	20	0,08	13	347,20	200
25	45	120	25	0,08	13	632,60	250

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 350–353

Multi-flute milling cutter for finishing





Ti1000





Factory standard

HA

V1

DC e8 mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 109 ... EUR	
6	16	5,8	26	58	6	8	57,09	**060**
8	22	7,8	32	64	8	10	65,24	**080**
10	25	9,8	35	73	10	12	111,30	**100**
12	28	11,8	38	84	12	12	151,00	**120**
16	35	15,8	43	93	16	16	322,90	**160**
20	40	19,8	50	104	20	16	380,30	**200**

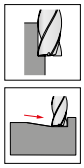
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

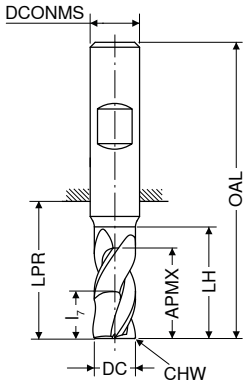
→ v_c/f_z Page 350–353

End milling cutter

▲ With graduated flute depth

H | λ_s = 52° γ_s = –11° | ZEFP | ≤ 54 HRC

















DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB

V0 | V0 | V0

DC f8 mm	APMX mm	LH mm	l_7 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 907 ...	EUR	Article no. 50 907 ...	EUR	Article no. 50 907 ...	EUR
4	8	15	4,4	18	54	6	0,15	4	040	55,11				
4	11	18	4,4	21	57	6	0,15	4	041		55,11			
4	16	19	6,4	26	62	6	0,15	4	042				60,07	
5	9	16	4,8	18	54	6	0,15	4	050	55,11				
5	13	19	4,8	21	57	6	0,15	4	051		55,11			
5	17	20	6,8	26	62	6	0,15	4	052				60,07	
6	10	17	5,2	18	54	6	0,15	4	060	57,42				
6	13	19	5,2	21	57	6	0,15	4	061		57,87			
6	18	21	7,2	26	62	6	0,15	4	062				64,15	
8	12	20	7,6	22	58	8	0,15	4	080	65,14				
8	19	25	7,6	27	63	8	0,15	4	081		66,57			
8	24	27	9,6	32	68	8	0,15	4	082				72,30	
10	14	24	8,8	26	66	10	0,15	4	100	103,20				
10	22	30	8,8	32	72	10	0,15	4	101		113,60			
10	30	33	12,0	40	80	10	0,15	4	102				129,00	
12	16	26	10,4	28	73	12	0,15	4	120	136,80				
12	26	36	10,4	38	83	12	0,15	4	121		155,50			
12	36	39	14,4	48	93	12	0,15	4	122				176,30	
14	18	28	10,4	30	75	14	0,15	4	140	164,20				
14	26	36	10,4	38	83	14	0,15	4	141		200,60			
14	42	45	16,8	54	99	14	0,15	4	142				241,40	
16	22	32	12,8	34	82	16	0,15	4	160	200,60				
16	32	42	12,8	44	92	16	0,15	4	161		274,50			
16	48	51	19,2	60	108	16	0,15	4	162				331,80	
18	24	34	12,8	36	84	18	0,15	4	180	253,60				
18	32	42	12,8	44	92	18	0,15	4	181		304,20			
18	54	57	21,6	66	114	18	0,15	4	182				384,60	
20	26	42	15,2	42	92	20	0,15	4	200	346,10				
20	38	52	15,2	54	104	20	0,15	4	201		393,50			
20	60	63	24,0	76	126	20	0,15	4	202				493,80	

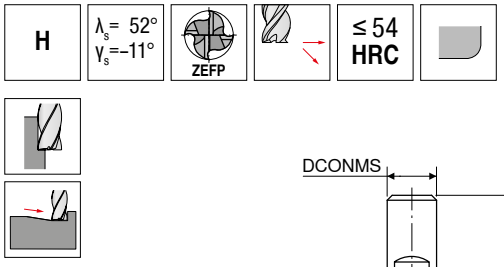
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	○	○	○

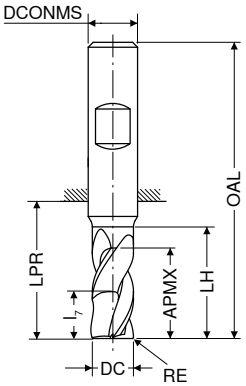
→ v_c/f_z Page 350–355

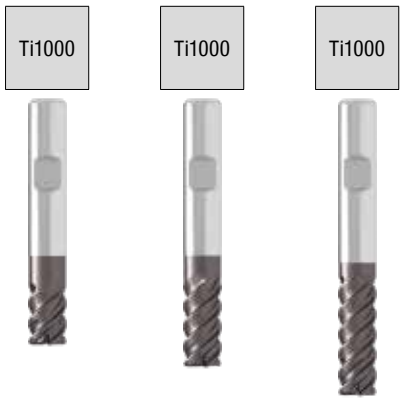
14

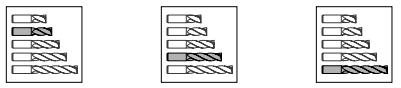
End milling cutter with corner radius

▲ With graduated flute depth









Factory standard | Factory standard | Factory standard

HB | HB | HB

V0 | V0 | V0

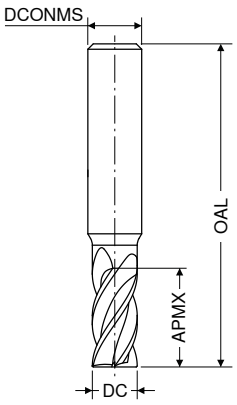
DC f8	RE ±0,01	APMX	LH	l7	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 908 ...		Article no. 50 908 ...		Article no. 50 908 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
4	0,5	8	15	4,4	18	54	6	4	60,29	040				
4	0,5	11	18	4,4	21	57	6	4			61,84	041		
4	0,5	16	19	6,4	26	62	6	4					70,97	042
5	0,5	9	16	4,8	18	54	6	4	60,29	050				
5	0,5	13	19	4,8	21	57	6	4			61,84	051		
5	0,5	17	20	6,8	26	62	6	4					70,97	052
6	0,5	10	17	5,2	18	54	6	4	61,71	060				
6	0,5	13	19	5,2	21	57	6	4			72,30	061		
6	0,5	18	21	7,2	26	62	6	4					74,94	062
8	1,0	12	20	7,6	22	58	8	4	69,33	080				
8	1,0	19	25	7,6	27	63	8	4			79,25	081		
8	1,0	24	27	9,6	32	68	8	4					81,22	082
10	1,0	14	24	8,8	26	66	10	4	115,80	100				
10	1,0	22	30	8,8	32	72	10	4			125,70	101		
10	1,0	30	33	12,0	40	80	10	4					136,80	102
12	1,5	16	26	10,4	28	73	12	4	155,50	120				
12	1,5	26	36	10,4	38	83	12	4			165,40	121		
12	1,5	36	39	14,4	48	93	12	4					177,50	122
14	1,5	18	28	10,4	30	75	14	4	215,00	140				
14	1,5	26	36	10,4	38	83	14	4			224,90	141		
14	1,5	42	45	16,8	54	99	14	4					260,10	142
16	2,0	22	32	12,8	34	82	16	4	295,40	160				
16	2,0	32	42	12,8	44	92	16	4			304,20	161		
16	2,0	48	51	19,2	60	108	16	4					329,60	162
18	2,0	24	34	12,8	36	84	18	4	306,40	180				
18	2,0	32	42	12,8	44	92	18	4			318,60	181		
18	2,0	54	57	21,6	66	114	18	4					382,40	182
20	2,0	26	40	15,2	42	92	20	4	435,30	200				
20	2,0	38	52	15,2	54	104	20	4			447,50	201		
20	2,0	60	63	24,0	76	126	20	4					521,40	202

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	○	○	○

→ v_c/f_z Page 350–355

Finish milling cutter

H | λ_s=50° γ_s=–5° | ZEFP | ≤ 68 HRC









DIN 6527

HA

V0



Factory standard

HA

V0

DC f8 mm	APMX mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 50 635 ... EUR		Article no. 50 635 ... EUR	
4	11	57	6	6	39,12	040		
4	16	62	6	6			44,53	041
5	13	57	6	6	36,59	050		
5	18	62	6	6			42,43	051
6	13	57	6	6	41,22	060		
6	18	62	6	6			46,96	061
8	19	63	8	6	46,96	080		
8	24	68	8	6			54,56	081
10	22	72	10	6	80,67	100		
10	30	80	10	6			92,58	101
12	26	83	12	6	109,50	120		
12	36	93	12	6			127,80	121
14	26	83	14	6	143,30	140		
14	42	99	14	6			175,20	141
16	32	92	16	8	195,10	160		
16	48	108	16	8			239,10	161
16	90	150	16	8			254,60	162
18	32	92	18	8	216,00	180		
18	54	114	18	8			277,80	181
20	38	104	20	8	278,80	200		
20	60	126	20	8			356,00	201
20	75	135	20	8			319,60	202
20	95	150	20	8			372,50	203
25	75	150	25	8	882,90	250		
25	95	160	25	8			913,70	251
32	75	150	32	8	1.057,00	320		
32	95	160	32	8			1.085,00	321

Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials	●	●

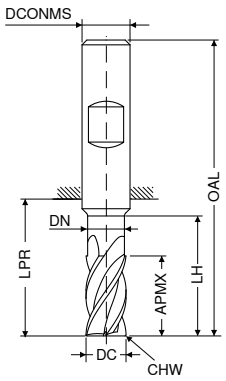
→ v_c/f_z Page 350–355

14

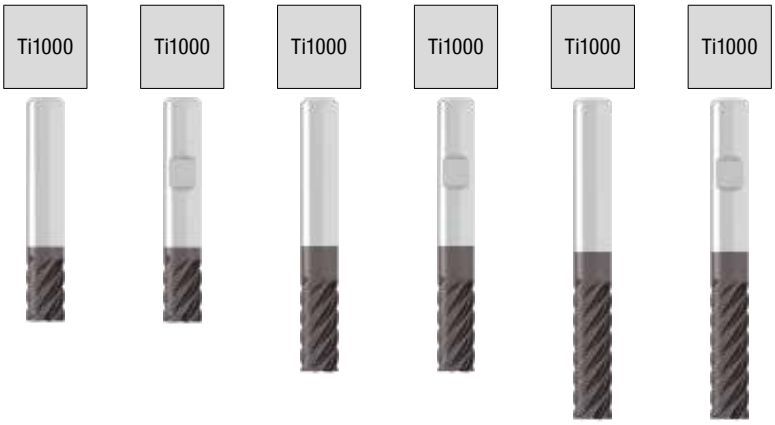
Finish milling cutter

H | λ_s=45° γ_s=16° | ZEFP | ≤ 50 HRC





LPR with Shank DIN 6535 HB





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB | HA | HB

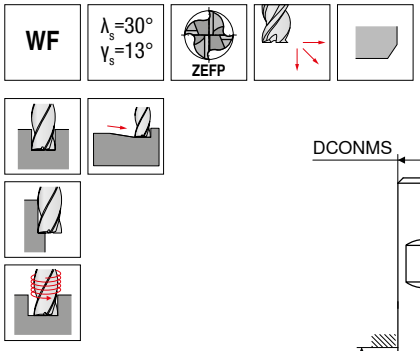
V1 | V1 | V1 | V1 | V1 | V1

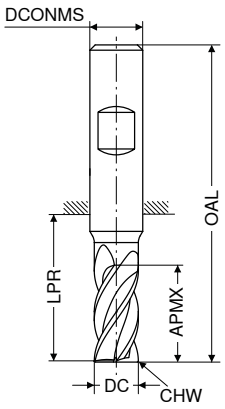
DC $_{e8}$	APMX	DN	LH	LPR	OAL	DCONMS $_{h6}$	CHW	ZEFP	Article no. 52 112 ...		Article no. 52 112 ...		Article no. 52 122 ...		Article no. 52 122 ...		Article no. 52 123 ...		Article no. 52 123 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
5	8	4,8	13	18	54	6	0,02	6	52,35	051	52,35	050								
5	13	4,8	18	22	58	6	0,02	6					55,00	051	55,00	050				
6	10	5,8	15	18	54	6	0,03	6	49,05	061	49,05	060								
6	16	5,8	20	22	58	6	0,03	6					53,79	061	53,79	060				
6	21			29	65	6	0,03	6									73,52	061	73,52	060
7	12	6,8	17	23	59	8	0,04	6	64,81	071	64,81	070								
7	22	6,8	30	34	70	8	0,04	6					68,34	071	68,34	070				
7	25			39	75	8	0,04	6									89,72	071	89,72	070
8	12	7,8	17	23	59	8	0,04	6	60,74	081	60,74	080								
8	22	7,8	32	34	70	8	0,04	6					67,24	081	67,24	080				
8	28			39	75	8	0,04	6									91,48	081	91,48	080
9	14	8,8	19	20	60	10	0,04	6	94,12	091	94,12	090								
9	25	8,8	33	33	73	10	0,04	6					104,80	091	104,80	090				
9	30			45	85	10	0,04	6									162,00	091	162,00	090
10	14	9,8	19	20	60	10	0,05	6	89,72	101	89,72	100								
10	25	9,8	33	33	73	10	0,05	6					104,00	101	104,00	100				
10	35			45	85	10	0,05	6									165,40	101	165,40	100
12	16	11,8	21	25	70	12	0,05	6	133,30	121	133,30	120								
12	28	11,8	38	39	84	12	0,05	6					140,00	121	140,00	120				
12	45			55	100	12	0,05	6									230,40	121	230,40	120
14	18	13,8	23	25	70	14	0,06	6	165,40	141	165,40	140								
14	30	13,8	38	39	84	14	0,06	6					196,30	141	196,30	140				
16	20	15,8	28	32	80	16	0,06	6	202,80	161	202,80	160								
16	35	15,8	43	45	93	16	0,06	6					231,50	161	231,50	160				
16	50			62	110	16	0,06	6									339,60	162	338,30	160
16	65			77	125	16	0,06	6									382,40	163	382,40	161
18	20	17,8	28	32	80	18	0,07	8	248,00	181	248,00	180								
18	35	17,8	43	45	93	18	0,07	8					280,00	181	280,00	180				
20	25	19,8	33	35	85	20	0,07	8	307,50	201	307,50	200								
20	40	19,8	45	50	100	20	0,07	8					343,80	201	343,80	200				
20	55			65	115	20	0,07	8									482,80	202	481,60	200
20	70			80	130	20	0,07	8									591,90	203	590,80	201
25	55	24,8	63	69	125	25	0,08	8					573,10	251	573,10	250				
25	75			94	150	25	0,08	8									943,50	251	943,50	250

Steel	○	○	○	○	○	○
Stainless steel	●	●	●	●	●	●
Cast iron	○	○	○	○	○	○
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened materials	○	○	○	○	○	○

→ v_c/f_z Page 350–355

Roughing-Finishing Cutter





Ti400





DIN 6527

HB

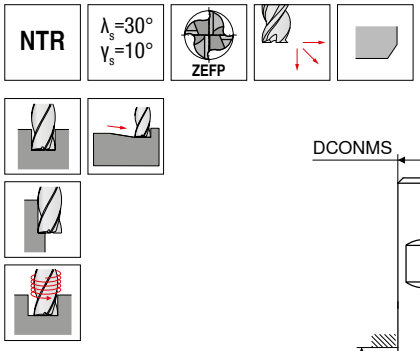
V0

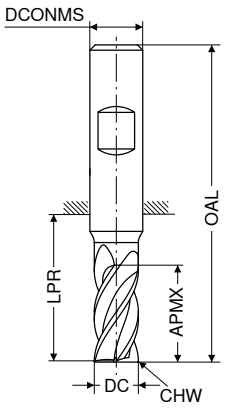
DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 628 ... EUR	
5	15	21	57	6	0,25	4	77,15	050
6	16	21	57	6	0,25	4	77,15	060
8	22	27	63	8	0,25	4	96,11	080
10	25	32	72	10	0,25	4	103,40	100
12	28	38	83	12	0,25	4	127,80	120
16	35	44	92	16	0,25	4	198,30	160
20	40	54	104	20	0,25	4	298,80	200

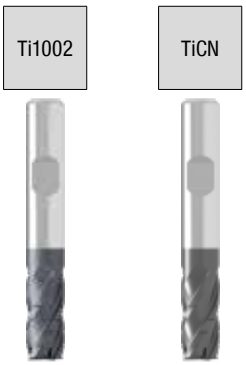
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

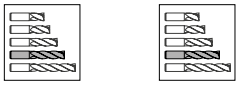
→ v_c/f_z Page 350–353

Roughing-Finishing Cutter









DIN 6527 | DIN 6527

HB | HB

V1 | V1

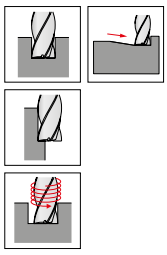
DC h10 mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 301 ... EUR		Article no. 52 300 ... EUR	
6	13	21	57	6		3	62,05	**060**	62,05	**060**
8	19	27	63	8	0,08	3	76,94	**080**	76,94	**080**
10	22	32	72	10	0,12	4	83,99	**100**	83,99	**100**
12	26	38	83	12	0,15	4	105,50	**120**	105,50	**120**
14	26	38	83	14	0,17	4	134,50	**140**	134,50	**140**
16	32	44	92	16	0,20	4	158,70	**160**	158,70	**160**
18	32	48	92	18	0,22	4	217,10	**180**	217,10	**180**
20	38	54	104	20	0,25	4	240,20	**200**	240,20	**200**

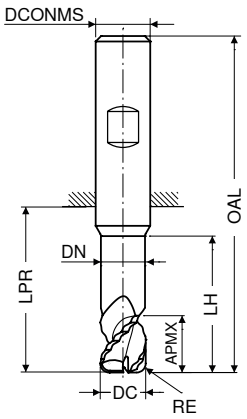
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	

→ v_c/f_z Page 350–353

Rough milling cutter with corner radius

WR | λ_s=45° γ_s= 9° | ZEFP | HPC













Factory standard | Factory standard

HA | HB

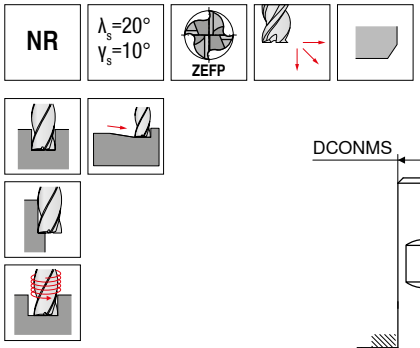
DC h6	RE +/-0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	V0 Article no. 54 625 ...		V0 Article no. 54 627 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
3		4,5	2,8	15	22	58	6	3	50,03	030	50,03	030
3		8,0	2,8	15	22	58	6	3	54,89	031	54,89	031
4		5,5	3,8	20	26	62	6	3	50,03	040	50,03	040
4		10,5	3,8	20	26	62	6	3	54,89	041	54,89	041
5		7,0	4,8	25	34	70	6	3	53,89	050	53,89	050
5		13,0	4,8	25	34	70	6	3	59,07	051	59,07	051
6	1	8,5	5,8	30	34	70	6	3	54,56	061	54,56	061
6	1	16,0	5,8	30	34	70	6	3	59,96	062	59,96	062
7	1	11,0	6,7	40	44	80	8	3	71,97	071	71,97	071
7	1	21,0	6,7	40	44	80	8	3	79,25	072	79,25	072
8	1	11,0	7,7	40	44	80	8	3	71,97	081	71,97	081
8	1	21,0	7,7	40	44	80	8	3	79,25	082	79,25	082
9	1	14,0	8,7	50	54	94	10	3	101,60	091	101,60	091
9	1	26,0	8,7	50	54	94	10	3	112,40	092	112,40	092
10	2	14,0	9,7	50	54	94	10	3	101,60	101	101,60	101
10	2	26,0	9,7	50	54	94	10	3	112,40	102	112,40	102
11	2	16,0	10,6	60	64	109	12	3	164,20	111	164,20	111
11	2	31,0	10,6	60	64	109	12	3	179,60	112	179,60	112
12	2	16,0	11,6	60	64	109	12	3	164,20	121	164,20	121
12	2	31,0	11,6	60	64	109	12	3	179,60	122	179,60	122
14	2	19,0	13,6	70	74	119	14	3	226,00	141	226,00	141
14	2	36,0	13,6	70	74	119	14	3	250,20	142	250,20	142
16	2	22,0	15,5	80	84	132	16	3	288,80	161	288,80	161
16	2	41,0	15,5	80	84	132	16	3	318,60	162	318,60	162
18	2	25,0	17,5	90	94	142	18	3	351,60	181	351,60	181
18	2	47,0	17,5	90	94	142	18	3	405,60	182	405,60	182
20	2	27,0	19,5	100	104	154	20	3	379,10	201	379,10	201
20	2	52,0	19,5	100	104	154	20	3	435,30	202	435,30	202

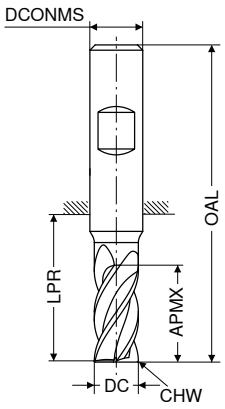
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 338+339

14

Rough milling cutter











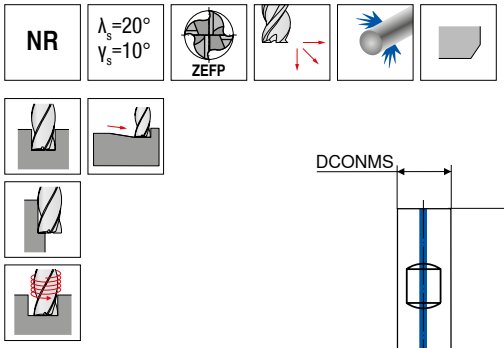


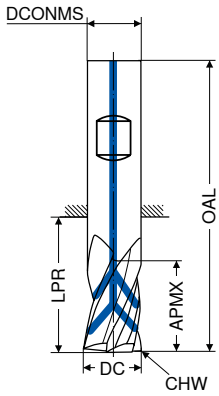
							DIN 6527 HB V0 Article no. 50 618 ...		DIN 6527 HB V0 Article no. 50 624 ...	
DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	EUR		EUR	
4	8	21	57	6	0,6	4			73,07	040
5	8	18	54	6	0,6	4	76,81	050		
5	13	21	57	6	0,6	4			73,07	050
6	8	18	54	6	0,6	4	68,66	060		
6	13	21	57	6	0,6	4			79,35	060
7	11	22	58	8	0,6	4	92,47	070		
7	19	27	63	8	0,6	4			90,49	070
8	11	22	58	8	0,6	4	83,99	080		
8	19	27	63	8	0,6	4			90,49	080
9	13	26	66	10	0,6	4	105,40	090		
9	22	32	72	10	0,6	4			105,00	090
10	13	26	66	10	0,6	4	105,40	100		
10	22	32	72	10	0,6	4			105,00	100
11	26	38	83	12	0,6	4			124,60	110
12	16	28	73	12	0,6	4	115,80	120		
12	26	38	83	12	0,6	4			124,60	120
13	26	38	83	14	0,6	4			175,20	130
14	16	31	76	14	0,6	4	159,90	140		
14	26	38	83	14	0,6	4			175,20	140
16	19	34	82	16	0,6	4	197,30	160		
16	32	44	92	16	0,6	4			197,30	160
18	19	36	84	18	0,6	4	237,00	180		
18	32	44	92	18	0,6	4			264,60	180
20	19	42	92	20	0,6	4	283,30	200		
20	38	54	104	20	0,6	4			294,30	200
25	45	65	121	25	0,6	5			360,40	250

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

→ v_c/f_z Page 350–353

Rough milling cutter





Ti400





DIN 6527

HB

V0

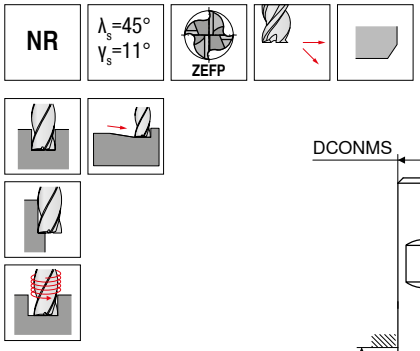
DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 625 ...	
							EUR	
6	13	21	57	6	0,6	4	134,50	**060**
8	19	27	63	8	0,6	4	134,50	**080**
10	22	32	72	10	0,6	4	153,20	**100**
12	26	38	83	12	0,6	4	177,50	**120**
14	26	38	83	14	0,6	4	283,30	**140**
16	32	44	92	16	0,6	4	283,30	**160**
18	32	44	92	18	0,6	4	422,10	**180**
20	38	54	104	20	0,6	4	422,10	**200**

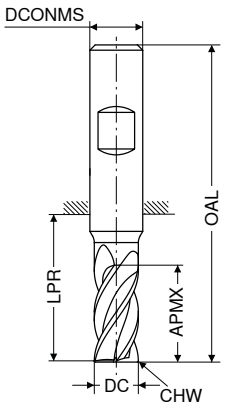
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 350–353

14

Rough milling cutter





Ti400





DIN 6527

HB 

V0

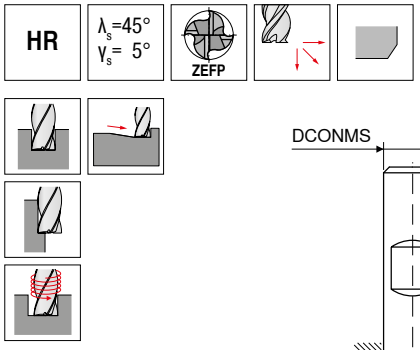
DC $_{d11}$ mm	APMX mm	LPR mm	OAL mm	DCONMS $_{h5}$ mm	CHW mm	ZEFP	Article no. 50 637 ... EUR	
6	13	21	57	6	0,5	4	83,65	**060**
8	19	27	63	8	0,5	4	95,89	**080**
10	22	32	72	10	0,5	4	104,70	**100**
12	26	38	83	12	0,5	4	124,60	**120**
14	26	38	83	14	0,5	4	175,20	**140**
16	32	44	92	16	0,5	5	197,30	**160**
18	32	44	92	18	0,5	5	265,60	**180**
20	38	54	104	20	0,5	6	295,40	**200**
25	45	65	121	25	0,5	6	363,80	**250**

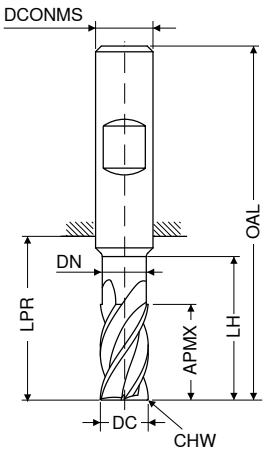
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

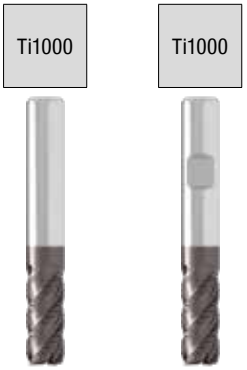
→ v_c/f_z Page 350–353

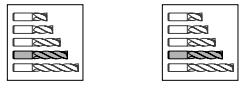
Rough milling cutter

▲ with integrated chip breakers in the flutes









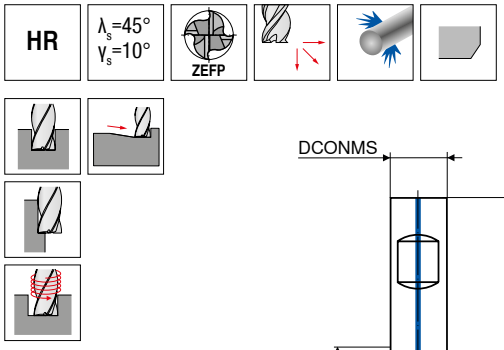
DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Factory standard HA V1 Article no. 52 340 ...		Factory standard HB V1 Article no. 52 341 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR	
6	16	5,8	21	22	58	6	0,15	4	93,02	060	93,02	060
8	22	7,7	27	34	70	8	0,20	4	106,50	080	106,50	080
10	25	9,7	30	33	73	10	0,20	4	115,80	100	115,80	100
12	28	11,6	38	39	84	12	0,25	4	135,50	120	135,50	120
14	30	13,6	40	39	84	14	0,30	4	183,00	140	183,00	140
16	35	15,5	45	45	93	16	0,35	5	233,60	160	233,60	160
18	35	17,5	45	45	93	18	0,40	5	291,00	180	291,00	180
20	40	19,5	55	54	104	20	0,40	5	349,30	200	349,30	200
25	50	24,0	65	69	125	25	0,50	5	588,60	250	588,60	250

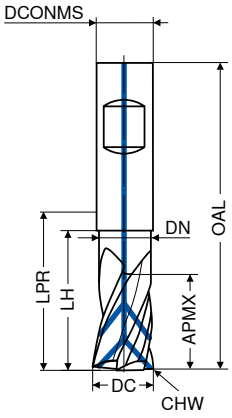
Steel	○	○
Stainless steel	●	●
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 344+345

Rough milling cutter

▲ with integrated chip breakers in the flutes













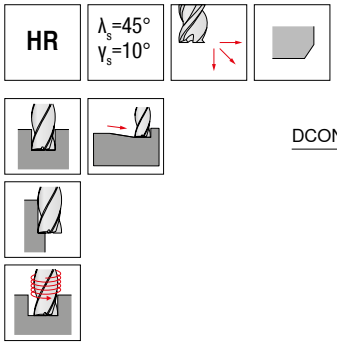
									Factory standard		Factory standard			
									HA		HB			
									V1		V1			
DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 338 ...		Article no. 52 339 ...			
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR			
6	16	5,8	21	22	58	6	0,15	4	115,80	060	115,80	060		
8	22	7,7	27	34	70	8	0,20	4	129,00	080	129,00	080		
10	25	9,7	30	33	73	10	0,20	4	151,00	100	151,00	100		
12	28	11,6	38	39	84	12	0,25	4	190,70	120	190,70	120		
14	30	13,6	40	39	84	14	0,25	4	251,30	140	251,30	140		
16	35	15,5	45	45	93	16	0,35	5	324,10	160	324,10	160		
18	35	17,5	45	45	93	18	0,35	5	380,30	180	380,30	180		
20	40	19,5	55	54	104	20	0,40	5	477,30	200	477,30	200		

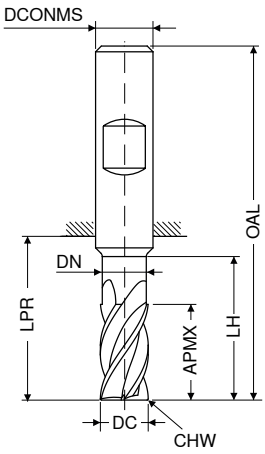
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys	○	○
hardened materials		

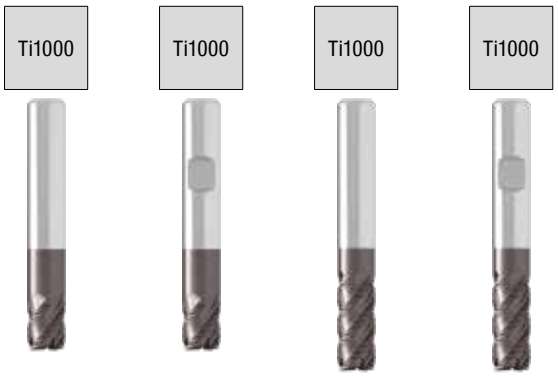
→ v_c/f_z Page 344+345

Rough milling cutter

▲ with integrated chip breakers in the flutes









Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 342 ...		Article no. 52 343 ...		Article no. 52 342 ...		Article no. 52 343 ...	
mm	mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
6	8	6,0		18	54	6	0,15	4	81,99	060	81,99	060				
6	16	5,8	21	22	58	6	0,15	4					90,93	061	90,93	061
8	11	8,0		23	59	8	0,20	4	94,12	080	94,12	080				
8	22	7,7	27	34	70	8	0,20	4					104,20	081	104,20	081
10	13	10,0		27	67	10	0,20	4	100,70	100	100,70	100				
10	25	9,7	30	33	73	10	0,20	4					112,40	101	112,40	101
12	16	12,0		29	74	12	0,25	4	116,80	120	116,80	120				
12	28	11,6	38	39	84	12	0,25	4					132,30	121	132,30	121
14	16	14,0		30	75	14	0,25	4	161,00	140	161,00	140				
14	30	13,5	40	39	84	14	0,25	4					177,50	141	177,50	141
16	19	16,0		36	84	16	0,35	5	200,60	160	200,60	160				
16	35	15,5	45	45	93	16	0,35	5					228,10	161	228,10	161
18	19	18,0		32	80	18	0,35	5	259,10	180	259,10	180				
18	35	17,5	45	45	93	18	0,35	5					282,20	181	282,20	181
20	19	20,0		43	93	20	0,40	5	307,50	200	307,50	200				
20	40	19,5	55	54	104	20	0,40	5					342,80	201	342,80	201
25	50	24,0	65	69	125	25	0,50	5					579,70	251	579,70	251

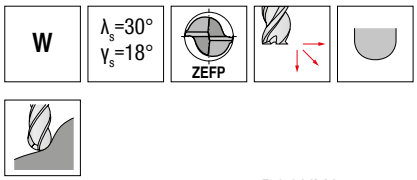
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals				
Heat resistant alloys	○	○	○	○
hardened materials				

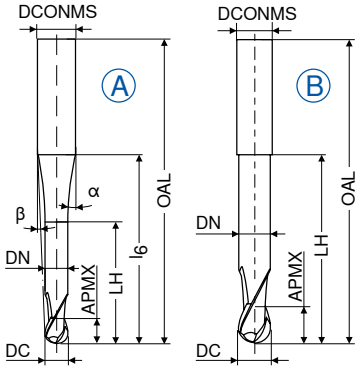
→ v_c/f_z Page 344+345

14

Ball nosed cutter

- ▲ Radius accuracy: ±0.005 mm
- ▲ For Ø DC ≤ 5.0 mm, angle tolerance α and β: ±0.5°







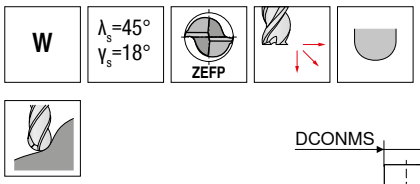
DC ±0,01	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	Factory standard HA V1 Article no. 52 718 ... EUR		Factory standard HA V1 Article no. 52 720 ... EUR	
mm	mm	mm	mm	mm	mm			mm						
0,5	1,0	0,45	2,0	9	38	10,0	8,0	3	2	A	123,50	**005**		
1,0	2,0	0,95	4,0	9	38	12,5	6,5	3	2	A	112,40	**010**		
1,5	2,5	1,40	7,5	9	38	32,0	5,0	3	2	A	99,53	**015**		
2,0	3,0	1,80	8,0	9	38	31,0	3,5	3	2	A	77,37	**020**		
3,0	3,5	2,80	10,0	20	57	11,5	5,0	6	2	A	74,29	**030**		
3,0	3,5	2,80	12,0	40	80	3,5	2,5	6	2	A			91,59	**030**
4,0	4,0	3,80	12,0	20	57	11,0	3,5	6	2	A	72,52	**040**		
4,0	4,0	3,80	20,0	40	80	4,0	1,5	6	2	A			81,99	**040**
5,0	5,0	4,70	10,0	40	100	1,5	1,0	6	2	A			80,24	**050**
5,0	5,0	4,70	14,0	20	57	10,0	2,0	6	2	A	70,65	**050**		
6,0	6,0	5,60	20,0		57			6	2	B	64,81	**060**		
6,0	6,0	5,60	40,0		100			6	2	B			79,13	**060**
8,0	7,0	7,60	25,0		63			8	2	B	87,72	**080**		
8,0	7,0	7,60	60,0		120			8	2	B			102,40	**080**
10,0	8,0	9,60	30,0		72			10	2	B	138,80	**100**		
10,0	8,0	9,60	60,0		120			10	2	B			142,30	**100**
12,0	8,0	11,50	40,0		83			12	2	B	166,50	**120**		
12,0	10,0	11,50	70,0		160			12	2	B			220,50	**120**

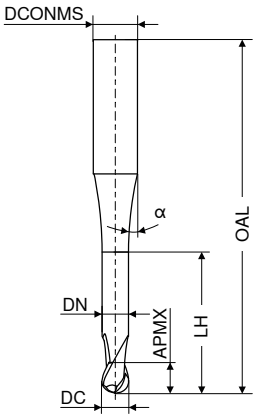
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys	○	○
hardened materials		

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm







Factory standard | Factory standard

HA | HA

DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 903 ...		V0 Article no. 50 903 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR	
0,2	0,2	0,18	0,6	55	15	3	2	75,39	021		
0,2	0,2	0,18	1,0	55	15	3	2	76,16	022		
0,2	0,2	0,18	1,6	55	15	3	2	76,81	023		
0,2	0,2	0,18	2,0	55	15	3	2	78,04	024		
0,3	0,3	0,28	0,9	55	15	3	2	75,39	031		
0,3	0,3	0,28	1,5	55	15	3	2	76,16	032		
0,3	0,3	0,28	2,4	55	15	3	2	76,81	033		
0,3	0,3	0,28	3,0	55	15	3	2	78,04	034		
0,4	0,4	0,37	1,2	55	15	3	2	75,39	041		
0,4	0,4	0,37	2,0	55	15	3	2	76,16	042		
0,4	0,4	0,37	3,2	55	15	3	2	76,81	043		
0,4	0,4	0,37	4,0	55	15	3	2	78,04	044		
0,5	0,5	0,45	1,5	55	15	3	2	73,74	051		
0,5	0,5	0,45	2,5	55	15	3	2	74,39	052		
0,5	0,5	0,45	4,0	55	15	3	2	75,39	053		
0,5	0,5	0,45	5,0	55	15	3	2	76,16	054		
0,6	0,6	0,58	2,0	55	15	3	2	63,48	061		
0,6	0,6	0,58	3,0	55	15	3	2	61,71	062		
0,6	0,6	0,58	5,0	65	15	3	2			67,34	063
0,6	0,6	0,58	6,0	65	15	3	2			71,42	064
0,8	0,8	0,77	2,5	55	15	3	2	61,71	081		
0,8	0,8	0,77	4,0	55	15	3	2	61,71	082		
0,8	0,8	0,77	6,5	65	15	3	2			68,66	083
0,8	0,8	0,77	8,0	65	15	3	2			71,42	084
1,0	1,0	0,95	3,0	55	15	3	2	61,71	101		
1,0	1,0	0,95	5,0	55	15	3	2	61,71	102		
1,0	1,0	0,95	8,0	65	15	3	2			65,24	103
1,0	1,0	0,95	10,0	65	15	3	2			71,42	104
1,0	1,0	0,95	12,0	65	15	3	2			73,07	105
1,2	1,2	1,15	3,0	55	15	3	2	61,71	121		
1,2	1,2	1,15	6,0	55	15	3	2	61,71	122		
1,2	1,2	1,15	10,0	65	15	3	2			68,66	123
1,2	1,2	1,15	12,0	65	15	3	2			71,42	124
1,3	1,3	1,25	4,0	55	15	3	2	61,71	131		
1,3	1,3	1,25	7,0	55	15	3	2	61,71	132		
1,3	1,3	1,25	11,0	65	15	3	2			68,66	133
1,3	1,3	1,25	13,0	65	15	3	2			71,42	134
1,5	1,5	1,44	5,0	55	15	3	2	63,48	151		
1,5	1,5	1,44	7,5	55	15	3	2	61,71	152		
1,5	1,5	1,44	12,0	65	15	3	2			71,42	154

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

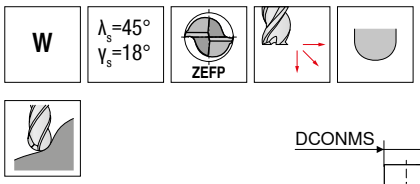
→ v_c/f_z Page 350–356

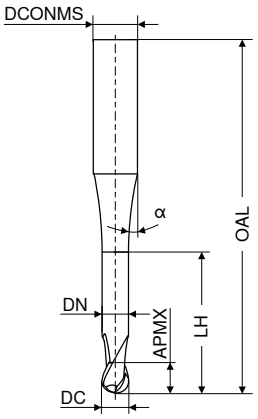
14

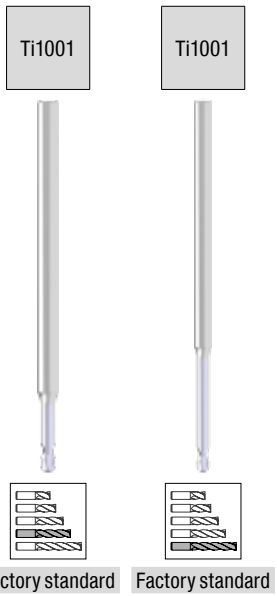
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm







Factory standard | Factory standard

HA | HA

DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 903 ...		V0 Article no. 50 903 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR	
1,5	1,5	1,44	15,0	65	15	3	2			73,07	153
1,6	1,6	1,52	5,0	55	15	3	2	63,48	161		
1,6	1,6	1,52	8,0	55	15	3	2	63,48	162		
1,6	1,6	1,52	13,0	65	15	3	2			68,66	163
1,6	1,6	1,52	16,0	65	15	3	2			73,07	164
1,8	1,8	1,72	5,5	55	15	3	2	61,71	181		
1,8	1,8	1,72	9,0	55	15	3	2	63,48	182		
1,8	1,8	1,72	14,5	65	15	3	2			68,66	183
1,8	1,8	1,72	18,0	65	15	3	2			73,07	184
2,0	2,0	1,92	6,0	55	15	3	2	61,71	201		
2,0	2,0	1,92	10,0	55	15	3	2	61,71	202		
2,0	2,0	1,92	14,0	55	15	3	2	65,24	203		
2,0	2,0	1,92	16,0	65	15	3	2			73,07	204
2,0	2,0	1,92	20,0	65	15	3	2			71,42	205
2,3	2,3	2,22	7,0	55	15	3	2	61,71	231		
2,3	2,3	2,22	11,5	55	15	3	2	61,71	232		
2,3	2,3	2,22	18,5	65	15	3	2			65,24	233
2,3	2,3	2,22	20,0	65	15	3	2			71,42	234
2,3	2,3	2,22	23,0	65	15	3	2			73,07	235
3,0	3,0	2,90	9,0	65	15	6	2	65,24	301		
3,0	3,0	2,90	15,0	65	15	6	2	73,07	302		
3,0	3,0	2,90	24,0	100	15	6	2			79,25	303
3,0	3,0	2,90	30,0	100	15	6	2			82,67	304
4,0	4,0	3,90	12,0	65	15	6	2	73,07	401		
4,0	4,0	3,90	20,0	65	15	6	2	73,07	402		
4,0	4,0	3,90	32,0	100	15	6	2			82,67	403
4,0	4,0	3,90	40,0	100	15	6	2			85,09	404
5,0	5,0	4,90	15,0	65	15	6	2	73,07	501		
5,0	5,0	4,90	25,0	65	15	6	2	73,07	502		
5,0	5,0	4,90	40,0	100	15	6	2			85,09	503
5,0	5,0	4,90	50,0	100	15	6	2			89,39	504
6,0	6,0	5,90	18,0	65	15	6	2	73,07	601		
6,0	6,0	5,90	30,0	100	15	6	2			82,67	602
6,0	6,0	5,90	48,0	100	15	6	2			89,39	603
6,0	6,0	5,90	60,0	100	15	6	2			92,14	604

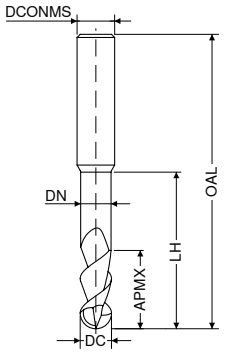
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–356

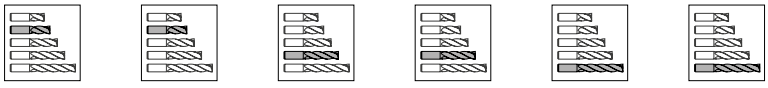
Ball nosed cutter

▲ Radius accuracy: ±0.01 mm

W | λ_s=55° γ_s= 7° | ZEFP | HPC







Factory standard | Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA | HA

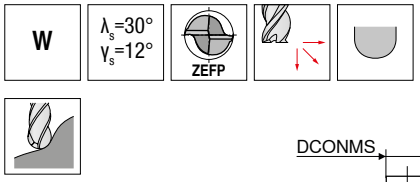
V0 | V0 | V0 | V0 | V0 | V0

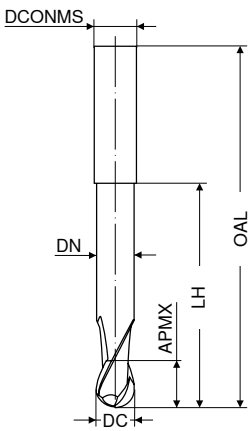
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 54 640 ...		Article no. 54 642 ...		Article no. 54 640 ...		Article no. 54 642 ...		Article no. 54 640 ...		Article no. 54 642 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR		EUR		EUR	
3	5,0	2,8	12	55	6	2	59,84	031	72,30	031								
3	3,5	2,8	15	58	6	2					65,24	034	79,02	034				
3	8,0	2,8	15	58	6	2					68,56	032	82,89	032				
3	3,5	2,8	24	67	6	2									79,80	035	94,67	035
4	6,5	3,8	12	55	6	2	59,84	041	72,30	041								
4	10,5	3,8	20	62	6	2					68,56	042	93,13	042				
4	4,5	3,8	20	62	6	2					65,24	044	79,02	044				
4	4,5	3,8	32	74	6	2									79,80	045	94,67	045
5	8,0	4,8	15	58	6	2	59,84	051	72,30	051								
5	13,0	4,8	25	70	6	2					68,56	052	82,89	052				
5	5,5	4,8	25	70	6	2					65,24	054	79,02	054				
5	5,5	4,8	40	88	6	2									79,80	055	94,67	055
6	10,0	5,8	18	58	6	2	59,84	061	72,30	061								
6	16,0	5,8	30	70	6	2					68,56	062	82,89	062				
6	7,0	5,8	30	70	6	2					65,24	064	79,02	064				
6	7,0	5,8	48	88	6	2									78,47	065	94,67	065
8	13,0	7,7	24	64	8	2	78,25	081	92,36	081								
8	21,0	7,7	40	80	8	2					89,27	082	106,00	082				
8	9,0	7,7	40	80	8	2					85,09	084	100,90	084				
8	9,0	7,7	64	104	8	2									102,60	085	122,30	085
10	16,0	9,7	30	74	10	2	105,00	101	122,30	101								
10	26,0	9,7	50	94	10	2					121,30	102	143,30	102				
10	11,0	9,7	50	94	10	2					114,60	104	131,30	104				
10	11,0	9,7	80	124	10	2									137,80	105	157,60	105
12	19,0	11,6	36	85	12	2	147,80	121	162,00	121								
12	31,0	11,6	60	109	12	2					199,50	122	223,80	122				
12	13,0	11,6	60	109	12	2					192,80	124	213,80	124				
12	13,0	11,6	96	145	12	2									265,60	125	293,20	125
14	22,0	13,6	42	91	14	2	183,00	141	200,60	141								
14	36,0	13,6	70	119	14	2					251,30	142	275,60	142				
14	15,0	13,6	70	119	14	2					239,10	144	264,60	144				
14	15,0	13,6	112	161	14	2									345,10	145	378,00	145
16	25,0	15,5	48	100	16	2	240,20	161	260,10	161								
16	41,0	15,5	80	132	16	2					329,60	162	358,30	162				
16	17,0	15,5	80	132	16	2					315,20	164	339,60	164				
16	17,0	15,5	128	180	16	2									470,60	165	511,40	165
18	29,0	17,5	54	106	18	2	335,10	181	356,00	181								
18	47,0	17,5	90	142	18	2					459,60	182	488,30	182				
18	20,0	17,5	90	142	18	2					438,70	184	465,10	184				
18	20,0	17,5	144	196	18	2									657,90	185	695,50	185
20	32,0	19,5	60	114	20	2	337,30	201	363,80	201								
20	52,0	19,5	100	154	20	2					465,10	202	497,10	202				
20	22,0	19,5	100	154	20	2					445,30	204	473,90	204				
20	22,0	19,5	160	214	20	2									663,40	205	712,00	205

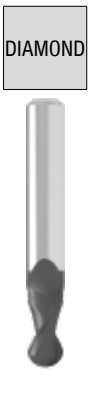
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

→ v_c/f_z Page 338+339

Ball nosed cutter













Factory standard

HA

Factory standard

HA

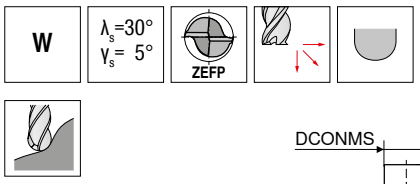
DC h10	APMX	LH	DN	OAL	DCONMS h6	ZEFP	V1 Article no. 52 766 ...		V1 Article no. 52 768 ...	
mm	mm	mm	mm	mm	mm		EUR		EUR	
0,5	1,5			38	3	2	116,80	**005**		
1,0	2,0			38	3	2	113,60	**010**		
2,0	3,0			38	3	2	113,60	**020**		
2,0	3,0			50	6	2	174,10	**021**		
2,0	8,0	31	1,8	60	2	2			135,50	**020**
3,0	5,0			38	3	2	113,60	**030**		
3,0	5,0			50	6	2	174,10	**031**		
3,0	12,0	41	2,8	70	3	2			129,00	**030**
4,0	8,0			54	6	2	174,10	**040**		
4,0	15,0	51	3,8	80	4	2			180,80	**040**
5,0	9,0			54	6	2	174,10	**050**		
5,0	20,0	71	4,8	100	5	2			208,30	**050**
6,0	10,0			54	6	2	168,60	**060**		
6,0	20,0	63	5,8	100	6	2			233,60	**060**
8,0	12,0			58	8	2	234,80	**080**		
8,0	20,0	83	7,8	120	8	2			308,60	**080**
10,0	14,0			66	10	2	297,50	**100**		
10,0	25,0	99	9,8	140	10	2			397,90	**100**
12,0	25,0	104	11,8	150	12	2			524,60	**120**

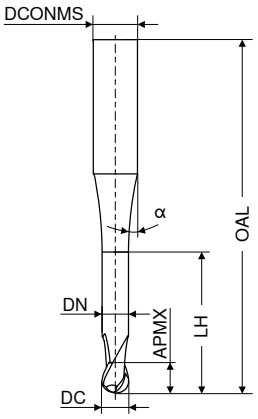
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 348

Micro-ball nosed cutter

▲ Radius accuracy: ±0.01 mm







Factory standard | Factory standard

HA | HA

DC f8	APMX	LH	DN	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 912 ...		V0 Article no. 50 912 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR	
0,6	1,2	3,0	0,58	55	15	6	2	138,80	906		
0,6	1,2	6,0	0,58	65	15	6	2			152,10	006
0,8	1,2	4,0	0,77	55	15	6	2	138,80	908		
0,8	1,2	8,0	0,77	65	15	6	2			152,10	008
1,0	1,5	5,0	0,95	55	15	6	2	138,80	910		
1,0	1,5	12,0	0,95	65	15	6	2			152,10	010
1,2	1,6	6,0	1,15	55	15	6	2	138,80	912		
1,2	1,6	12,0	1,15	65	15	6	2			152,10	012
1,5	1,8	7,5	1,44	55	15	6	2	138,80	915		
1,5	1,8	15,0	1,44	65	15	6	2			152,10	015
2,0	2,0	10,0	1,92	55	15	6	2	138,80	920		
2,0	2,0	20,0	1,92	65	15	6	2			152,10	020

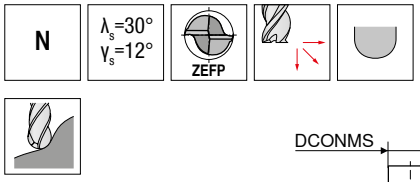
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

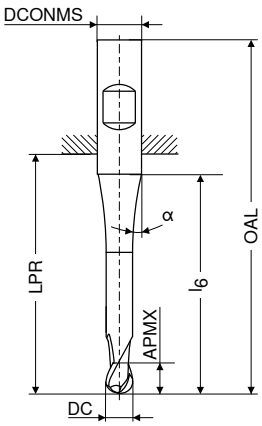
→ v_c/f_z Page 348

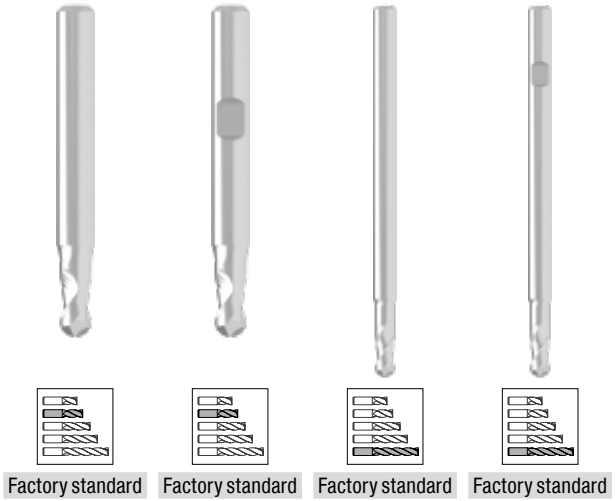
14

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







								Factory standard		Factory standard		Factory standard		Factory standard	
								HA		HB		HA		HB	
								V1		V1		V1		V1	
DC_{f8}	APMX	l_6	LPR	OAL	α° ±0,5	$DCONMS_{h6}$	ZEFP	Article no. 52 250 ...		Article no. 52 250 ...		Article no. 52 251 ...		Article no. 52 251 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR		EUR		EUR	
0,10	0,2	12,5	10	38	8	3	2	81,89	910						
0,15	0,3	11,5	10	38	8	3	2	71,09	915						
0,20	0,4	12,0	10	38	8	3	2	65,36	920						
0,25	0,5	12,5	10	38	8	3	2	63,04	925						
0,30	1,0	11,0	10	38	8	3	2	58,42	930						
0,35	1,0	11,0	10	38	8	3	2	51,69	935						
0,40	1,0	11,0	10	38	8	3	2	37,59	940						
0,50	1,5	11,5	10	38	8	3	2	29,98	950						
0,50	1,5	15,5	18	54	12	6	2	35,93	951						
0,50	1,5	11,5	47	75	8	3	2					41,43	005		
0,50	1,5	16,0	44	80	12	6	2					47,94	006		
0,60	1,5	11,5	10	38	8	3	2	32,96	960						
0,70	2,0	11,5	10	38	8	3	2	29,98	970						
0,80	2,0	11,5	10	38	8	3	2	29,98	980						
0,90	2,5	12,0	10	38	8	3	2	29,98	990						
1,00	2,0	11,0	22	50	8	3	2	30,97	011						
1,00	2,0	16,0	18	54	12	6	2	34,38	106	33,18	010				
1,00	3,0	12,0	47	75	8	3	2					45,64	010		
1,00	3,0	17,5	44	80	12	6	2					51,80	011	51,80	610
1,10	3,0	13,0	22	50	8	3	2	29,98	911						
1,20	3,0	13,0	22	50	8	3	2	29,98	012						
1,40	3,0	13,0	22	50	8	3	2	29,98	014						
1,50	3,0	11,0	22	50	8	3	2	29,98	016						
1,50	3,0	16,5	18	54	12	6	2	34,38	156	33,18	015				
1,50	4,0	13,0	47	75	8	3	2					45,19	015		
1,50	4,0	16,5	44	80	12	6	2					51,80	016	51,80	615
1,60	4,0	10,5	22	50	8	3	2	29,98	916						
1,80	4,0	10,0	22	50	8	3	2	29,98	018						
2,00	4,0	10,0	22	50	8	3	2	30,97	021						
2,00	4,0	16,5	18	54	12	6	2	34,38	206	33,18	020				
2,00	6,0	12,5	47	75	8	3	2					42,33	020		
2,00	6,0	18,0	44	80	12	6	2					50,59	021	50,59	620
2,50	5,0	10,5	22	50	8	3	2	29,98	025						
2,50	5,0	16,0	18	54	12	6	2	33,18	026	33,18	027				
2,50	8,0	14,0	47	75	8	3	2					41,33	025		
2,50	8,0	18,5	44	80	12	6	2					50,92	026	50,92	625
3,00	6,0		22	50		3	2	30,97	031						
3,00	6,0	15,5	18	54	12	6	2	34,38	306	33,18	030				
3,00	10,0		47	75		3	2					40,66	030		
3,00	10,0	19,5	44	80	12	6	2					49,48	031	49,48	630
4,00	7,0	16,0	18	54	12	6	2	34,38	406	33,18	040				

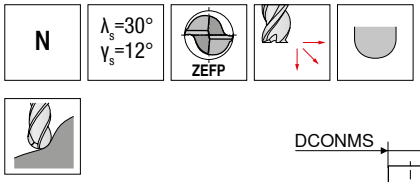
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

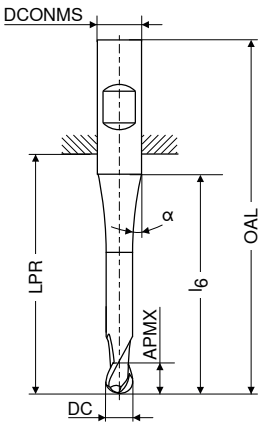
→ v_c/f_z Page 350–356

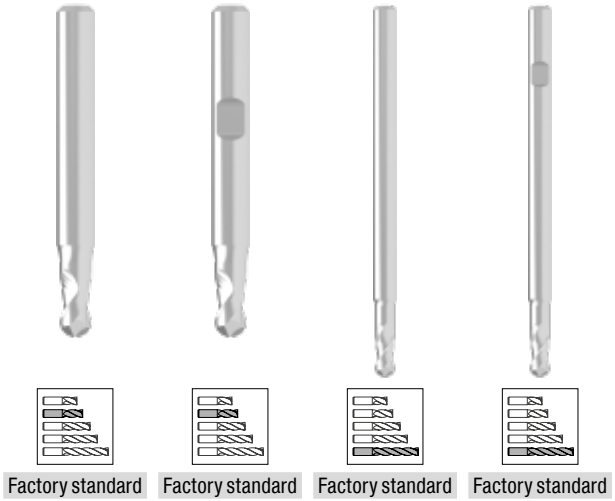
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







DC f8	APMX	l6	LPR	OAL	α° ±0,5	DCONMS h6	ZEFP	Factory standard HA V1 Article no. 52 250 ...		Factory standard HB V1 Article no. 52 250 ...		Factory standard HA V1 Article no. 52 251 ...		Factory standard HB V1 Article no. 52 251 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR		EUR		EUR	
4,00	7,0		26	54		4	2	31,52	041						
4,00	13,0		47	75		4	2					38,46	040		
4,00	13,0	20,5	44	80	12	6	2					49,48	041	49,48	640
5,00	8,0	13,0	18	54	12	6	2	34,38	506	33,18	050				
5,00	8,0		26	54		5	2	33,18	051						
5,00	14,0		47	75		5	2					43,20	050		
5,00	14,0	20,5	64	100	12	6	2					49,48	051	49,48	650
6,00	10,0		18	54		6	2	33,18	061	33,18	060				
6,00	16,0		64	100		6	2					46,84	061	46,84	060
8,00	12,0		23	59		8	2	38,46	081	38,46	080				
8,00	22,0		64	100		8	2					54,78	081	54,78	080
10,00	13,0		27	67		10	2	49,71	101	49,71	100				
10,00	25,0		60	100		10	2					73,52	101	73,52	100
12,00	16,0		28	73		12	2	71,65	121	71,65	120				
12,00	26,0		55	100		12	2					97,98	121	97,98	120
14,00	16,0		30	75		14	2	92,80	141	92,80	140				
14,00	26,0		55	100		14	2					138,80	141	138,80	140
16,00	20,0		35	83		16	2	103,40	161	103,40	160				
16,00	30,0		102	150		16	2					224,90	161	224,90	160
20,00	25,0		43	93		20	2	179,60	201	179,60	200				
20,00	40,0		100	150		20	2					271,10	201	271,10	200

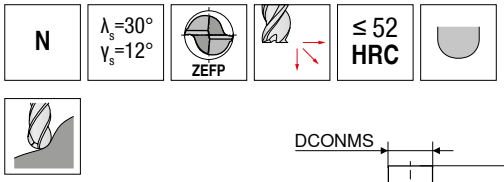
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

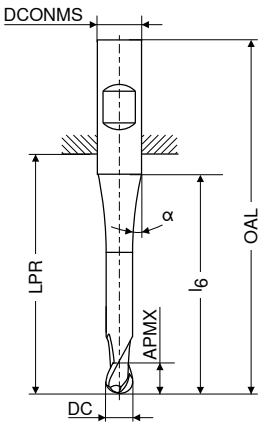
→ v_c/f_z Page 350–356

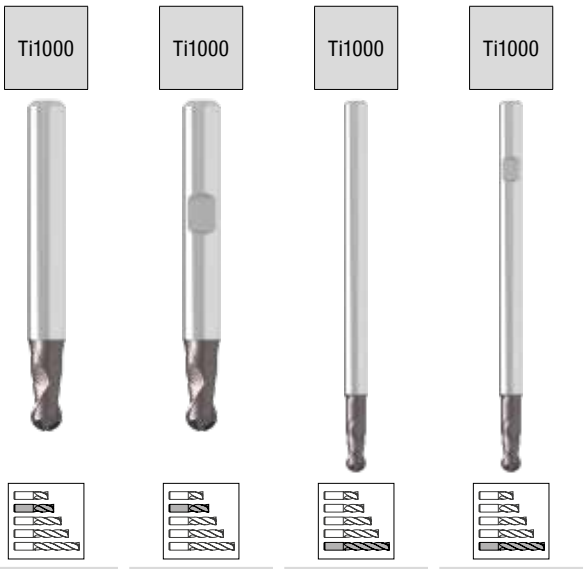
14

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

DC f8	APMX	l6	LPR	OAL	α° ±0,5°	DCONMS h6	ZEFP	V1 Article no. 52 254 ...		V1 Article no. 52 254 ...		V1 Article no. 52 255 ...		V1 Article no. 52 255 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR		EUR		EUR	
0,10	0,2	12,5	10	38	8	3	2	86,07	910						
0,15	0,3	11,5	10	38	8	3	2	75,49	915						
0,20	0,4	12,0	10	38	8	3	2	71,65	920						
0,25	0,5	12,5	10	38	8	3	2	83,10	925						
0,30	1,0	11,0	10	38	8	3	2	77,37	930						
0,35	1,0	11,0	10	38	8	3	2	69,21	935						
0,40	1,0	11,0	10	38	8	3	2	51,58	940						
0,50	1,5	15,5	18	54	12	6	2	44,53	951						
0,50	1,5	16,0	44	80	12	6	2					72,42	006		
0,50	1,5	11,5	10	38	8	3	2	42,54	950						
0,50	1,5	11,5	47	75	8	3	2					48,28	005		
0,60	1,5	11,5	10	38	8	3	2	45,74	960						
0,70	2,0	11,5	10	38	8	3	2	42,54	970						
0,80	2,0	11,5	10	38	8	3	2	42,54	980						
0,90	2,5	12,0	10	38	8	3	2	42,54	990						
1,00	2,0	11,0	22	50	8	3	2	45,30	011						
1,00	2,0	16,0	18	54	12	6	2	49,82	106	49,82	010				
1,00	3,0	12,0	47	75	8	3	2					64,37	010		
1,00	3,0	17,5	44	80	12	6	2					77,15	011	77,15	610
1,10	3,0	13,0	22	50	8	3	2	42,54	911						
1,20	3,0	13,0	22	50	8	3	2	42,54	012						
1,40	3,0	13,0	22	50	8	3	2	42,54	014						
1,50	3,0	11,0	22	50	8	3	2	45,30	016						
1,50	3,0	16,5	18	54	12	6	2	45,30	156	49,82	015				
1,50	4,0	13,0	47	75	8	3	2					63,92	015		
1,50	4,0	16,5	44	80	12	6	2					77,15	016	77,15	615
1,60	4,0	10,5	22	50	8	3	2	42,54	916						
1,80	4,0	10,0	22	50	8	3	2	42,54	018						
2,00	4,0	16,5	18	54	12	6	2	49,82	206	49,82	020				
2,00	4,0	10,0	22	50	8	3	2	45,30	021						
2,00	6,0	12,5	47	75	8	3	2					60,07	020		
2,00	6,0	18,0	44	80	12	6	2					75,39	021	75,39	620
2,50	5,0	16,0	18	54	12	6	2	52,35	026	52,35	027				
2,50	5,0	10,5	22	50	8	3	2	42,54	025						
2,50	8,0	14,0	47	75	8	3	2					58,97	025		
2,50	8,0	18,5	44	80	12	6	2					76,16	026	76,16	625
3,00	6,0	15,5	18	54	12	6	2	49,82	306	49,82	030				
3,00	6,0		22	50		3	2	45,30	031						
3,00	10,0		47	75		3	2					58,08	030		
3,00	10,0	19,5	44	80	12	6	2					74,17	031	74,17	630

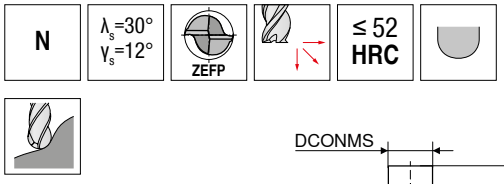
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

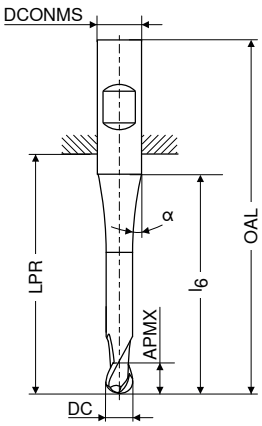
→ v_c/f_z Page 350–356

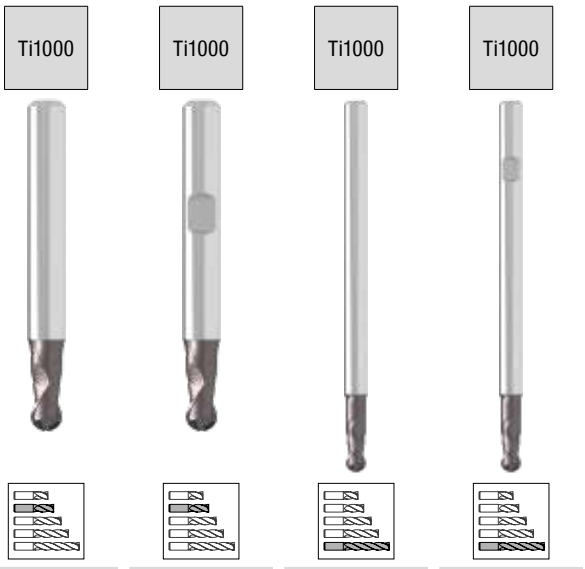
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







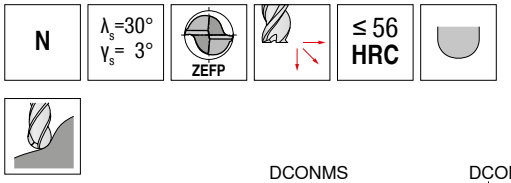
								Factory standard		Factory standard		Factory standard		Factory standard	
								HA		HB		HA		HB	
								V1		V1		V1		V1	
DC f8	APMX	l6	LPR	OAL	α° ±0,5°	DCONMS h6	ZEFP	Article no. 52 254 ...		Article no. 52 254 ...		Article no. 52 255 ...		Article no. 52 255 ...	
mm	mm	mm	mm	mm		mm		EUR		EUR		EUR		EUR	
4,00	7,0	13,0	18	54	12	6	2	49,82	406	49,82	040				
4,00	7,0		26	54		4	2	47,83	041						
4,00	13,0		47	75		4	2					55,66	040		
4,00	13,0	20,5	44	80	12	6	2					74,17	041	74,17	640
5,00	8,0	13,0	18	54	12	6	2	49,82	506	49,82	050				
5,00	8,0		26	54		5	2	49,82	051						
5,00	14,0		47	75		5	2					63,26	050		
5,00	14,0	20,5	64	100	12	6	2					74,17	051	74,17	650
6,00	10,0		18	54		6	2	49,82	061	49,82	060				
6,00	16,0		64	100		6	2					74,51	061	74,51	060
8,00	12,0		23	59		8	2	60,62	081	60,62	080				
8,00	22,0		64	100		8	2					89,60	081	89,60	080
10,00	13,0		27	67		10	2	79,80	101	79,80	100				
10,00	25,0		60	100		10	2					117,90	101	117,90	100
12,00	16,0		28	73		12	2	113,60	121	113,60	120				
12,00	26,0		55	100		12	2					155,50	121	155,50	120
14,00	16,0		30	75		14	2	144,40	141	144,40	140				
14,00	26,0		55	100		14	2					208,30	141	208,30	140
16,00	20,0		35	83		16	2	165,40	161	165,40	160				
16,00	30,0		102	150		16	2					342,80	161	342,80	160
18,00	22,0		43	93		18	2	224,90	181	224,90	180				
20,00	25,0		43	93		20	2	271,10	201	271,10	200				
20,00	40,0		100	150		20	2					418,80	201	418,80	200

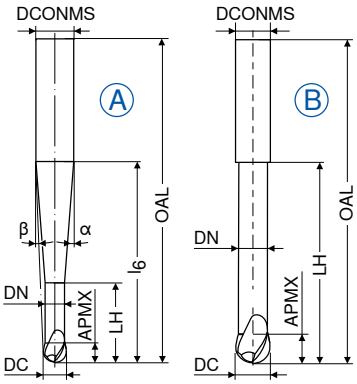
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

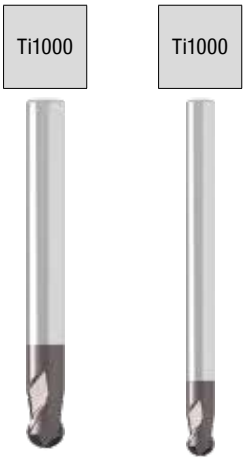
→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ± 0.005 mm
▲ For Ø DC ≤ 5.0 mm, angle tolerance α and β: ±0.5°









Factory standard | Factory standard

HA | HA

V1 | V1

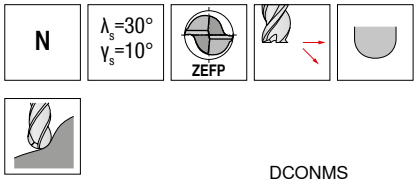
DC ±0,01	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	Article no. 52 714 ...		Article no. 52 717 ...	
mm	mm	mm	mm	mm	mm			mm			EUR		EUR	
0,5	1,0	0,45	2,0	20	57	10,0	8,5	6	2	A	121,30	**005**		
1,0	2,0	0,95	4,0	20	57	10,0	8,0	6	2	A	123,50	**010**		
1,0	2,0	0,95	4,0	40	80	4,5	4,0	6	2	A			112,40	**010**
1,5	2,5	1,40	7,5	20	57	12,5	7,0	6	2	A	110,20	**015**		
1,5	2,5	1,40	7,5	40	80	4,5	3,5	6	2	A			101,90	**015**
2,0	3,0	1,80	8,0	20	57	12,0	6,5	6	2	A	88,17	**020**		
2,0	3,0	1,80	8,0	40	80	4,0	3,0	6	2	A			90,93	**020**
3,0	3,5	2,80	10,0	20	57	11,5	5,0	6	2	A	84,75	**030**		
3,0	3,5	2,80	12,0	40	80	3,5	2,5	6	2	A			87,84	**030**
4,0	4,0	3,80	12,0	20	57	11,0	3,5	6	2	A	83,21	**040**		
4,0	4,0	3,80	20,0	40	80	4,0	1,5	6	2	A			81,89	**040**
5,0	5,0	4,70	14,0	20	57	10,0	2,0	6	2	A	81,44	**050**		
5,0	5,0	4,70	25,0	40	80	3,0	1,0	6	2	A			83,21	**050**
6,0	6,0	5,60	20,0		57			6	2	B	76,49	**060**		
6,0	6,0	5,60	40,0		80			6	2	B			87,52	**060**
6,0	6,0	5,60	25,0	60	100	2,0	1,0	8	2	A			119,10	**061**
8,0	7,0	7,60	25,0		63			8	2	B	106,80	**080**		
8,0	7,0	7,60	60,0		100			8	2	B			117,90	**080**
8,0	7,0	7,60	30,0	75	120	2,0	1,0	10	2	A			158,70	**081**
10,0	8,0	9,60	30,0		72			10	2	B	145,50	**100**		
10,0	8,0	9,60	50,0		100			10	2	B			121,30	**102**
10,0	8,0	9,60	75,0		120			10	2	B			142,30	**100**
10,0	8,0	9,60	40,0	110	160	1,0	1,0	12	2	A			216,00	**101**
12,0	10,0	11,50	35,0		83			12	2	B	191,80	**120**		
12,0	10,0	11,50	35,0	40	92	35,0	3,5	16	2	A	267,80	**121**		
12,0	10,0	11,50	70,0		120			12	2	B			195,10	**122**
12,0	10,0	11,50	70,0		160			12	2	B			233,60	**120**
12,0	10,0	11,50	50,0	150	200	1,5	1,0	16	2	A			424,30	**121**
16,0	12,0	15,50	40,0		92			16	2	B	262,30	**160**		
16,0	12,0	15,50	80,0		200			16	2	B			414,30	**160**

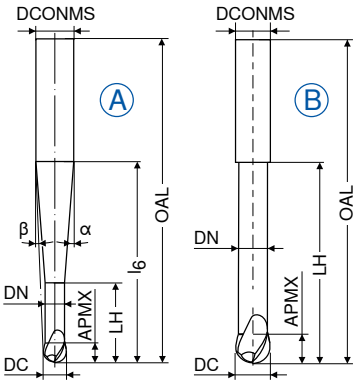
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm
▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5 °









Factory standard

HA 

DC e8 mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS h6 mm	ZEFP	Fig.	V1 Article no. 52 320 ... EUR	
2	3	1,8	8	40	100	3,6	3,0	6	2	A	72,74	**020**
3	4	2,8	12	40	100	3,1	2,1	6	2	A	72,74	**030**
4	5	3,8	16	40	100	2,4	1,2	6	2	A	71,65	**040**
5	6	4,7	20	40	100	1,4	0,7	6	2	A	70,54	**050**
6	6	5,7	25	50	100	2,3	1,2	8	2	A	97,22	**061**
6	6	5,7	25		100			6	2	B	60,51	**060**
8	7	7,7	32		100			8	2	B	90,15	**080**
8	7	7,7	32	60	120	2,0	1,0	10	2	A	134,50	**081**
10	9	9,6	40		120			10	2	B	129,00	**100**
10	9	9,6	40	81	160	1,4	0,7	12	2	A	218,30	**101**
12	11	11,6	50		160			12	2	B	199,50	**120**
12	11	11,6	50	101	200	2,3	1,2	16	2	A	378,00	**121**
16	14	15,6	60		200			16	2	B	340,60	**160**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

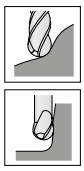
→ v_c/f_z Page 350–356

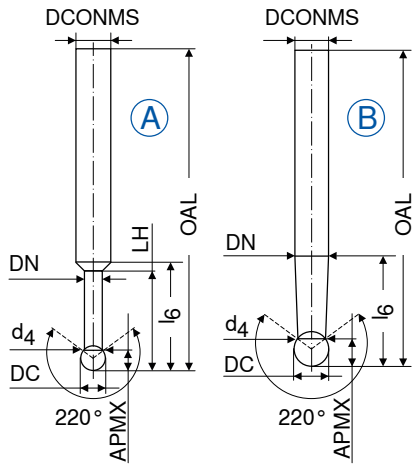
14

Ball nosed cutter 220°

▲ Radius accuracy: ±0.005 mm







Ti1000





Factory standard

HA 

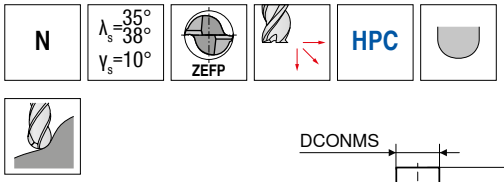
DC f8 mm	APMX mm	DN mm	d_4 mm	LH mm	l_6 mm	OAL mm	DCONMS h6 mm	ZEFP	Fig.	V1 Article no. 52 323 ... EUR	
1,0	0,7	0,85	0,8	5	17	58	6	2	A	108,90	**010**
1,5	1,2	1,25	1,2	8	20	58	6	2	A	108,90	**015**
2,0	1,5	1,70	1,4	10	21	58	6	2	A	108,90	**020**
3,0	2,3	2,70	2,4	15	22	65	6	2	A	109,80	**030**
4,0	3,0	3,70	3,4	20	25	70	6	2	A	112,40	**040**
5,0	3,5	4,70	4,3	25	28	80	6	2	A	117,90	**050**
6,0	4,0	5,90	4,3		30	100	6	2	B	134,50	**060**
8,0	5,4	7,90	6,2		40	100	8	2	B	179,60	**080**
10,0	6,7	9,90	7,6		50	100	10	2	B	235,90	**100**
12,0	9,0	11,90	9,2		110	160	12	2	B	308,60	**121**
12,0	9,0	11,90	9,2		70	120	12	2	B	291,00	**120**

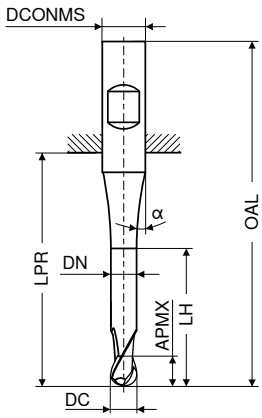
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm













≈DIN 6527 | ≈DIN 6527

HB | HB

V3 | V3

DC h10 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	α°	ZEFP	Article no. 54 055 ... EUR		Article no. 54 056 ... EUR	
3	5			14	50	6	15	2	20,61	030		
3	8	2,8	12	21	57	6	15	2			20,61	030
4	8			18	54	6	15	2	20,61	040		
4	11	3,8	15	21	57	6	15	2			20,61	040
5	9			18	54	6	15	2	20,61	050		
5	13	4,8	17	21	57	6	15	2			20,61	050
6	10			18	54	6	30	2	21,49	060		
6	13	5,8	21	21	57	6	30	2			24,14	060
8	12			22	58	8	30	2	28,22	080		
8	19	7,7	27	27	63	8	30	2			29,86	080
10	14			26	66	10	30	2	35,27	100		
10	22	9,7	32	32	72	10	30	2			37,80	100
12	16			28	73	12	30	2	51,47	120		
12	26	11,6	38	38	83	12	30	2			59,74	120
16	22			34	82	16	30	2	84,09	160		
16	32	15,5	44	44	92	16	30	2			88,28	160
20	26			42	92	20	30	2	120,10	200		
20	38	19,5	54	54	104	20	30	2			127,80	200

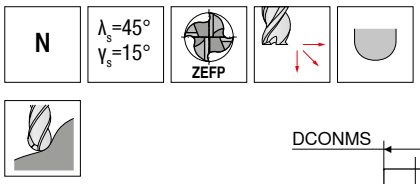
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

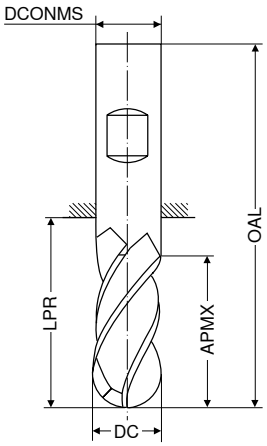
→ v_c/f_z Page 350–356

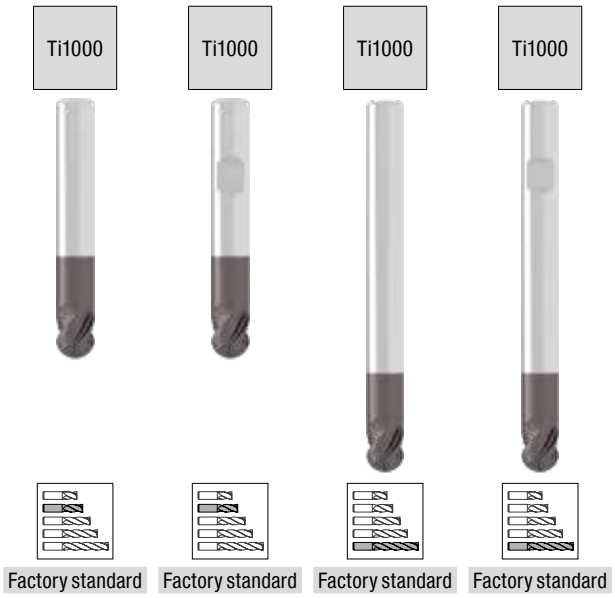
14

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







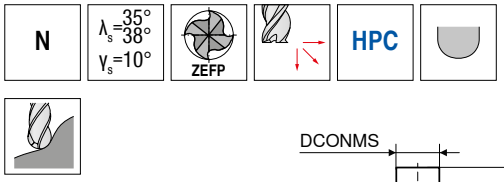
DC f8	APMX	LPR	OAL	DCONMS h6	ZEFP	Factory standard HA V1 Article no. 52 400 ...		Factory standard HB V1 Article no. 52 401 ...		Factory standard HA V1 Article no. 52 402 ...		Factory standard HB V1 Article no. 52 403 ...	
mm	mm	mm	mm	mm		EUR		EUR		EUR		EUR	
3	5	22	50	3	4	49,38	030						
3	5	47	75	3	4					59,40	030		
4	8	26	54	4	4	50,14	040						
4	8	47	75	4	4					67,67	040		
5	9	26	54	5	4	51,58	050						
5	9	47	75	5	4					68,89	050		
6	10	18	54	6	4	54,34	060	54,34	060				
6	10	64	100	6	4					70,54	060	70,54	060
8	12	23	59	8	4	67,24	080	67,24	080				
8	12	64	100	8	4					89,60	080	89,60	080
10	14	27	67	10	4	91,37	100	91,37	100				
10	14	60	100	10	4					113,60	100	113,60	100
12	16	29	74	12	4	115,80	120	115,80	120				
12	16	55	100	12	4					147,80	120	147,80	120
14	18	30	75	14	4	144,40	140	144,40	140				
14	18	55	100	14	4					180,80	140	180,80	140
16	22	35	83	16	4	189,60	160	189,60	160				
16	22	102	150	16	4					271,10	160	271,10	160
20	26	43	93	20	4	291,00	200	291,00	200				
20	26	100	150	20	4					399,10	200	399,10	200

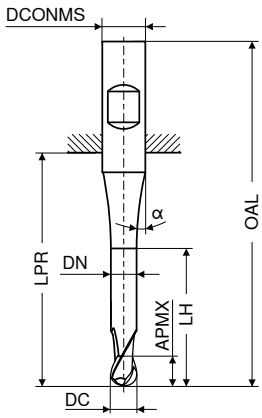
Steel	○	○	○	○
Stainless steel	●	●	●	●
Cast iron	○	○	○	○
Non ferrous metals	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened materials	○	○	○	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm













≈DIN 6527 HB

≈DIN 6527 HB

DC h10 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	α°	ZEFP	V3 Article no. 54 057 ... EUR		V3 Article no. 54 058 ... EUR	
3	5			14	50	6	15	4	20,61	**030**		
3	8	2,8	12	21	57	6	15	4			20,61	**030**
4	8			18	54	6	15	4	20,61	**040**		
4	11	3,8	15	21	57	6	15	4			20,61	**040**
5	9			18	54	6	15	4	20,61	**050**		
5	13	4,8	17	21	57	6	15	4			20,61	**050**
6	10			18	54	6	30	4	21,49	**060**		
6	13	5,8	21	21	57	6	30	4			24,14	**060**
8	12			22	58	8	30	4	28,22	**080**		
8	19	7,7	27	27	63	8	30	4			29,86	**080**
10	14			26	66	10	30	4	35,27	**100**		
10	22	9,7	32	32	72	10	30	4			37,80	**100**
12	16			28	73	12	30	4	51,47	**120**		
12	26	11,6	38	38	83	12	30	4			59,74	**120**
16	22			34	82	16	30	4	84,09	**160**		
16	32	15,5	44	44	92	16	30	4			88,28	**160**
20	26			42	92	20	30	4	120,10	**200**		
20	38	19,5	54	54	104	20	30	4			127,80	**200**

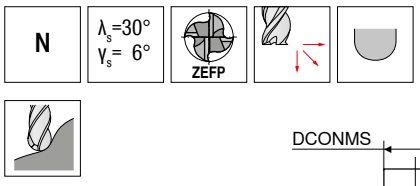
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

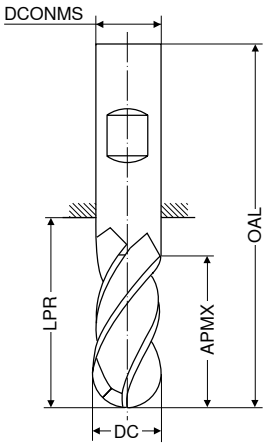
→ v_c/f_z Page 350–356

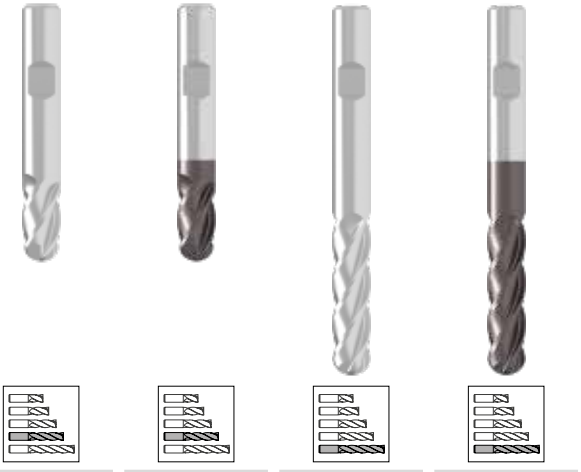
14

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm







DC f8	APMX	LPR	OAL	DCONMS h5	ZEFP	DIN 6527 HB V0 Article no. 50 642 ... EUR		DIN 6527 HB V0 Article no. 50 643 ... EUR		Factory standard HB V0 Article no. 50 642 ... EUR		DIN 6527 HB V0 Article no. 50 643 ... EUR	
mm	mm	mm	mm	mm									
3	8	21	57	6	4	42,21	030	51,58	030				
4	11	21	57	6	4	42,21	040	51,58	040				
6	13	21	57	6	4	42,21	060	51,58	060				
6	40	64	100	6	4					53,12	061	62,61	061
8	19	27	63	8	4	48,61	080	57,53	080				
8	40	64	100	8	4					59,74	081	69,33	081
10	22	32	72	10	4	82,77	100	91,81	100				
10	40	60	100	10	4					106,70	101	115,80	101
12	26	38	83	12	4	111,30	120	120,10	120				
12	45	55	100	12	4					144,40	121	153,20	121
12	75	105	150	12	4					224,90	122	232,50	122
14	26	38	83	14	4	141,00	140	149,90	140				
14	45	55	100	14	4					199,50	141	205,00	141
16	32	44	92	16	4	198,30	160	203,80	160				
16	75	102	150	16	4					275,60	161	283,30	161
20	38	54	104	20	4	275,60	200	283,30	200				
20	75	100	150	20	4					435,30	201	445,30	201

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials		○		○

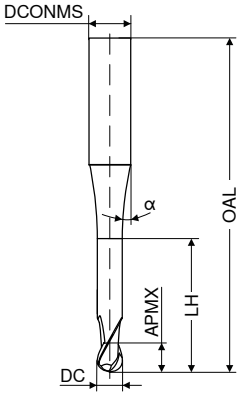
→ v_c/f_z Page 350–356

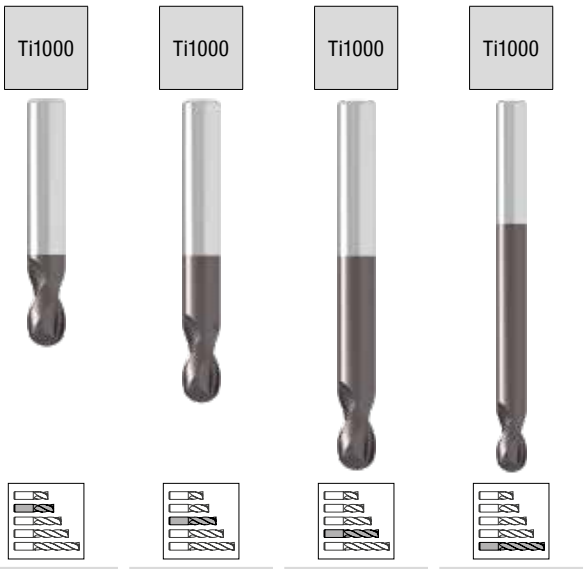
Ball nosed cutter

▲ Radius accuracy: ±0.01 mm

H | λ_s=30° γ_s= 4° | ZEFP | ≤ 68 HRC







Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V0 | V0 | V0 | V0

DC mm	Tol.	APMX mm	LH mm	OAL mm	α°	DCONMS $_{h5}$ mm	ZEFP	Article no. 50 906 ...	EUR		Article no. 50 906 ...	EUR		Article no. 50 906 ...	EUR		Article no. 50 906 ...	EUR	
0,20	0/-0,015	0,3	0,6	40	15	4	2		58,64	**002**									
0,25	0/-0,015	0,3	0,6	40	15	4	2		58,64	**925**									
0,30	0/-0,015	0,3	0,6	40	15	4	2		58,64	**003**									
0,35	0/-0,015	0,4	0,7	40	15	4	2		58,64	**935**									
0,40	0/-0,015	0,4	0,7	40	15	4	2		58,64	**004**									
0,50	0/-0,015	0,5	0,8	40	15	4	2		58,64	**005**									
0,50	0/-0,015	0,5	0,8	54	15	6	2		67,34	**951**									
0,60	0/-0,015	0,6	0,9	40	15	4	2		58,64	**006**									
0,70	0/-0,015	0,8	1,1	40	15	4	2		58,64	**007**									
0,80	0/-0,015	0,8	1,1	40	15	4	2		58,64	**008**									
0,90	0/-0,015	0,9	1,2	40	15	4	2		58,64	**009**									
1,00	0/-0,015	1,0	1,3	54		4	2							58,64	**010**				
1,00	0/-0,015	1,0	1,3	54	15	6	2		67,34	**011**									
1,00	0/-0,015	1,0	1,3	64		6	2							70,54	**012**				
1,00	0/-0,015	1,0	1,3	80		6	2										73,62	**013**	
1,00	0/-0,015	1,0	1,3	100		6	2										76,60	**014**	
1,20	0/-0,015	1,2	1,5	54		4	2							58,64	**112**				
1,40	0/-0,015	1,4	1,8	54		4	2							58,64	**114**				
1,50	0/-0,015	1,5	1,9	54		4	2							58,64	**115**				
1,50	0/-0,015	1,5	1,9	54	15	6	2		67,34	**215**									
1,50	0/-0,015	1,5	1,9	80		6	2										73,62	**315**	
1,60	0/-0,015	1,8	2,3	54		4	2							58,64	**116**				
1,80	0/-0,015	1,8	2,3	54		4	2							58,64	**118**				
2,00	0/-0,015	2,0	2,5	54		4	2							58,64	**206**				
2,00	0/-0,015	4,0	5,0	54		6	2							67,34	**202**				
2,00	0/-0,015	4,0	5,0	64		6	2							70,54	**207**				
2,00	0/-0,015	4,0	5,0	82		6	2										73,62	**204**	
2,00	0/-0,015	4,0	5,0	100		6	2										76,60	**205**	
2,50	0/-0,02	5,0	6,6	54		4	2							58,64	**251**				
2,50	0/-0,02	5,0	6,3	54	15	6	2		67,34	**252**									
2,50	0/-0,02	5,0	6,3	64		6	2							70,87	**253**				
2,50	0/-0,02	5,0	6,3	82		6	2										73,62	**254**	
2,50	0/-0,02	5,0	6,3	100		6	2										76,60	**255**	
3,00	0/-0,02	5,0	6,3	54		4	2							58,64	**030**				
3,00	0/-0,02	5,0	6,3	82		4	2										58,64	**032**	
3,00	0/-0,02	5,0	6,3	100		4	2										58,64	**033**	
3,00	0/-0,02	5,0	6,3	54	15	6	2		67,34	**035**									
3,00	0/-0,02	5,0	6,3	64		6	2							70,54	**036**				
3,00	0/-0,02	5,0	6,3	82		6	2										73,62	**037**	
3,00	0/-0,02	8,0	10,0	100		6	2										76,60	**038**	
4,00	0/-0,02	8,0		54	15	4	2							58,64	**040**				
4,00	0/-0,02	8,0		82	15	4	2										69,44	**042**	
4,00	0/-0,02	8,0		100	15	4	2										74,29	**043**	
4,00	0/-0,02	8,0	10,0	54	15	6	2		58,64	**045**									

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–356

14

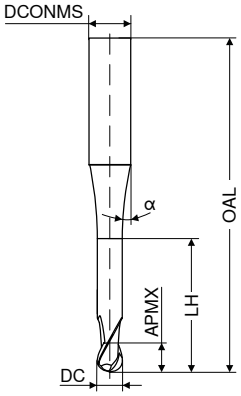
Continued on next page

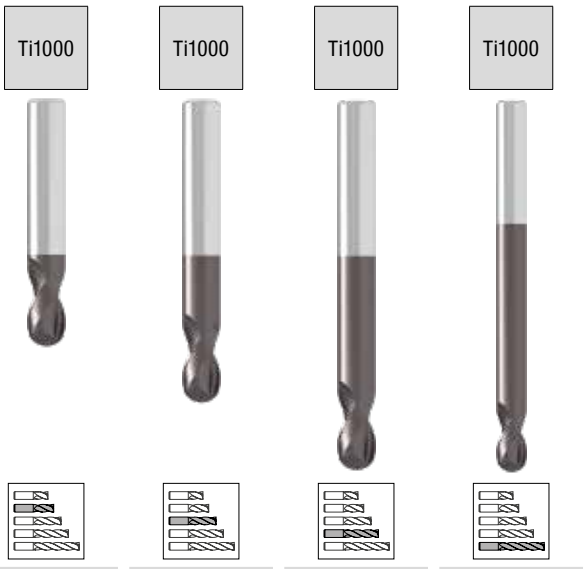
Ball nosed cutter

▲ Radius accuracy: ±0.01 mm

H | λ_s=30° γ_s= 4° | ZEFP | ≤ 68 HRC







Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V0 | V0 | V0 | V0

DC mm	Tol.	APMX mm	LH mm	OAL mm	α°	DCONMS $_{h5}$ mm	ZEFP	Article no. 50 906 ... EUR		Article no. 50 906 ... EUR		Article no. 50 906 ... EUR		Article no. 50 906 ... EUR	
4,00	0/-0,02	8,0	10,0	64		6	2					70,54	**046**		
4,00	0/-0,02	8,0	10,0	82		6	2							73,62	**047**
4,00	0/-0,02	8,0	10,0	100		6	2							76,60	**048**
5,00	0/-0,02	9,0		54	15	5	2					58,64	**050**		
5,00	0/-0,02	9,0		64	15	5	2					70,54	**051**		
5,00	0/-0,02	9,0		82	15	5	2							73,62	**052**
5,00	0/-0,02	9,0		100	15	5	2							76,60	**053**
5,00	0/-0,02	9,0	11,3	54	15	6	2	58,64	**055**						
5,00	0/-0,02	9,0	11,3	64		6	2					70,54	**056**		
5,00	0/-0,02	9,0	11,3	82		6	2							73,62	**057**
5,00	0/-0,02	9,0	11,3	100		6	2							76,60	**058**
6,00	0/-0,02	10,0		54	15	6	2	58,64	**060**						
6,00	0/-0,02	10,0		64	15	6	2					70,54	**061**		
6,00	0/-0,02	10,0		82	15	6	2							73,62	**062**
6,00	0/-0,02	10,0		100	15	6	2							76,60	**063**
6,00	0/-0,02	10,0		120	15	6	2							80,02	**064**
8,00	0/-0,025	12,0		64	15	8	2					64,15	**081**		
8,00	0/-0,025	12,0		82	15	8	2			81,99	**082**				
8,00	0/-0,025	12,0		100	15	8	2							99,75	**083**
8,00	0/-0,025	12,0		120	15	8	2							117,90	**084**
10,00	0/-0,025	14,0		67	15	10	2	80,24	**101**						
10,00	0/-0,025	14,0		82	15	10	2			108,10	**102**				
10,00	0/-0,025	14,0		100	15	10	2							134,50	**103**
10,00	0/-0,025	14,0		127	15	10	2							164,20	**104**
12,00	0/-0,025	16,0		75	15	12	2	116,80	**121**						
12,00	0/-0,025	16,0		100	15	12	2			175,20	**122**				
12,00	0/-0,025	16,0		150	15	12	2							231,50	**123**
14,00	0/-0,025	18,0		80	15	14	2	144,40	**141**						
14,00	0/-0,025	18,0		100	15	14	2			213,80	**142**				
14,00	0/-0,025	18,0		150	15	14	2							278,80	**143**
16,00	0/-0,025	22,0		85	15	16	2	170,90	**161**						
16,00	0/-0,025	22,0		150	15	16	2							375,90	**163**
20,00	0/-0,025	26,0		90	15	20	2	283,30	**201**						
20,00	0/-0,025	26,0		150	15	20	2							497,10	**203**

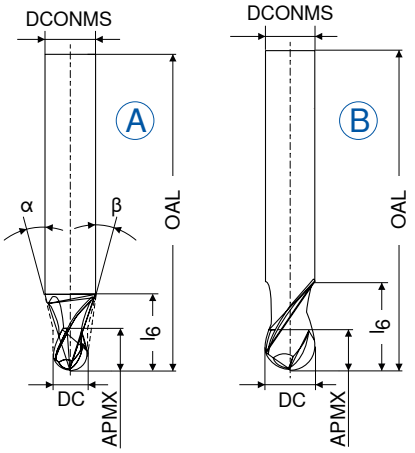
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s=–3° | ZEFP | 45–66 HRC | Ti1000





Factory standard

HA

DC ±0,01 mm	APMX mm	l_6 mm	OAL mm	α°	β°	DCONMS h5 mm	ZEFP	Fig.	V1 Article no. 52 741 ... EUR	
2	1,5	3,3	38	15	9	3	2	A	91,15	**020**
3	2,0	7,5	57	15	12	6	2	A	87,07	**030**
4	2,5	6,0	57	15	9	6	2	A	84,43	**040**
5	3,0	5,0	57	15	6	6	2	A	83,76	**050**
6	3,5		57	15		6	2	B	80,57	**060**
8	4,5		63	15		8	2	B	111,30	**080**
10	5,5		72	15		10	2	B	154,30	**100**
12	6,5		83	15		12	2	B	197,30	**120**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

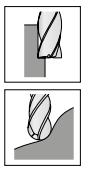
→ v_c/f_z Page 350–356

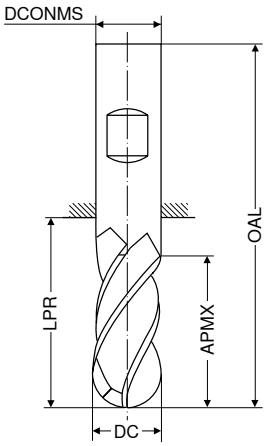
14

Ball nose cutter for rough milling

▲ Radius accuracy: ±0.01 mm













DIN 6527

HB 

V0

DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 50 641 ... EUR	
6	13	21	57	6	4	107,40	**060**
8	19	27	63	8	4	122,30	**080**
10	22	32	72	10	4	126,80	**100**
12	26	38	83	12	4	164,20	**120**
14	26	38	83	14	4	233,60	**140**
16	32	44	92	16	4	239,10	**160**
18	32	44	92	18	4	345,10	**180**
20	38	54	104	20	4	352,70	**200**

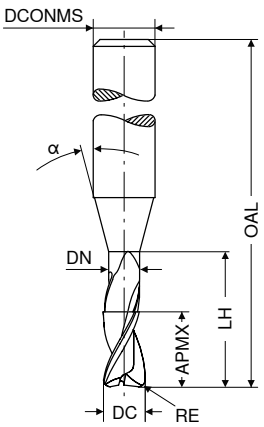
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 350–356

Torus cutter











Factory standard

Factory standard

HA

HA

V0

V0

DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Article no. 50 901 ...		Article no. 50 901 ...	
mm	mm	mm	mm	mm	mm		mm		EUR		EUR	
0,2	0,02	0,2	0,18	0,6	55	15	3	2	75,39	021		
0,2	0,02	0,2	0,18	1,0	55	15	3	2	76,16	022		
0,2	0,02	0,2	0,18	1,6	55	15	3	2	76,81	023		
0,2	0,02	0,2	0,18	2,0	55	15	3	2	78,04	024		
0,3	0,03	0,3	0,28	0,9	55	15	3	2	75,39	031		
0,3	0,03	0,3	0,28	1,5	55	15	3	2	76,16	032		
0,3	0,03	0,3	0,28	2,4	55	15	3	2	76,81	033		
0,3	0,03	0,3	0,28	3,0	55	15	3	2	78,04	034		
0,4	0,04	0,4	0,37	1,2	55	15	3	2	75,39	041		
0,4	0,04	0,4	0,37	2,0	55	15	3	2	76,16	042		
0,4	0,04	0,4	0,37	3,2	55	15	3	2	76,81	043		
0,4	0,04	0,4	0,37	4,0	55	15	3	2	78,04	044		
0,5	0,05	0,5	0,45	1,5	55	15	3	2	73,74	051		
0,5	0,05	0,5	0,45	2,5	55	15	3	2	74,39	052		
0,5	0,05	0,5	0,45	4,0	55	15	3	2	75,39	053		
0,5	0,05	0,5	0,45	5,0	55	15	3	2	76,16	054		
0,6	0,06	0,6	0,58	2,0	55	15	3	2	63,48	061		
0,6	0,06	0,6	0,58	3,0	55	15	3	2	63,48	062		
0,6	0,06	0,6	0,58	4,2	55	15	3	2	61,71	063		
0,6	0,06	0,6	0,58	5,0	65	15	3	2			73,07	064
0,6	0,06	0,6	0,58	6,0	65	15	3	2			71,42	065
0,8	0,08	0,8	0,77	2,5	55	15	3	2	61,71	081		
0,8	0,08	0,8	0,77	4,0	55	15	3	2	61,71	082		
0,8	0,08	0,8	0,77	6,5	65	15	3	2			68,66	083
0,8	0,08	0,8	0,77	8,0	65	15	3	2			71,42	084
1,0	0,10	1,0	0,95	3,0	55	15	3	2	61,71	101		
1,0	0,10	1,0	0,95	5,0	55	15	3	2	61,71	102		
1,0	0,10	1,0	0,95	8,0	65	15	3	2			65,24	103
1,0	0,10	1,0	0,95	10,0	65	15	3	2			71,42	104
1,0	0,10	1,0	0,95	12,0	65	15	3	2			73,07	105
1,2	0,12	1,2	1,15	3,0	55	15	3	2	61,71	121		
1,2	0,12	1,2	1,15	6,0	55	15	3	2	61,71	122		
1,2	0,12	1,2	1,15	10,0	65	15	3	2			68,66	123
1,2	0,12	1,2	1,15	12,0	65	15	3	2			71,42	124
1,3	0,13	1,3	1,25	4,0	55	15	3	2	61,71	131		
1,3	0,13	1,3	1,25	7,0	55	15	3	2	63,48	132		
1,3	0,13	1,3	1,25	11,0	65	15	3	2			68,66	133
1,3	0,13	1,3	1,25	13,0	65	15	3	2			73,07	134
1,5	0,15	1,5	1,44	5,0	55	15	3	2	63,48	151		
1,5	0,15	1,5	1,44	7,5	55	15	3	2	61,71	152		
1,5	0,15	1,5	1,44	12,0	65	15	3	2			73,07	153
1,5	0,15	1,5	1,44	15,0	65	15	3	2			71,42	154
1,6	0,16	1,6	1,52	5,0	55	15	3	2	63,48	161		
1,6	0,16	1,6	1,52	8,0	55	15	3	2	63,48	162		
1,6	0,16	1,6	1,52	13,0	65	15	3	2			68,66	163

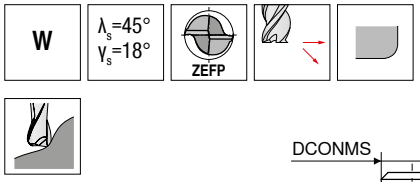
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

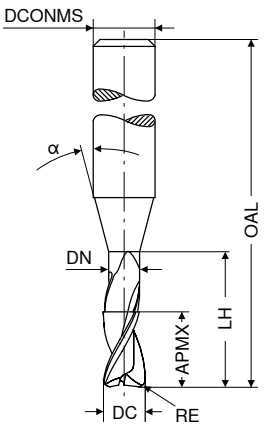
→ v_c/f_z Page 350–356

14

Continued on next page

Torus cutter









Factory standard

Factory standard



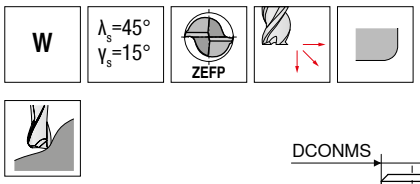


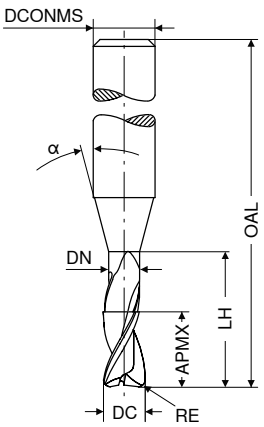
DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 901 ...		V0 Article no. 50 901 ...	
mm	mm	mm	mm	mm	mm		mm		EUR		EUR	
1,6	0,16	1,6	1,52	16,0	65	15	3	2			73,07	164
1,8	0,18	1,8	1,72	5,5	55	15	3	2	61,71	181		
1,8	0,18	1,8	1,72	9,0	55	15	3	2	63,48	182		
1,8	0,18	1,8	1,72	14,5	65	15	3	2			68,66	183
1,8	0,18	1,8	1,72	18,0	65	15	3	2			73,07	184
2,0	0,20	2,0	1,92	6,0	55	15	3	2	61,71	201		
2,0	0,20	2,0	1,92	10,0	55	15	3	2	63,48	202		
2,0	0,20	2,0	1,92	14,0	55	15	3	2	61,71	203		
2,0	0,20	2,0	1,92	16,0	65	15	3	2			73,07	204
2,0	0,20	2,0	1,92	20,0	65	15	3	2			71,42	205
2,3	0,23	2,3	2,22	7,0	55	15	3	2	61,71	231		
2,3	0,23	2,3	2,22	11,5	55	15	3	2	63,48	232		
2,3	0,23	2,3	2,22	14,0	55	15	3	2	65,24	233		
2,3	0,23	2,3	2,22	18,5	65	15	3	2			73,07	234
2,3	0,23	2,3	2,22	20,0	65	15	3	2			73,07	235
2,3	0,23	2,3	2,22	23,0	65	15	3	2			73,07	236
3,0	0,30	3,0	2,90	9,0	65	15	6	2	65,24	301		
3,0	0,30	3,0	2,90	15,0	65	15	6	2	73,07	302		
3,0	0,30	3,0	2,90	24,0	100	15	6	2			79,25	303
3,0	0,30	3,0	2,90	30,0	100	15	6	2			82,67	304
4,0	0,40	4,0	3,90	12,0	65	15	6	2	73,07	401		
4,0	0,40	4,0	3,90	20,0	65	15	6	2	73,07	402		
4,0	0,40	4,0	3,90	32,0	100	15	6	2			82,67	403
4,0	0,40	4,0	3,90	40,0	100	15	6	2			85,09	404
5,0	0,50	5,0	4,90	15,0	65	15	6	2	73,07	501		
5,0	0,50	5,0	4,90	25,0	65	15	6	2	73,07	502		
5,0	0,50	5,0	4,90	40,0	100	15	6	2			85,09	503
5,0	0,50	5,0	4,90	50,0	100	15	6	2			89,39	504
6,0	0,60	6,0	5,90	18,0	65	15	6	2	73,07	601		
6,0	0,60	6,0	5,90	30,0	100	15	6	2			82,67	602
6,0	0,60	6,0	5,90	48,0	100	15	6	2			89,39	603
6,0	0,60	6,0	5,90	60,0	100	15	6	2			92,14	604

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–356

Torus cutter







Factory standard | Factory standard | Factory standard

HA | HA | HA

V0 | V0 | V0

DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Article no. 50 902 ...		Article no. 50 902 ...		Article no. 50 902 ...	
mm	mm	mm	mm	mm	mm		mm		EUR		EUR		EUR	
2	0,3	2	1,8	12	50	45	6	2	66,24	020				
2	0,5	2	1,8	12	50	45	6	2	66,24	023				
2	0,3	2	1,8	22	60	45	6	2			66,24	021		
2	0,5	2	1,8	22	60	45	6	2			66,24	024		
2	0,3	2	1,8	47	85	45	6	2					96,22	022
2	0,5	2	1,8	47	85	45	6	2					96,22	025
3	0,3	2	2,8	12	50	45	6	2	66,24	030				
3	0,5	2	2,8	12	50	45	6	2	66,24	033				
3	0,3	2	2,8	22	60	45	6	2			66,24	031		
3	0,5	2	2,8	22	60	45	6	2			66,24	034		
3	0,3	2	2,8	47	85	45	6	2					96,22	032
3	0,5	2	2,8	47	85	45	6	2					96,22	035
4	0,3	3	3,8	16	54	45	6	2	66,24	040				
4	0,5	3	3,8	16	54	45	6	2	66,24	043				
4	1,0	3	3,8	16	54	45	6	2	66,24	046				
4	0,3	3	3,8	37	75	45	6	2			92,14	041		
4	0,5	3	3,8	37	75	45	6	2			92,14	044		
4	1,0	3	3,8	37	75	45	6	2			92,14	047		
4	0,3	3	3,8	47	85	45	6	2					96,22	042
4	0,5	3	3,8	47	85	45	6	2					96,22	045
4	1,0	3	3,8	47	85	45	6	2					96,22	048
5	0,5	3	4,6	16	54	45	6	2	66,24	050				
5	1,0	3	4,6	16	54	45	6	2	66,24	052				
5	1,5	3	4,6	16	54	45	6	2	66,24	054				
5	0,5	3	4,6	37	75	45	6	2			92,14	051		
5	1,0	2	4,6	37	75	45	6	2			92,14	053		
5	1,5	3	4,6	37	75	45	6	2			92,14	055		
6	0,5	4	5,6	16	54	45	6	2	66,24	060				
6	1,0	4	5,6	16	54	45	6	2	66,24	063				
6	2,0	4	5,6	16	54	45	6	2	66,24	066				
6	0,5	4	5,6	47	85	45	6	2			92,14	061		
6	1,0	4	5,6	47	85	45	6	2			92,14	064		
6	2,0	4	5,6	47	85	45	6	2			92,14	067		
6	0,5	4	5,6	47	85	45	8	2			124,60	069		
6	1,0	4	5,6	47	85	45	8	2			124,60	070		
6	2,0	4	5,6	47	85	45	8	2			124,60	071		
6	0,5	4	5,6	62	100	45	6	2					106,90	062
6	1,0	4	5,6	62	100	45	6	2					106,90	065
6	2,0	4	5,6	62	100	45	6	2					106,90	068
8	0,5	4	7,6	20	58	45	8	2	80,46	080				
8	1,0	4	7,6	20	58	45	8	2	80,46	082				

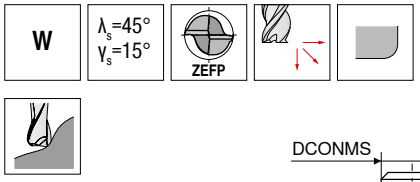
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

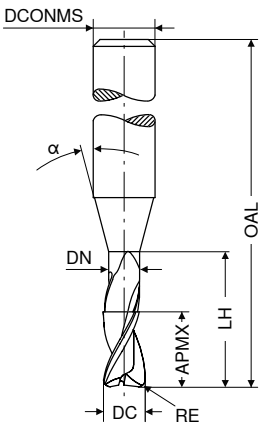
→ v_c/f_z Page 350–356

14

Continued on next page

Torus cutter







DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 50 902 ...		Factory standard HA V0 Article no. 50 902 ...		Factory standard HA V0 Article no. 50 902 ...	
mm	mm	mm	mm	mm	mm		mm		EUR		EUR		EUR	
8	2,0	4	7,6	20	58	45	8	2	80,46	084				
8	0,5	4	7,6	62	100	45	8	2					125,70	081
8	1,0	4	7,6	62	100	45	8	2					125,70	083
8	2,0	4	7,6	62	100	45	8	2					125,70	085
8	2,0	4	7,6	62	100	45	10	2					174,10	086
10	1,0	6	9,6	18	66	45	10	2	100,50	100				
10	2,0	6	9,6	18	66	45	10	2	100,50	103				
10	3,0	6	9,6	18	66	45	10	2	100,50	106				
10	1,0	6	9,6	58	100	45	10	2			173,10	101		
10	2,0	6	9,6	58	100	45	10	2			173,10	104		
10	3,0	6	9,6	58	100	45	10	2			173,10	107		
10	1,0	6	9,6	78	120	45	10	2					202,80	102
10	2,0	6	9,6	78	120	45	10	2					202,80	105
10	3,0	6	9,6	78	120	45	10	2					202,80	108
10	1,0	6	9,6	78	120	45	12	2					264,60	109
10	2,0	6	9,6	78	120	45	12	2					264,60	110
10	3,0	6	9,6	78	120	45	12	2					264,60	111
12	1,0	8	11,5	26	73	45	12	2	147,80	120				
12	2,0	8	11,5	26	73	45	12	2	147,80	123				
12	3,0	8	11,5	26	73	45	12	2	147,80	126				
12	4,0	8	11,5	26	73	45	12	2	147,80	129				
12	1,0	8	11,5	53	100	45	12	2			220,50	121		
12	2,0	8	11,5	53	100	45	12	2			220,50	124		
12	3,0	8	11,5	53	100	45	12	2			220,50	127		
12	4,0	8	11,5	53	100	45	12	2			220,50	130		
12	1,0	8	11,5	73	120	45	12	2					264,60	122
12	2,0	8	11,5	73	120	45	12	2					264,60	125
12	3,0	8	11,5	73	120	45	12	2					264,60	128
12	4,0	8	11,5	73	120	45	12	2					264,60	131
12	1,0	8	11,5	103	150	45	16	2					535,60	132
12	2,0	8	11,5	103	150	45	16	2					535,60	133
12	3,0	8	11,5	103	150	45	16	2					535,60	134
12	4,0	8	11,5	103	150	45	16	2					535,60	135

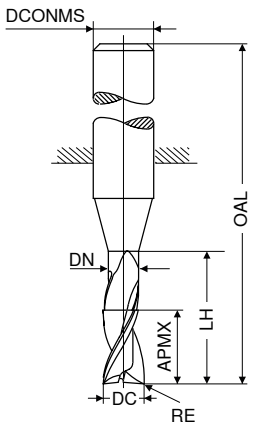
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

→ v_c/f_z Page 350–356

Torus cutter







DIAMOND





Factory standard

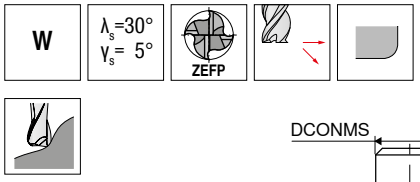
HA 

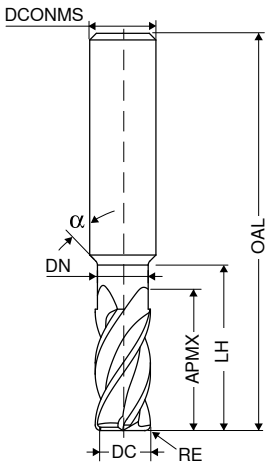
DC h10	RE	APMX	DN	LH	OAL	DCONMS h6	ZEFP	V1 Article no. 52 765 ...	
mm	mm	mm	mm	mm	mm	mm		EUR	
2	0,3	8	1,8	31	60	2	2	147,80	021
3	0,5	12	2,8	41	70	3	2	155,50	032
4	0,5	15	3,8	51	80	4	2	194,00	042
5	0,5	20	4,8	71	100	5	2	222,60	052
6	0,8	20	5,8	63	100	6	2	243,60	063
8	1,0	20	7,8	83	120	8	2	322,90	084
10	1,0	25	9,8	99	140	10	2	410,10	104
12	1,5	25	11,8	104	150	12	2	543,40	125

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 348

Torus cutter













Factory standard | Factory standard





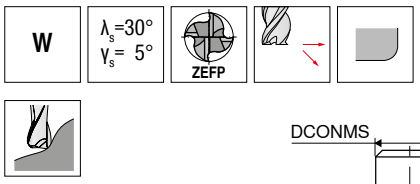
DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 911 ...		V0 Article no. 50 911 ...	
mm	mm	mm	mm	mm	mm		mm		EUR		EUR	
4	0,5	8	3,8	12	54	45	6	4	133,30	040		
4	1,0	8	3,8	12	54	45	6	4	133,30	041		
4	0,5	10	3,8	37	75	45	6	4			159,90	042
4	1,0	10	3,8	37	75	45	6	4			159,90	043
5	0,5	9	4,8	16	54	45	6	4	133,30	050		
5	1,0	9	4,8	16	54	45	6	4	133,30	051		
5	1,5	9	4,8	16	54	45	6	4	133,30	052		
5	0,5	12	4,8	37	75	45	6	4			159,90	053
5	1,0	12	4,8	37	75	45	6	4			159,90	054
5	1,5	12	4,8	37	75	45	6	4			159,90	055
6	0,5	10	5,6	16	54	45	6	4	133,30	060		
6	1,0	10	5,6	16	54	45	6	4	133,30	061		
6	1,5	10	5,6	16	54	45	6	4	133,30	062		
6	2,0	10	5,6	16	54	45	6	4	133,30	063		
6	0,5	12	5,6	62	100	45	6	4			176,30	064
6	1,0	12	5,6	62	100	45	6	4			176,30	065
6	1,5	12	5,6	62	100	45	6	4			176,30	066
6	2,0	12	5,6	62	100	45	6	4			176,30	067
7	0,5	11	6,6	20	58	45	8	4	176,30	070		
7	1,0	11	6,6	20	58	45	8	4	176,30	071		
7	1,5	11	6,6	20	58	45	8	4	176,30	072		
7	2,0	11	6,6	20	58	45	8	4	176,30	073		
7	0,5	14	6,6	62	100	45	8	4			222,60	074
7	1,0	14	6,6	62	100	45	8	4			222,60	075
7	1,5	14	6,6	62	100	45	8	4			222,60	076
7	2,0	14	6,6	62	100	45	8	4			222,60	077
8	0,5	12	7,6	20	58	45	8	4	176,30	080		
8	1,0	12	7,6	20	58	45	8	4	176,30	081		
8	1,5	12	7,6	20	58	45	8	4	176,30	086		
8	2,0	12	7,6	20	58	45	8	4	176,30	083		
8	0,5	14	7,6	62	100	45	8	4			222,60	084
8	1,0	14	7,6	62	100	45	8	4			222,60	085
8	1,5	14	7,6	62	100	45	8	4			222,60	082
8	2,0	14	7,6	62	100	45	8	4			222,60	087
10	0,5	14	9,6	24	66	45	10	4	223,80	100		
10	1,0	14	9,6	24	66	45	10	4	223,80	101		
10	1,5	14	9,6	24	66	45	10	4	223,80	107		
10	2,0	14	9,6	24	66	45	10	4	223,80	103		
10	3,0	14	9,6	24	66	45	10	4	223,80	104		
10	0,5	18	9,6	58	100	45	10	4			292,00	105
10	1,0	18	9,6	58	100	45	10	4			292,00	106

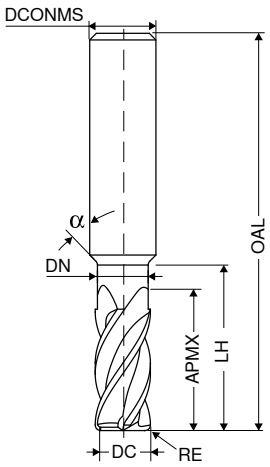
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

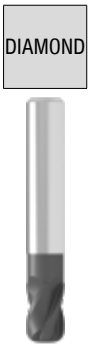
→ v_c/f_z Page 348

Continued on next page

Torus cutter













Factory standard

Factory standard





DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 911 ... EUR		V0 Article no. 50 911 ... EUR	
mm	mm	mm	mm	mm	mm		mm					
10	1,5	18	9,6	58	100	45	10	4			292,00	**102**
10	2,0	18	9,6	58	100	45	10	4			292,00	**108**
10	3,0	18	9,6	58	100	45	10	4			292,00	**109**
12	0,5	16	11,5	26	73	45	12	4	295,40	**120**		
12	1,0	16	11,5	26	73	45	12	4	295,40	**121**		
12	1,5	16	11,5	26	73	45	12	4	295,40	**127**		
12	2,0	16	11,5	26	73	45	12	4	295,40	**123**		
12	4,0	16	11,5	26	73	45	12	4	295,40	**124**		
12	0,5	22	11,5	53	100	45	12	4			371,40	**125**
12	1,0	22	11,5	53	100	45	12	4			371,40	**126**
12	1,5	22	11,5	53	100	45	12	4			371,40	**122**
12	2,0	22	11,5	53	100	45	12	4			371,40	**128**
12	4,0	22	11,5	53	100	45	12	4			371,40	**129**

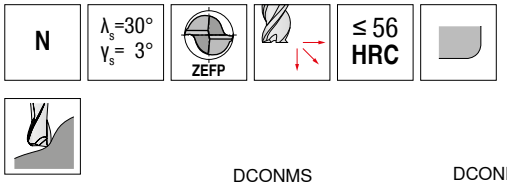
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

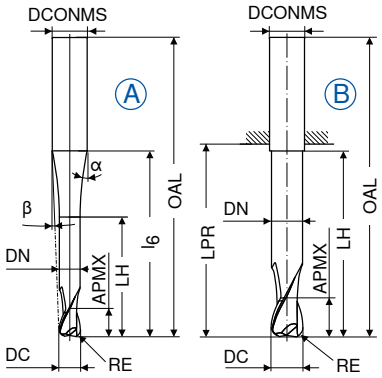
→ v_c/f_z Page 348

14

Torus cutter

▲ Radius accuracy: ±0.005 mm
▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5°







Factory standard | Factory standard

HA | HA

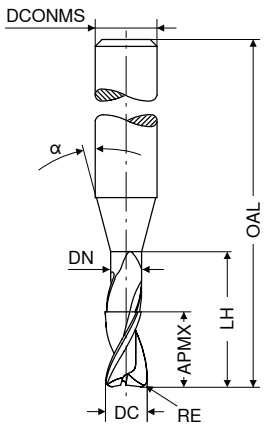
DC ±0,01	RE ±0,005	APMX	DN	LH	l6	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	V1 Article no. 52 730 ...		V1 Article no. 52 734 ...	
mm	mm	mm	mm	mm	mm	mm			mm			EUR		EUR	
0,5	0,10	1,0	0,45	2,0	20	57	10,0	8,5	6	2	A	132,30	005		
1,0	0,25	2,0	0,95	4,0	20	57	10,0	8,0	6	2	A	123,50	010		
1,0	0,25	2,0	0,95	4,0	40	80	4,5	4,0	6	2	A			131,30	010
1,5	0,30	2,5	1,40	7,5	20	57	12,5	7,0	6	2	A	117,90	015		
1,5	0,30	2,5	1,40	7,5	40	80	4,5	3,5	6	2	A			124,60	015
2,0	0,50	3,0	1,80	8,0	20	57	12,0	6,5	6	2	A	98,75	020		
2,0	0,50	3,0	1,80	8,0	40	80	4,0	3,0	6	2	A			109,80	020
3,0	0,50	3,5	2,80	10,0	20	57	11,5	5,0	6	2	A	95,34	030		
3,0	0,50	3,5	2,80	12,0	40	80	3,5	2,5	6	2	A			106,60	030
4,0	0,50	4,0	3,80	12,0	20	57	11,0	3,5	6	2	A	89,06	041		
4,0	0,50	4,0	3,80	20,0	40	80	4,0	1,5	6	2	A			105,70	041
4,0	1,00	4,0	3,80	12,0	20	57	11,0	3,5	6	2	A	93,35	040		
4,0	1,00	4,0	3,80	20,0	40	80	4,0	1,5	6	2	A			103,60	040
5,0	1,00	5,0	4,70	14,0	20	57	10,0	2,0	6	2	A	87,62	051		
5,0	1,00	5,0	4,70	25,0	40	80	3,0	1,0	6	2	A			104,40	051
5,0	1,50	5,0	4,70	14,0	20	57	10,0	2,0	6	2	A	91,59	050		
5,0	1,50	5,0	4,70	25,0	40	80	3,0	1,0	6	2	A			108,10	050
6,0	1,00	6,0	5,60	20,0		57			6	2	B	81,57	961		
6,0	1,00	6,0	5,60	40,0		80			6	2	B			99,30	961
6,0	2,00	6,0	5,60	20,0		57			6	2	B	85,42	060		
6,0	2,00	6,0	5,60	40,0		80			6	2	B			104,00	060
6,0	2,00	6,0	5,60	25,0	60	100	2,0	1,0	8	2	A			127,80	061
8,0	1,00	7,0	7,60	25,0		63			8	2	B	112,40	082		
8,0	1,00	7,0	7,60	60,0		100			8	2	B			131,30	082
8,0	2,00	7,0	7,60	25,0		63			8	2	B	119,10	080		
8,0	2,00	7,0	7,60	60,0		100			8	2	B			129,00	080
8,0	2,00	7,0	7,60	30,0	75	120	2,0	1,0	10	2	A			180,80	081
8,0	2,50	7,0	7,60	60,0		100			8	2	B			120,10	083
10,0	1,50	8,0	9,60	30,0		72			10	2	B	166,50	102		
10,0	1,50	8,0	9,60	75,0		120			10	2	B			179,60	102
10,0	2,50	8,0	9,60	75,0		120			10	2	B			164,20	104
10,0	3,00	8,0	9,60	30,0		72			10	2	B	162,00	100		
10,0	3,00	8,0	9,60	50,0		100			10	2	B			151,00	103
10,0	3,00	8,0	9,60	75,0		120			10	2	B			175,20	100
10,0	3,00	8,0	9,60	40,0	110	160	1,0	0,5	12	2	A			266,80	101
12,0	1,50	10,0	11,50	35,0		83			12	2	B	202,80	122		
12,0	1,50	10,0	11,50	70,0		160			12	2	B			262,30	122
12,0	4,00	10,0	11,50	35,0		83			12	2	B	206,10	120		
12,0	4,00	10,0	11,50	35,0	40	92	37,0	3,5	16	2	A	282,20	121		
12,0	4,00	10,0	11,50	70,0		160			12	2	B			257,90	120
12,0	4,00	10,0	11,50	50,0	150	200	1,5	1,0	16	2	A			426,60	121
16,0	5,00	12,0	15,50	40,0		92			16	2	B	277,80	160		
16,0	5,00	12,0	15,50	80,0		200			16	2	B			426,60	160

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–356

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 54 HRC





Factory standard | Factory standard

HA | HA

V0 | V0

DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Article no. 50 649 ...		Article no. 50 649 ...	
mm	mm	mm	mm	mm	mm		mm		EUR		EUR	
0,2	0,02	0,2	0,18	0,6	55	15	6	2	75,61	921		
0,2	0,02	0,2	0,18	1,0	55	15	6	2	76,16	022		
0,2	0,02	0,2	0,18	1,6	55	15	6	2	76,81	023		
0,2	0,02	0,2	0,18	2,0	55	15	6	2	78,04	024		
0,3	0,03	0,3	0,28	0,9	55	15	6	2	75,61	031		
0,3	0,03	0,3	0,28	1,5	55	15	6	2	76,16	032		
0,3	0,03	0,3	0,28	2,4	55	15	6	2	76,81	033		
0,3	0,03	0,3	0,28	3,0	55	15	6	2	78,04	034		
0,4	0,04	0,4	0,37	1,2	55	15	6	2	75,61	041		
0,4	0,04	0,4	0,37	2,0	55	15	6	2	76,16	042		
0,4	0,04	0,4	0,37	3,2	55	15	6	2	76,81	043		
0,4	0,04	0,4	0,45	4,0	55	15	6	2	78,04	044		
0,5	0,05	0,5	0,45	1,5	55	15	6	2	73,74	051		
0,5	0,05	0,5	0,45	2,5	55	15	6	2	74,39	052		
0,5	0,05	0,5	0,45	4,0	55	15	6	2	75,61	053		
0,5	0,05	0,5	0,45	5,0	55	15	6	2	76,16	054		
0,6	0,06	0,6	0,58	2,0	55	15	6	2	63,48	061		
0,6	0,06	0,6	0,58	3,0	55	15	6	2	63,48	960		
0,6	0,06	0,6	0,58	5,0	65	15	6	2			67,34	063
0,6	0,06	0,6	0,58	6,0	65	15	6	2	73,07	961		
0,8	0,08	0,8	0,77	2,5	55	15	6	2	61,71	081		
0,8	0,08	0,8	0,77	4,0	55	15	6	2	63,48	980		
0,8	0,08	0,8	0,77	6,5	65	15	6	2			68,66	083
0,8	0,08	0,8	0,77	8,0	65	15	6	2	73,07	981		
1,0	0,10	1,0	0,95	3,0	55	15	6	2	61,71	101		
1,0	0,10	1,0	0,95	5,0	55	15	6	2	63,48	010		
1,0	0,10	1,0	0,95	8,0	65	15	6	2			65,24	103
1,0	0,10	1,0	0,95	10,0	65	15	6	2			70,97	011
1,0	0,10	1,0	0,95	12,0	65	15	6	2			73,07	105
1,2	0,12	1,2	1,15	3,0	55	15	6	2	61,71	121		
1,2	0,12	1,2	1,15	6,0	55	15	6	2	63,48	012		
1,2	0,12	1,2	1,15	10,0	65	15	6	2	68,66	123		
1,2	0,12	1,2	1,15	12,0	65	15	6	2			73,07	013
1,3	0,13	1,3	1,25	4,0	55	15	6	2	61,71	131		
1,3	0,13	1,3	1,25	7,0	55	15	6	2	63,48	132		
1,3	0,13	1,3	1,25	11,0	65	15	6	2			68,66	133
1,3	0,13	1,3	1,25	13,0	65	15	6	2			73,07	134
1,5	0,15	1,5	1,44	5,0	55	15	6	2	63,48	151		
1,5	0,15	1,5	1,44	7,5	55	15	6	2	63,48	015		
1,5	0,15	1,5	1,44	12,0	65	15	6	2			73,07	153
1,5	0,15	1,5	1,44	15,0	65	15	6	2			73,07	016

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

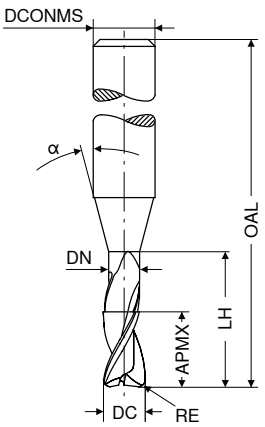
→ v_c/f_z Page 350–356

14

Continued on next page

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 54 HRC








	Ti1000	Ti1000
	Factory standard	Factory standard
	HA	HA
	V0	V0
	Article no. 50 649 ...	Article no. 50 649 ...
	EUR	EUR

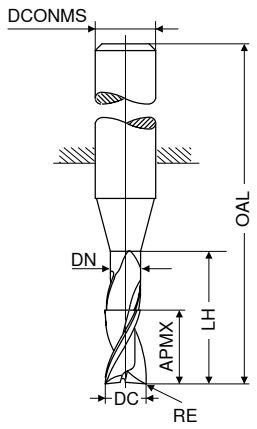
DC f8	RE ±0,01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP				
mm	mm	mm	mm	mm	mm		mm					
1,6	0,16	1,6	1,52	5,0	55	15	6	2	63,48	161		
1,6	0,16	1,6	1,52	8,0	55	15	6	2	63,48	162		
1,6	0,16	1,6	1,52	13,0	65	15	6	2			68,66	163
1,6	0,16	1,6	1,52	16,0	65	15	6	2			73,07	164
1,8	0,18	1,8	1,72	5,5	55	15	6	2	61,71	181		
1,8	0,18	1,8	1,72	9,0	55	15	6	2	63,48	182		
1,8	0,18	1,8	1,72	14,5	65	15	6	2			68,66	183
1,8	0,18	1,8	1,72	18,0	65	15	6	2			73,07	184
2,0	0,20	2,0	1,92	6,0	55	15	6	2	61,71	201		
2,0	0,20	2,0	1,92	10,0	55	15	6	2	63,48	202		
2,0	0,20	2,0	1,92	14,0	55	15	6	2	63,48	020		
2,0	0,20	2,0	1,92	16,0	65	15	6	2			73,07	204
2,0	0,20	2,0	1,92	20,0	65	15	6	2			73,07	021
2,3	0,23	2,3	2,22	7,0	55	15	6	2	63,48	231		
2,3	0,23	2,3	2,22	11,5	55	15	6	2	65,24	232		
2,3	0,23	2,3	2,22	18,5	65	15	6	2			73,07	233
2,3	0,23	2,3	2,22	23,0	65	15	6	2			73,07	234
3,0	0,30	3,0	2,90	9,0	65	15	6	2	65,24	301		
3,0	0,30	3,0	2,90	15,0	65	15	6	2	73,07	302		
3,0	0,30	3,0	2,90	24,0	100	15	6	2			79,25	303
3,0	0,30	3,0	2,90	30,0	100	15	6	2			82,67	304
4,0	0,40	4,0	3,90	12,0	65	15	6	2	73,07	401		
4,0	0,40	4,0	3,90	20,0	65	15	6	2	73,07	402		
4,0	0,40	4,0	3,90	32,0	100	15	6	2			82,67	403
4,0	0,40	4,0	3,90	40,0	100	15	6	2			85,09	404
5,0	0,50	5,0	4,90	15,0	65	15	6	2	73,07	501		
5,0	0,50	5,0	4,90	25,0	65	15	6	2	73,07	502		
5,0	0,50	5,0	4,90	40,0	100	15	6	2			85,09	503
5,0	0,50	5,0	4,90	50,0	100	15	6	2			89,39	504
6,0	0,60	6,0	5,90	18,0	65	15	6	2	73,07	601		
6,0	0,60	6,0	5,90	30,0	100	15	6	2			82,67	602
6,0	0,60	6,0	5,90	48,0	100	15	6	2			89,39	603
6,0	0,60	6,0	5,90	60,0	100	15	6	2			92,14	604

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–356

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 68 HRC





Factory standard | Factory standard | Factory standard

HA | HA | HA

V0 | V0 | V0

DC f8	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 50 651 ...	EUR		Article no. 50 651 ...	EUR		Article no. 50 651 ...	EUR	
mm	mm	mm	mm	mm	mm	mm										
2	0,3	2	1,8	7	50	6	2		53,24	020						
2	0,5	2	1,8	7	50	6	2		53,24	021						
2	0,3	2	1,8	7	60	6	2					53,24	022			
2	0,5	2	1,8	7	60	6	2					53,24	023			
2	0,3	2	1,8	7	85	6	2								77,59	024
2	0,5	2	1,8	7	85	6	2								77,59	025
3	0,3	2	2,8	7	50	6	2		53,24	030						
3	0,5	2	2,8	7	50	6	2		53,24	031						
3	0,3	2	2,8	12	60	6	2					53,24	032			
3	0,5	2	2,8	12	60	6	2					53,24	033			
3	0,3	2	2,8	12	85	6	2								77,59	034
3	0,5	2	2,8	12	85	6	2								77,59	035
4	0,3	3	3,8	13	54	6	2		53,24	040						
4	0,5	3	3,8	13	54	6	2		53,24	041						
4	1,0	3	3,8	13	54	6	2		53,24	042						
4	0,3	3	3,8	20	75	6	2					74,62	043			
4	0,5	3	3,8	20	75	6	2					74,62	044			
4	1,0	3	3,8	20	75	6	2					74,62	045			
4	0,3	3	3,8	20	85	6	2								77,59	046
4	0,5	3	3,8	20	85	6	2								77,59	047
4	1,0	3	3,8	20	85	6	2								77,59	048
5	0,5	3	4,6	13	54	6	2		53,24	050						
5	1,0	3	4,6	13	54	6	2		53,24	051						
5	1,5	3	4,6	13	54	6	2		53,24	052						
5	1,0	3	4,6	20	75	6	2					74,62	053			
5	1,5	3	4,6	20	75	6	2					74,62	054			
6	0,5	4	5,6	14	54	6	2		53,24	060						
6	1,0	4	5,6	14	54	6	2		53,24	061						
6	2,0	4	5,6	14	54	6	2		53,24	062						
6	0,5	4	5,6	45	85	6	2					74,62	066			
6	1,0	4	5,6	45	85	6	2					100,40	067			
6	2,0	4	5,6	45	85	6	2					74,62	068			
6	0,5	4	5,6	25	100	6	2								86,62	069
6	1,0	4	5,6	25	100	6	2								86,62	070
6	2,0	4	5,6	25	100	6	2								86,62	071
6	0,5	4	5,6	25	85	8	2					100,40	063			
6	1,0	4	5,6	25	85	8	2					74,62	064			
6	2,0	4	5,6	25	85	8	2					100,40	065			
8	0,5	4	7,6	16	58	8	2		65,02	080						
8	1,0	4	7,6	16	58	8	2		65,02	081						
8	2,0	4	7,6	16	58	8	2		65,02	082						

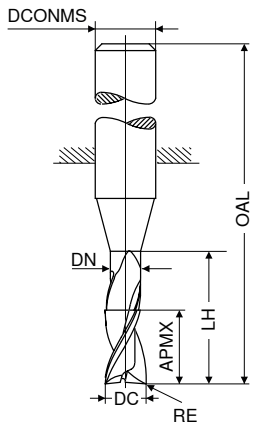
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials	○	○	○

→ v_c/f_z Page 350–356

14

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 68 HRC





Factory standard | Factory standard | Factory standard

HA | HA | HA

V0 | V0 | V0

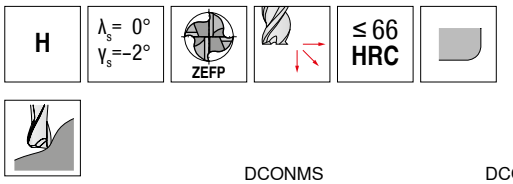
DC f8	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 50 651 ...		Article no. 50 651 ...		Article no. 50 651 ...	
mm	mm	mm	mm	mm	mm	mm		EUR		EUR		EUR	
8	0,5	4	7,6	50	100	8	2					138,80	083
8	2,0	4	7,6	50	100	8	2					101,00	084
8	1,0	4	7,6	30	100	10	2					138,80	085
8	2,0	4	7,6	30	100	10	2					136,80	086
10	1,0	6	9,6	18	66	10	2	80,89	100				
10	3,0	6	9,6	18	66	10	2	80,89	101				
10	1,0	6	9,6	50	100	10	2			137,80	102		
10	2,0	6	9,6	50	100	10	2			80,89	103		
10	3,0	6	9,6	50	100	10	2			137,80	104		
10	1,0	6	9,6	60	120	10	2					165,40	105
10	2,0	6	9,6	60	120	10	2					137,80	106
10	3,0	6	9,6	60	120	10	2					169,70	107
10	1,0	6	9,6	30	120	12	2					213,80	108
10	2,0	6	9,6	30	120	12	2					213,80	109
10	3,0	6	9,6	30	120	12	2					213,80	110
12	1,0	8	11,5	18	73	12	2	119,10	120				
12	2,0	8	11,5	18	73	12	2	119,10	121				
12	3,0	8	11,5	18	73	12	2	119,10	122				
12	4,0	8	11,5	18	73	12	2	119,10	123				
12	1,0	8	11,5	45	100	12	2			177,50	124		
12	2,0	8	11,5	45	100	12	2			177,50	125		
12	3,0	8	11,5	45	100	12	2			177,50	126		
12	4,0	8	11,5	45	100	12	2			177,50	127		
12	1,0	8	11,5	70	120	12	2					213,80	128
12	2,0	8	11,5	70	120	12	2					213,80	129
12	3,0	8	11,5	70	120	12	2					213,80	130
12	4,0	8	11,5	70	120	12	2					213,80	131
12	1,0	8	11,5	35	150	16	2					432,10	132
12	2,0	8	11,5	35	150	16	2					432,10	133
12	3,0	8	11,5	35	150	16	2					432,10	134
12	4,0	8	11,5	35	150	16	2					432,10	135

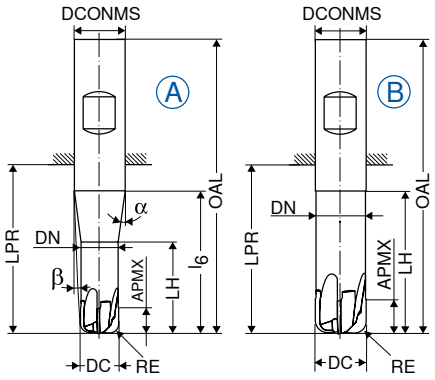
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials	○	○	○

→ v_c/f_z Page 350–356

Torus cutter

- ▲ Radius accuracy: ±0.005 mm
- ▲ High-performance tool for clearing
- ▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5°





LPR with Shank DIN 6535 HB



Factory standard | Factory standard | Factory standard

HA | HB | HA

DC ±0.01	RE ±0.005	APMX	DN	LH	l6	LPR	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	V1 Article no. 52 732 ...		V1 Article no. 52 733 ...		V1 Article no. 52 732 ...	
mm	mm	mm	mm	mm	mm	mm	mm			mm			EUR		EUR		EUR	
3	0,75	2,0	2,8	10	20	21	57	11,5	5,0	6	4	A	97,09	033	97,09	033		
4	1,00	2,5	3,8	12	20	21	57	11,0	3,5	6	4	A	97,09	044	97,09	044		
5	1,25	3,0	4,7	14	20	21	57	10,0	2,0	6	4	A	100,20	055	100,20	055		
6	1,50	4,0	5,6	20		21	57			6	4	B	101,40	065	101,40	065		
6	1,50	4,0	5,6	30		44	80			6	4	B					94,90	066
8	1,00	5,0	7,6	25		27	63			8	4	B	127,80	084				
8	1,00	5,0	7,6	35		44	80			8	4	B					129,00	085
8	2,00	5,0	7,6	25		27	63			8	4	B	140,00	086	140,00	086		
8	2,00	5,0	7,6	35		44	80			8	4	B					129,00	087
10	1,00	6,0	9,6	30		32	72			10	4	B	145,50	104				
10	1,00	6,0	9,6	30		32	72			10	6	B	162,00	105				
10	1,00	6,0	9,6	45		60	100			10	4	B					162,00	106
10	1,00	6,0	9,6	45		60	100			10	6	B					184,10	110
10	2,50	6,0	9,6	30		32	72			10	4	B	159,90	107	159,90	107		
10	2,50	6,0	9,6	30		32	72			10	6	B	162,00	108				
10	2,50	6,0	9,6	45		60	100			10	4	B					164,20	109
10	2,50	6,0	9,6	45		60	100			10	6	B					184,10	111
12	1,00	7,0	11,5	35		38	83			12	4	B	187,30	124				
12	1,00	7,0	11,5	35		38	83			12	8	B	228,10	125				
12	1,00	7,0	11,5	50		55	100			12	4	B					205,00	130
12	1,00	7,0	11,5	50		55	100			12	8	B					256,80	132
12	3,00	7,0	11,5	35		38	83			12	4	B	203,80	128	203,80	128		
12	3,00	7,0	11,5	35		38	83			12	8	B	228,10	129				
12	3,00	7,0	11,5	50		55	100			12	4	B					205,00	131
12	3,00	7,0	11,5	50		55	100			12	8	B					256,80	133
16	4,00	8,0	15,5	40		44	92			16	4	B	307,50	169	307,50	169		
16	4,00	8,0	15,5	60		72	120			16	4	B					299,80	170
16	4,00	8,0	15,5	60		72	120			16	8	B					359,30	171

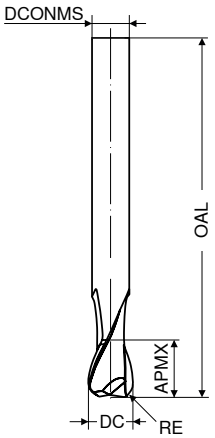
Steel	●	●	●
Stainless steel			
Cast iron	○	○	○
Non ferrous metals	○	○	○
Heat resistant alloys			
hardened materials	●	●	●

→ v_c/f_z Page 350–356

Intermediate size torus cutter

▲ reduced shank Ø for flexible application in various overhang lengths

H | λ_s=45° γ_s=12° | ZEFP | ≤ 56 HRC | Ti1000





Factory standard

HA

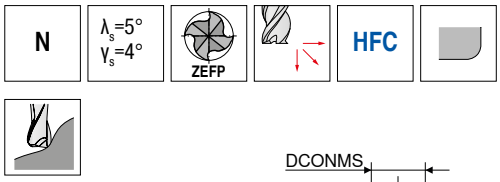
DC e8	RE ±0,01	APMX	OAL	DCONMS h6	ZEFP	V1 Article no. 52 107 ... EUR	
mm	mm	mm	mm	mm			
7	0,5	9	120	6	4	120,10	075
7	1,0	9	120	6	4	120,10	076
7	1,5	9	120	6	4	120,10	077
9	0,5	12	135	8	4	155,50	095
9	1,0	12	135	8	4	155,50	096
9	1,5	12	135	8	4	155,50	097
11	1,0	15	150	10	4	200,60	115
11	1,5	15	150	10	4	200,60	116
11	2,0	15	150	10	4	200,60	117
13	1,0	18	160	12	4	256,80	135
13	1,5	18	160	12	4	256,80	136
13	2,0	18	160	12	4	256,80	137
15	1,0	21	160	14	4	292,00	156
15	1,5	21	160	14	4	292,00	157
15	2,0	21	160	14	4	292,00	158
17	1,0	24	180	16	4	349,30	176
17	1,5	24	180	16	4	349,30	177
17	2,0	24	180	16	4	349,30	178
17	3,0	24	180	16	4	349,30	179

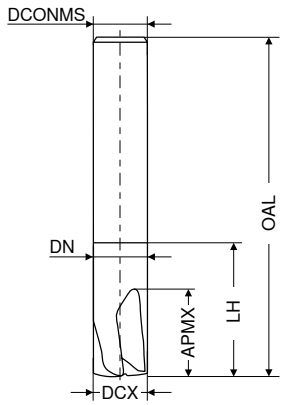
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 350–356

High feed cutter

- ▲ APMX does not correspond to the maximum cutting depth
- ▲ for feed per tooth (f_z) up to 1 mm
- ▲ roughing in large depths
- ▲ extremely quiet running
- ▲ r_{3D} = corner radius to be programmed





TiAlN





Factory standard

HA

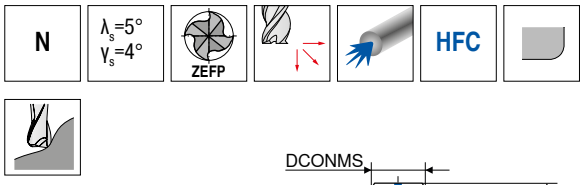
DCX h6 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	ZEFP	V1 Article no. 56 900 ...	EUR	
6	0,50	6	5,8	21	57	6	4		86,07	060
8	0,70	8	7,8	27	63	8	4		108,40	080
10	0,85	10	9,8	32	72	10	4		122,30	100
12	1,00	12	11,8	38	83	12	4		156,50	120
16	1,40	16	15,8	50	92	16	4		233,60	160

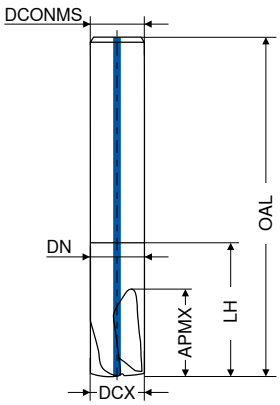
Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	●

→ v_c/f_z Page 346+347

High feed cutter

- ▲ APMX does not correspond to the maximum cutting depth
- ▲ for feed per tooth (f_z) up to 1 mm
- ▲ roughing in large depths
- ▲ extremely quiet running
- ▲ r_{3D} = corner radius to be programmed













Factory standard

HA

Factory standard

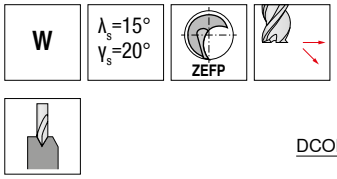
HA

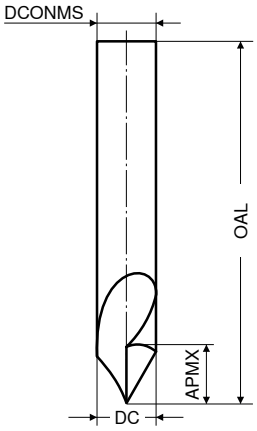
DCX h6 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	ZEFP	V1 Article no. 56 902 ...	EUR		V1 Article no. 56 904 ...	EUR	
6	0,50	6	5,8	21	57	6	4		90,49	**060**			
6	0,50	6	5,8	64	100	6	4					101,10	**060**
8	0,70	8	7,8	27	63	8	4		112,40	**080**			
8	0,70	8	7,8	64	100	8	4					127,80	**080**
10	0,85	10	9,8	32	72	10	4		143,30	**100**			
10	0,85	10	9,8	60	100	10	4					158,70	**100**
12	1,00	12	11,8	38	83	12	4		180,80	**120**			
12	1,00	12	11,8	65	110	12	4					206,10	**120**
16	1,40	16	15,8	50	92	16	4		337,30	**160**			
16	1,40	16	15,8	65	150	16	4					361,50	**160**

Steel	●	●
Stainless steel	○	○
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	●	●

→ v_c/f_z Page 346+347

Engraving cutter 60°







Factory standard

HA

V1

DC h6 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 195 ... EUR	
3	15	50	3	1	38,91	030
4	18	50	4	1	41,43	040
6	20	54	6	1	44,53	060

Steel	○
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 350–353

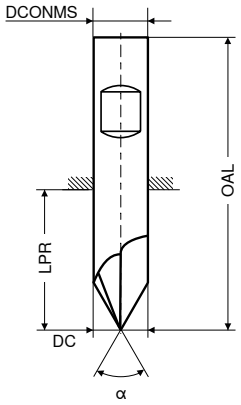
14

NC deburring cutter

N

λ_s=0°
γ_s=0°





Ti1000 Ti1000 Ti1000



	α = 60°	α = 60°	α = 90°	α = 90°	α = 120°	α = 120°
	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard
	HB	HB	HB	HB	HB	HB
	V1	V1	V1	V1	V1	V1
DC h6 / OAL / LPR / DCONMS h6 / ZEFP	Article no. 52 150 ...	Article no. 52 153 ...	Article no. 52 151 ...	Article no. 52 154 ...	Article no. 52 152 ...	Article no. 52 155 ...
mm / mm / mm / mm /	EUR	EUR	EUR	EUR	EUR	EUR
4 / 50 / 22 / 4 / 4	26,33 040 [1]	35,38 040 [1]	26,33 040 [1]	35,38 040 [1]	26,33 040 [1]	35,38 040 [1]
6 / 54 / 18 / 6 / 4	33,96 060 [2]	47,16 060	33,96 060 [2]	47,16 060	33,96 060 [2]	47,16 060
8 / 59 / 23 / 8 / 4	40,11 080 [2]	57,53 080	40,11 080 [2]	57,53 080	40,11 080 [2]	57,53 080
10 / 60 / 20 / 10 / 4	49,60 100 [2]	70,10 100	49,60 100 [2]	70,10 100	49,60 100 [2]	70,10 100
12 / 70 / 25 / 12 / 4	69,76 120 [2]	95,34 120	69,76 120 [2]	95,34 120	69,76 120 [2]	95,34 120
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials		○		○		○

1) DIN 6535 HA Shank
2) included in the set

→ v_c/f_z Page 350–353

Solid carbide NC deburring cutter set, factory standard

▲ Sets contain Ø 6, Ø 8, Ø 10 and Ø 12 mm

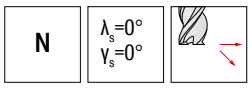


	α = 60°	α = 90°	α = 120°
	HB	HB	HB
	V1	V1	V1
	Article no. 52 150 ...	Article no. 52 151 ...	Article no. 52 152 ...
	EUR	EUR	EUR
Set	195,10 999	195,10 999	195,10 999

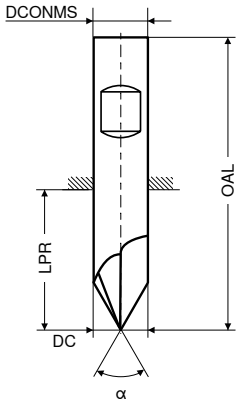
NC deburring cutter

N

λ_s=0°
γ_s=0°







Ti1000 Ti1000 Ti1000



DC h6	OAL	LPR	DCONMS h6	ZEFP	α = 60° Factory standard HB V0 Article no. 50 940 ... EUR		α = 60° Factory standard HB V0 Article no. 50 943 ... EUR		α = 90° Factory standard HB V0 Article no. 50 941 ... EUR		α = 90° Factory standard HB V0 Article no. 50 944 ... EUR		α = 120° Factory standard HB V0 Article no. 50 942 ... EUR		α = 120° Factory standard HB V0 Article no. 50 945 ... EUR	
mm	mm	mm	mm													
4	54	26	4	4	24,69	040 [1]	32,96	040 [1]	24,69	040 [1]	32,96	040 [1]	24,69	040 [1]	32,96	040 [1]
6	54	18	6	4	32,07	060	44,53	060	32,07	060	44,53	060	32,07	060	44,53	060
8	58	22	8	4	37,80	080	54,01	080	37,80	080	54,01	080	37,80	080	54,01	080
10	66	26	10	4	46,61	100	65,69	100	46,61	100	65,69	100	46,61	100	65,69	100
12	73	28	12	4	65,24	120	89,17	120	65,24	120	89,17	120	65,24	120	89,17	120

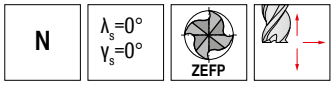
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials		○		○		○

1) DIN 6535 HA Shank

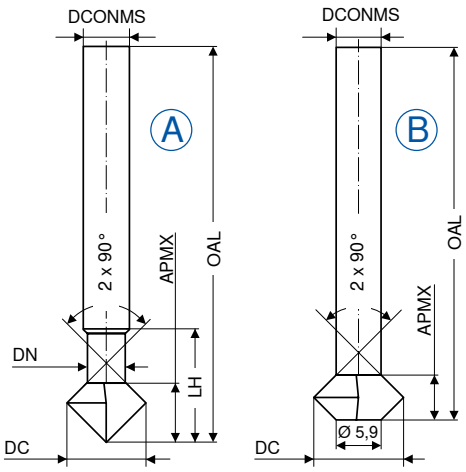
→ v_c/f_z Page 350–353

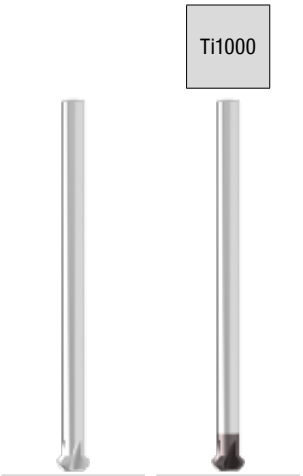
14

NC front and rear chamfer milling cutter







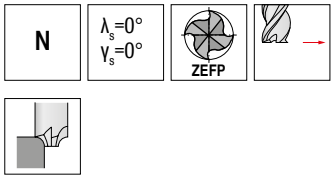


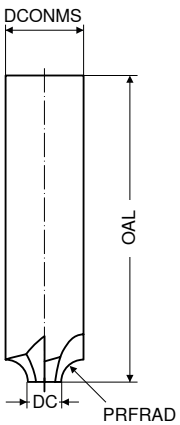
DC mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS $_{h5}$ mm	ZEFP	Fig.	V1 Article no. 52 158 ... EUR		V1 Article no. 52 159 ... EUR	
3	2,0	2,2	12,0	75	4	4	A	53,89	**030**	60,94	**030**
4	2,7	2,9	17,7	75	4	4	A	53,89	**040**	62,05	**040**
5	3,0	3,9	18,0	75	5	4	A	55,21	**050**	63,26	**050**
6	4,0	3,9	19,0	100	6	4	A	67,34	**060**	75,61	**060**
8	2,0			100	6	4	B	87,72	**080**	98,09	**080**
10	4,0			100	6	4	B	109,30	**100**	122,30	**100**
12	6,0			100	6	4	B	131,30	**120**	145,50	**120**

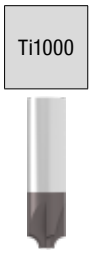
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		○

→ v_c/f_z Page 350–353

Quarter-round profile milling cutter, concave







Factory standard

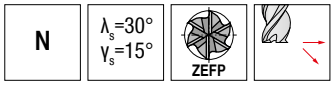
HA

PRFRAD +/-0,02 mm	DC mm	OAL mm	DCONMS h6 mm	ZEFP	V1 Article no. 52 249 ... EUR	
0,50	7,0	70	8	4	117,90	**005**
1,00	6,0	70	8	4	117,90	**010**
1,25	7,5	75	10	4	129,00	**012**
1,50	7,0	75	10	4	125,70	**015**
2,00	6,0	75	10	4	125,70	**020**
2,50	7,0	73	12	4	140,00	**025**
3,00	6,0	73	12	4	140,00	**030**
3,50	9,0	80	16	4	176,30	**035**
4,00	8,0	80	16	4	176,30	**040**
4,50	7,0	80	16	4	176,30	**045**
5,00	10,0	80	20	4	251,30	**050**
6,00	8,0	80	20	4	251,30	**060**

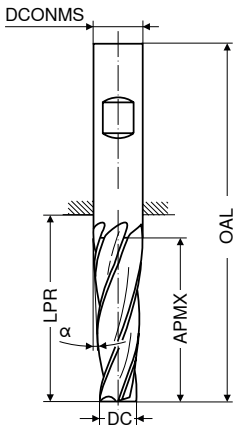
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

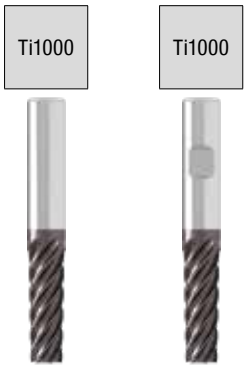
→ v_c/f_z Page 350–353

Die milling cutter









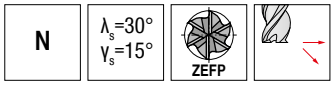
DC ±0,1 mm	α°	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Factory standard HA V1 Article no. 52 291 ...	EUR	Factory standard HB V1 Article no. 52 291 ...	EUR
2,0	0,5	10	22	50	3	4		80,46 000		
2,5	0,5	10	22	50	3	4		77,37 001		
2,5	0,5	20	32	60	4	4		102,00 002		
3,0	0,5	20	32	60	4	4		104,70 003		
4,0	0,5	20	32	60	5	4		107,60 004		
5,0	0,5	30	34	75	6	6				121,30 005
6,0	0,5	30	35	75	8	6				123,50 006
8,0	0,5	30	35	80	10	6				130,00 007
10,0	0,5	30	36	85	12	6				149,90 008
12,0	0,5	30	36	85	14	6				189,60 009
12,0	0,5	50	57	110	14	6				201,80 010
16,0	0,5	60	72	120	18	6				295,40 011
2,0	1	10	22	50	3	4		80,46 100		
2,5	1	10	22	50	3	4		77,37 101		
2,5	1	20	32	60	4	4		102,00 102		
3,0	1	20	32	60	4	4		104,70 103		
3,5	1	20	32	60	5	4		107,60 104		
4,0	1	20	32	60	5	4		107,60 105		
4,5	1	20	29	65	6	6				109,30 106
5,0	1	25	29	70	6	6				121,30 107
6,0	1	30	36	75	8	6				121,30 108
8,0	1	30	36	80	10	6				130,00 109
10,0	1	30	36	85	12	6				149,90 110
12,0	1	30	36	85	14	6				189,60 111
12,0	1	50	55	110	14	6				201,80 112
16,0	1	55	61	115	18	6				295,40 113
2,0	1,5	10	22	50	3	4		80,46 200		
2,5	1,5	10	22	50	4	4		88,39 201		
2,5	1,5	20	32	60	4	4		102,00 202		
3,0	1,5	20	32	60	4	4		104,70 203		
3,5	1,5	20	32	60	5	4		107,60 204		
4,0	1,5	20	32	60	5	4		107,60 205		
4,5	1,5	20	25	65	6	4				109,30 206
5,0	1,5	30	36	75	8	6				121,30 207
6,0	1,5	30	36	75	8	6				121,30 208
8,0	1,5	30	36	80	10	6				130,00 209
10,0	1,5	30	36	85	12	6				149,90 210
12,0	1,5	30	36	85	14	6				189,60 211
12,0	1,5	50	56	110	16	6				218,30 212
16,0	1,5	60	68	125	20	6				332,80 213
2,0	2	10	22	50	3	4		80,46 301		
2,5	2	10	22	50	4	4		88,39 302		
2,5	2	20	32	60	4	4		102,00 303		
3,0	2	20	32	60	5	4		107,60 304		
3,5	2	20	32	60	5	4		107,60 305		
4,0	2	20	27	65	6	4				109,30 306
4,5	2	30	37	75	8	4				121,30 307
5,0	2	30	37	75	8	6				121,30 308
6,0	2	28	32	75	8	6				121,30 309
8,0	2	28	33	75	10	6				130,00 310
10,0	2	28	33	85	12	6				149,90 311
12,0	2	28	33	85	14	6				189,60 312
12,0	2	50	56	110	16	6				207,30 313

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

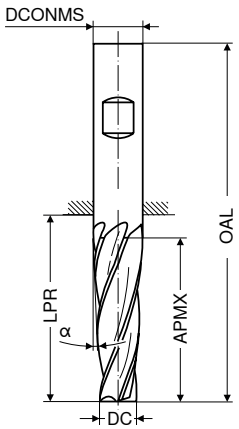
→ v_c/f_z Page 350–353

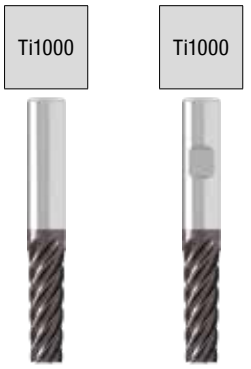
Continued on next page

Die milling cutter









DC ±0,1 mm	α°	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Factory standard HA V1 Article no. 52 291 ...	EUR	Factory standard HB V1 Article no. 52 291 ...	EUR
16,0	2	55	62	115	20	6			325,10	314
2,0	2,5	15	22	50	4	4	89,94	401		
2,5	2,5	20	32	60	5	4	103,70	402		
3,0	2,5	20	32	60	5	4	107,60	403		
4,0	2,5	20	26	65	6	4			109,30	404
5,0	2,5	30	35	75	8	6			121,30	405
6,0	2,5	30	36	80	10	6			121,30	406
8,0	2,5	30	36	85	12	6			149,90	407
10,0	2,5	40	46	100	14	6			189,60	408
2,0	3	10	22	50	4	4	89,94	500		
2,5	3	10	22	50	4	4	91,81	501		
2,5	3	20	27	65	6	4			108,10	502
3,0	3	25	32	70	6	4			109,30	503
3,0	3	30	38	75	8	4			121,30	504
3,0	3	40	47	85	8	4			130,00	505
4,0	3	25	30	70	8	6			115,80	506
4,0	3	30	35	75	8	6			120,10	507
5,0	3	40	46	90	10	6			149,90	508
6,0	3	30	36	80	10	6			130,00	509
8,0	3	30	36	85	12	6			149,90	510
8,0	3	50	57	110	14	6			196,30	511
10,0	3	30	36	85	14	6			189,60	512
10,0	3	50	57	110	16	6			227,00	513
12,0	3	30	38	90	16	6			206,10	514
12,0	3	50	57	110	18	6			285,50	515
2,5	4	25	30	65	6	4			115,80	601
3,0	4	20	26	65	6	4			115,80	602
3,5	4	25	32	70	8	4			126,80	603
4,0	4	28	33	70	8	6			138,80	604
5,0	4	30	36	85	10	6			143,30	605
5,0	4	45	51	100	12	6			164,20	606
6,0	4	30	38	84	12	6			161,00	607
6,0	4	50	58	110	14	6			205,00	608
8,0	4	30	38	84	14	6			199,50	609
8,0	4	50	58	110	16	6			240,20	610
10,0	4	30	39	93	16	6			221,50	611
10,0	4	50	58	114	18	6			305,30	612
2,5	5	20	25	65	6	4			115,80	701
3,0	5	28	34	70	8	4			126,80	702
3,5	5	30	38	80	10	4			140,00	703
4,0	5	30	36	80	10	6			140,00	704
4,5	5	30	36	80	10	6			140,00	705
5,0	5	30	38	84	12	6			164,20	706
5,0	5	40	46	100	12	6			166,50	707
6,0	5	30	36	93	12	6			164,20	708
6,0	5	55	62	110	16	6			240,20	709
8,0	5	30	38	90	14	6			201,80	710
8,0	5	50	58	114	18	6			305,30	711
10,0	5	30	38	93	16	6			221,50	712
10,0	5	55	63	115	20	6			332,80	713
12,0	5	30	38	93	18	6			233,60	714
12,0	5	45	52	100	20	6			325,10	715

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–353

14

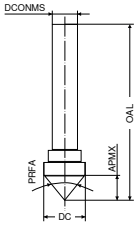
Carbide burrs, similar to DIN 8033

Teeth **Z3**: Application "medium"

Teeth **Z6**: Application "medium"

v_c in m/min = 300–600

KSJ



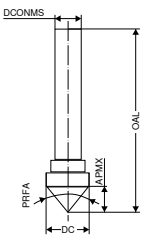

Z3

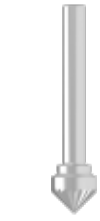

Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 928 ...		U9 Article no. 50 928 ...	
mm	mm	mm	mm		EUR		EUR	
6	5	52	6	60°	11,36	606	12,56	706
12	10	60	6	60°	15,32	612 1)	16,86	712 1)

1) Steel shank / carbide head – shank tolerance h9

KSK



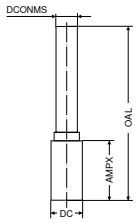

Z3


Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 927 ...		U9 Article no. 50 927 ...	
mm	mm	mm	mm		EUR		EUR	
6	3	52	6	90°	10,86	606	12,01	706
12	6	56	6	90°	13,23	612 1)	14,65	712 1)

1) Steel shank / carbide head – shank tolerance h9

ZYA



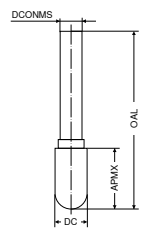

Z3


Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 921 ...		U9 Article no. 50 921 ...	
mm	mm	mm	mm	EUR		EUR	
3	13	40	3	5,45	303	5,99	403
6	13	48	3	9,92	306 1)	10,86	406 1)
6	16	55	6	11,24	606	12,34	706
8	20	65	6	14,33	608 1)	15,76	708 1)
10	20	65	6	16,31	610 1)	17,63	710 1)
12	25	70	6	20,94	612 1)	23,04	712 2)

1) Steel shank / carbide head – shank tolerance h9
2) Steel shank / carbide head – shank tolerance h7

WRC



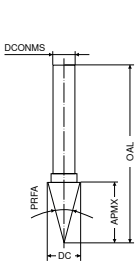

Z3


Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 922 ...		U9 Article no. 50 922 ...	
mm	mm	mm	mm	EUR		EUR	
3	13	40	3	6,86	303	7,56	403
6	13	48	3	11,13	306 1)	12,34	406 1)
6	16	50	6	12,56	606	13,88	706
8	18	63	6	15,98	608 1)	17,63	708 1)
10	20	65	6	18,51	610 1)	20,28	710 1)
12	25	70	6	25,13	612 1)	27,66	712 1)
16	25	70	6	33,51	616 1)	36,81	716 1)

1) Steel shank / carbide head – shank tolerance h9

SKM



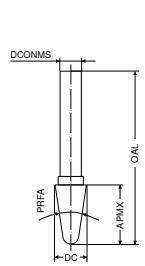

Z3


Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 926 ...		U9 Article no. 50 926 ...	
mm	mm	mm	mm		EUR		EUR	
3	11	40	3	14°	6,65	303	7,27	403
6	13	48	3	23°	9,32	306 1)	10,19	406 1)
6	18	50	6	16°	11,79	606	12,90	706
8	20	65	6	20°	11,13	608 1)	12,34	708 1)
10	20	65	6	25°	13,23	610 1)	14,65	710 1)
12	25	70	6	25°	18,18	612 1)	19,83	712 1)

1) Steel shank / carbide head – shank tolerance h9

KEL




Z3


Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 923 ...		U9 Article no. 50 923 ...	
mm	mm	mm	mm		EUR		EUR	
3	14	40	3	6°	6,65	303	7,27	403
6	20	55	3	12°	11,36	306 1)	12,56	406 1)
6	20	50	6	10°	12,56	606	13,88	706
8	20	65	6	14°	17,86	608 1)	19,62	708 1)
10	20	65	6	14°	22,15	610 1)	24,14	710 1)
12	30	75	6	14°	26,56	612 1)	28,98	712 1)

1) Steel shank / carbide head – shank tolerance h9

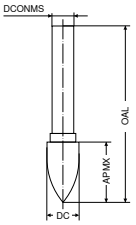
Carbide burrs, similar to DIN 8033

Teeth **Z3**: Application "medium"

Teeth **Z6**: Application "medium"

v_c in m/min = 300–600

SPG



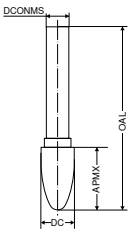

Z3


Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 925 ...		U9 Article no. 50 925 ...	
mm	mm	mm	mm	EUR		EUR	
3	13	40	3	6,43	303	7,04	403
6	13	48	3	9,61	306 1)	10,58	406 1)
6	18	50	6	14,23	606	15,54	706
8	20	65	6	14,33	608 1)	15,76	708 1)
10	20	65	6	17,86	610 1)	19,62	710 1)
12	25	70	6	20,94	612 2)	23,15	712 1)

1) Steel shank / carbide head – shank tolerance h9
2) Steel shank / carbide head – shank tolerance h7

RBF



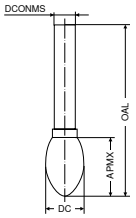

Z3


Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 924 ...		U9 Article no. 50 924 ...	
mm	mm	mm	mm	EUR		EUR	
3	13	40	3	6,65	303	7,27	403
6	13	48	3	10,58	306 1)	11,68	406 1)
6	18	50	6	14,65	606	16,31	706
8	20	65	6	15,65	608 1)	17,31	708 1)
10	20	65	6	18,18	610 1)	19,95	710 1)
12	25	70	6	22,05	612 1)	24,02	712 1)
16	30	75	6	31,41	616 1)	34,50	716 1)

1) Steel shank / carbide head – shank tolerance h9

TRE



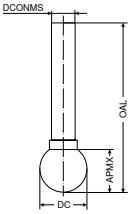

Z3


Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 929 ...		U9 Article no. 50 929 ...	
mm	mm	mm	mm	EUR		EUR	
3	7	40	3	6,65	303	7,27	403
6	10	45	3	9,89	306 1)	10,77	406 1)
6	10	50	6	13,33	606	14,77	706
8	13	58	6	14,88	608 1)	16,42	708 1)
10	16	61	6	16,97	610 1)	18,73	710 1)
12	20	65	6	21,38	612 1)	23,36	712 1)

1) Steel shank / carbide head – shank tolerance h9

KUD



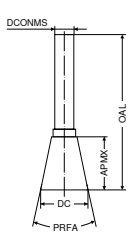

Z3


Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 930 ...		U9 Article no. 50 930 ...	
mm	mm	mm	mm	EUR		EUR	
3	2,7	40,0	3	6,65	303	7,27	403
6	5,4	40,4	3	8,93	306 1)	9,89	406 1)
6	5,0	50,0	6	12,90	606	14,33	706
8	7,2	52,2	6	12,34	608 1)	13,33	708 1)
10	9,0	54,0	6	14,44	610 1)	15,76	710 1)
12	10,8	55,8	6	17,31	612 1)	19,18	712 1)
16	14,4	59,4	6	24,69	616 1)	27,11	716 1)

1) Steel shank / carbide head – shank tolerance h9

WKN




Z3


Z6

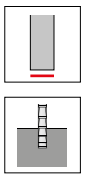
DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 931 ...		U9 Article no. 50 931 ...	
mm	mm	mm	mm		EUR		EUR	
3	7	40	3	10°	6,65	303	7,27	403
6	7	50	6	10°	12,34	606	13,45	706
12	13	58	6	20°	16,54	612 1)	18,18	712 1)

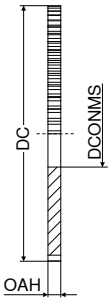
1) Steel shank / carbide head – shank tolerance h9

14

Circular saw blades

▲ straight cut







DIN 1837 A

DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... EUR	
mm	mm	mm			
15	0,20	5	64	14,44	102
15	0,25	5	64	14,44	103
15	0,30	5	64	14,44	104
15	0,35	5	64	14,44	105
15	0,40	5	64	14,44	106
15	0,50	5	48	14,44	107
15	0,60	5	48	14,44	108
15	0,70	5	48	17,20	109
15	0,80	5	40	17,20	110
15	0,90	5	40	17,63	111
15	1,00	5	40	18,30	112
15	1,10	5	40	19,07	113
15	1,20	5	40	19,07	114
15	1,30	5	40	19,07	115
15	1,40	5	40	19,07	116
15	1,50	5	40	20,73	117
15	1,60	5	40	22,26	118
15	1,70	5	40	24,14	119
15	1,80	5	40	24,14	120
15	1,90	5	40	25,13	121
15	2,00	5	40	25,46	122
15	2,50	5	40	35,16	123
15	3,00	5	40	39,79	124
15	3,50	5	40	44,97	125
15	4,00	5	40	55,44	126
15	4,50	5	40	65,02	127
15	5,00	5	40	67,67	128
15	5,50	5	40	80,79	129
15	6,00	5	40	83,21	130
20	0,20	5	80	15,65	152
20	0,25	5	64	15,65	153
20	0,30	5	64	15,65	154
20	0,35	5	64	15,65	155
20	0,40	5	64	15,65	156
20	0,50	5	48	15,65	157
20	0,60	5	48	15,65	158
20	0,70	5	48	18,30	159
20	0,80	5	48	18,30	160
20	0,90	5	40	19,07	161
20	1,00	5	40	20,73	162
20	1,10	5	40	22,26	163
20	1,20	5	40	22,26	164
20	1,30	5	40	23,47	165
20	1,40	5	40	25,46	166
20	1,50	5	40	25,46	167
20	1,60	5	40	26,68	168
20	1,70	5	40	28,10	169
20	1,80	5	32	28,10	170
20	1,90	5	32	29,43	171
20	2,00	5	32	29,43	172
20	2,50	5	32	37,14	173
20	3,00	5	32	42,33	174
20	3,50	5	24	47,61	175
20	4,00	5	24	56,66	176

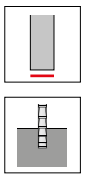
DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... EUR	
mm	mm	mm			
20	4,50	5	24	67,67	177
20	5,00	5	24	70,42	178
20	5,50	5	24	81,89	179
20	6,00	5	24	84,54	180
25	0,20	8	80	15,43	202
25	0,25	8	80	15,43	203
25	0,30	8	80	15,43	204
25	0,35	8	64	15,43	205
25	0,40	8	64	15,43	206
25	0,50	8	64	17,96	207
25	0,60	8	64	17,96	208
25	0,70	8	48	19,95	209
25	0,80	8	48	22,26	210
25	0,90	8	48	24,14	211
25	1,00	8	48	24,14	212
25	1,10	8	48	27,78	213
25	1,20	8	48	27,78	214
25	1,30	8	40	28,98	215
25	1,40	8	40	30,20	216
25	1,50	8	40	30,20	217
25	1,60	8	40	33,28	218
25	1,70	8	40	33,28	219
25	1,80	8	40	34,61	220
25	1,90	8	40	37,03	221
25	2,00	8	40	38,14	222
25	2,50	8	40	46,29	223
25	3,00	8	32	60,29	224
25	3,50	8	32	66,47	225
25	4,00	8	32	75,06	226
25	4,50	8	32	85,97	227
25	5,00	8	32	90,82	228
25	5,50	8	24	103,40	229
25	6,00	8	24	108,30	230
30	0,20	8	100	19,95	252
30	0,25	8	100	19,95	253
30	0,30	8	80	19,95	254
30	0,35	8	80	19,95	255
30	0,40	8	80	19,95	256
30	0,50	8	80	20,94	257
30	0,60	8	64	20,94	258
30	0,70	8	64	25,36	259
30	0,80	8	64	27,78	260
30	0,90	8	64	30,20	261
30	1,00	8	64	30,20	262
30	1,10	8	64	33,96	263
30	1,20	8	48	33,40	264
30	1,30	8	48	34,50	265
30	1,40	8	48	37,59	266
30	1,50	8	48	37,59	267
30	1,60	8	48	40,01	268
30	1,70	8	48	40,01	269
30	1,80	8	48	41,11	270
30	1,90	8	48	42,33	271
30	2,00	8	48	44,97	272
30	2,50	8	40	52,79	273
30	3,00	8	40	62,82	274
30	3,50	8	40	71,31	275
30	4,00	8	40	80,02	276
30	4,50	8	32	92,25	277
30	5,00	8	32	97,22	278
30	5,50	8	32	109,50	279
30	6,00	8	32	114,60	280

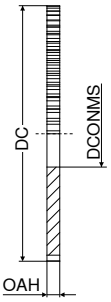
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 349

Circular saw blades

▲ straight cut







DIN 1837 A

DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... EUR	
mm	mm	mm			
40	0,20	10	128	24,46	302
40	0,25	10	100	24,46	303
40	0,30	10	100	24,46	304
40	0,35	10	100	24,46	305
40	0,40	10	100	25,91	306
40	0,50	10	80	28,22	307
40	0,60	10	80	28,22	308
40	0,70	10	80	32,29	309
40	0,80	10	80	33,61	310
40	0,90	10	64	33,61	311
40	1,00	10	64	34,72	312
40	1,10	10	64	35,82	313
40	1,20	10	64	37,14	314
40	1,30	10	64	37,80	315
40	1,40	10	64	40,23	316
40	1,50	10	64	41,43	317
40	1,60	10	64	42,43	318
40	1,70	10	48	44,97	319
40	1,80	10	48	46,06	320
40	1,90	10	48	47,39	321
40	2,00	10	48	47,39	322
40	2,50	10	48	60,94	323
40	3,00	10	48	70,54	324
40	3,50	10	48	78,80	325
40	4,00	10	40	87,40	326
40	4,50	10	40	99,20	327
40	5,00	10	40	105,30	328
40	5,50	10	40	117,90	329
40	6,00	10	40	124,60	330
50	0,20	13	128	40,23	352
50	0,25	13	128	38,91	353
50	0,30	13	128	33,06	354
50	0,35	13	100	33,06	355
50	0,40	13	100	33,06	356
50	0,50	13	100	34,16	357
50	0,60	13	100	34,16	358
50	0,70	13	80	35,82	359
50	0,80	13	80	38,91	360
50	0,90	13	80	40,23	361
50	1,00	13	80	41,43	362
50	1,10	13	80	42,43	363
50	1,20	13	80	43,75	364
50	1,30	13	64	49,05	365
50	1,40	13	64	50,14	366
50	1,50	13	64	52,69	367
50	1,60	13	64	53,79	368
50	1,70	13	64	54,56	369
50	1,80	13	64	58,08	370
50	1,90	13	64	58,08	371
50	2,00	13	64	59,84	372
50	2,50	13	64	73,07	373
50	3,00	13	48	84,86	374
50	3,50	13	48	96,88	375
50	4,00	13	48	102,80	376
50	4,50	13	48	119,10	377
50	5,00	13	48	125,70	378
50	5,50	13	40	140,00	379
50	6,00	13	40	145,50	380
63	0,20	16	160	59,07	402
63	0,25	16	160	56,87	403
63	0,30	16	128	52,90	404
63	0,35	16	128	50,03	405
63	0,40	16	128	45,30	406
63	0,50	16	128	44,19	407
63	0,60	16	100	45,30	408
63	0,70	16	100	51,03	409
63	0,80	16	100	56,21	410
63	0,90	16	100	56,87	411
63	1,00	16	100	57,97	412
63	1,10	16	80	60,29	413
63	1,20	16	80	62,39	414
63	1,30	16	80	63,92	415
63	1,40	16	80	64,92	416
63	1,50	16	80	66,02	417
63	1,60	16	80	69,33	418
63	1,70	16	80	72,85	419
63	1,80	16	80	74,07	420
63	1,90	16	80	77,26	421
63	2,00	16	80	79,91	422
63	2,50	16	64	95,99	423
63	3,00	16	64	108,70	424
63	3,50	16	64	124,60	425
63	4,00	16	64	136,80	426
63	4,50	16	64	156,50	427
63	5,00	16	48	163,10	428
63	5,50	16	48	183,00	429
63	6,00	16	48	189,60	430

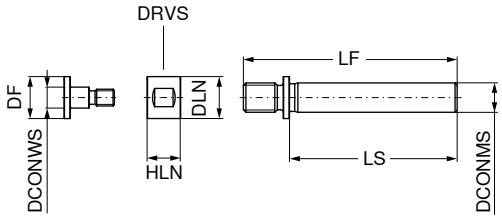
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 349

14

Cylindrical shank adapter for circular saw blades

▲ DCONWS = circular saw blade bore diameter





DCONMS h7	DLN	DF	LF	LS	HLN	DCONWS H7	DRVS	NEW X1 Article no. 72 900 ...	EUR	
mm	mm	mm	mm	mm	mm	mm	mm			
7	10	10	51	40	8	5	9		100,50	**005**
7	15	15	51	40	8	8	14		100,50	**008**
7	17	17	53	40	10	10	16		100,50	**010**
10	10	10	61	50	8	5	9		100,50	**105**
10	15	15	61	50	8	8	14		109,10	**108**
10	17	17	63	50	10	10	16		109,10	**110**
10	20	20	66	50	10	13	18		109,10	**113**
10	24	24	66	50	14	16	22		109,10	**116**
16	17	17	74	55	10	10	16		116,40	**210**
16	20	20	77	55	10	13	18		116,40	**213**
16	24	24	79	55	14	16	22		116,40	**216**


Screw – SR


Lock nut – KM

Spare parts for Article no.	X1 Article no. 72 945 ... EUR		X1 Article no. 72 945 ... EUR	
72 900 005	19,09	**000**	29,99	**005**
72 900 008	19,09	**001**	29,99	**006**
72 900 010	20,34	**002**	31,14	**007**
72 900 105	19,09	**000**	29,99	**005**
72 900 108	19,09	**001**	29,99	**006**
72 900 110	20,34	**002**	31,14	**007**
72 900 113	21,29	**003**	32,19	**008**
72 900 116	22,33	**004**	33,13	**009**
72 900 210	20,34	**010**	31,14	**012**
72 900 213	21,29	**003**	32,19	**008**
72 900 216	22,33	**011**	33,13	**013**

Application data for plastics cutters

Material	Strength N/mm² – HB	50 981 ... - 50 988 ...	50 932 ...	50 937 ...	50 936 ...	50 938 ...	50 610 ... 50 611 ...	50 946 ...	50 948 ...	50 947 ...
Aluminium (non alloyed, low alloyed)	< 350 N/mm²						●			
Aluminium	< 500 N/mm²						●			
Aluminium alloy 0,5–10 % Si	< 400 N/mm²						●			
Aluminium alloy 10 – 15 % Si	< 400 N/mm²					●		●	●	●
Aluminium	< 400 N/mm²					●		●	●	
Copper (non alloyed, low alloyed)	< 350 N/mm²						●			
Copper wrought alloys	< 700 N/mm²					●		●	●	●
Special copper alloys	< 200 HB					●		●	●	●
Special copper alloys	< 300 HB					●		●	●	●
Special copper alloys	< 300 HB					●		●	●	●
Short-chipping brass, bronze, red bronze	< 600 N/mm²						●			
Long-chipping brass	< 600 N/mm²						●			
Thermoplastics							●			
Duroplastics		●	●	●			●			
Fibre-reinforced plastics		●	●	●	●	●		●	●	●
Magnesium and Magnesium Alloys	< 850 N/mm²					●		●	●	●
Graphite		●	●	●	●	●		●		●
Tungsten and tungsten alloys									●	●
Molybdenum and molybdenum alloys									●	●
Machining direction		↘	↘	↘	↘	↘	↘	↘	↘	↘
		1	2	3	4	5	6	7	8	9

Tips

1 

▲ Very sharp cutting edges for GFK and CFK and to prevent delamination of the component.

2 

▲ For excellent tool life when machining AFK, CFK and Graphite.

3 

4 

▲ Specialist for machining honeycomb materials; Milling of pockets not fully through the workpiece.

5 

▲ Specialist for machining honeycomb materials.

▲ Milling of recesses that pass through the material, the lower deck is pushed and upper deck pulled therefore the workpiece material is stabilized.

6 

▲ For machining non fibre-reinforced plastics and non-ferrous metals with low silicon content. (PE, PA, PVC, acrylic glass)

7 

8 

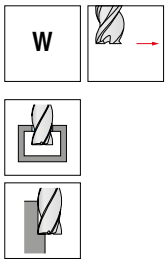
▲ For machining fibre-reinforced plastics and non-ferrous metals with high silicon content.

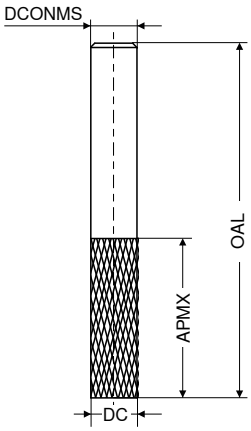
9 

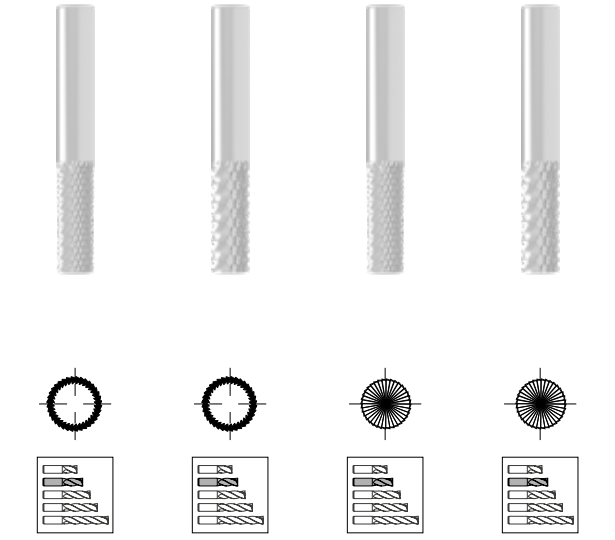
14

Cutter for plastics

- right hand cutting
- cross-pitched
- downward chip evacuation
- 50 981 ... and 50 983 ... = fine pitch
- 50 982 ... and 50 984 ... = medium pitch







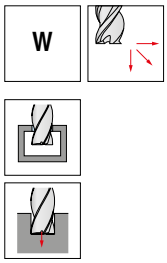
DC h10	APMX	OAL	DCONMS h6	Factory standard		Factory standard		Factory standard		Factory standard	
				HA		HA		HA		HA	
				V0		V0		V0		V0	
				Article no. 50 981 ...		Article no. 50 982 ...		Article no. 50 983 ...		Article no. 50 984 ...	
mm	mm	mm	mm	EUR		EUR		EUR		EUR	
2,0	7	40	2,0	14,33	020	14,99	020	17,41	020	18,08	020
2,0	7	50	6,0	29,32	021	29,32	021	31,52	021	31,52	021
3,0	10	40	3,0	14,33	030	14,99	030	17,41	030	18,08	030
3,0	12	50	6,0	29,32	031	29,32	031	31,52	031	31,52	031
3,5	12	40	3,5	16,97	035	17,52	035	18,96	035	19,73	035
4,0	15	40	4,0	19,28	040	19,95	040	20,50	040	21,70	040
4,0	20	50	6,0	29,32	041	29,32	041	31,52	041	31,52	041
4,5	15	50	4,5	22,26	045	23,15	045	24,02	045	25,02	045
5,0	16	50	5,0	25,13	050	26,46	050	27,23	050	28,33	050
5,0	25	75	6,0	44,97	051	44,97	051	46,96	051	46,96	051
6,0	18	50	6,0	29,32	060	28,22	060	31,52	060	30,31	060
6,0	35	75	6,0	44,97	061	44,97	061	46,96	061	46,96	061
7,0	22	60	7,0	41,01	070	39,12	070	43,20	070	41,66	070
8,0	25	63	8,0	46,96	080	45,08	080	49,71	080	47,83	080
8,0	40	100	8,0	62,39	081	62,39	081	65,24	081	65,24	081
9,0	25	63	9,0	59,52	090	57,21	090	62,39	090	59,74	090
10,0	30	72	10,0	63,48	100	60,84	100	65,92	100	63,60	100
12,0	32	83	12,0	89,72	120	86,41	120	93,13	120	89,17	120
14,0	32	83	14,0	142,30	140	134,50	140	152,10	140	147,80	140
16,0	36	92	16,0	194,00	160	185,20	160	208,30	160	199,50	160
18,0	40	92	18,0	262,30	180	251,30	180	283,30	180	272,30	180
20,0	45	104	20,0	315,20	200	300,90	200	338,30	200	326,30	200

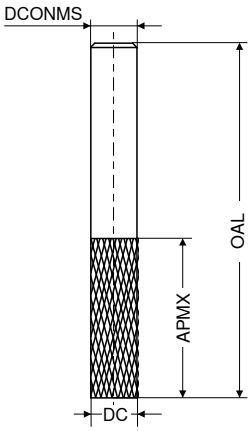
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

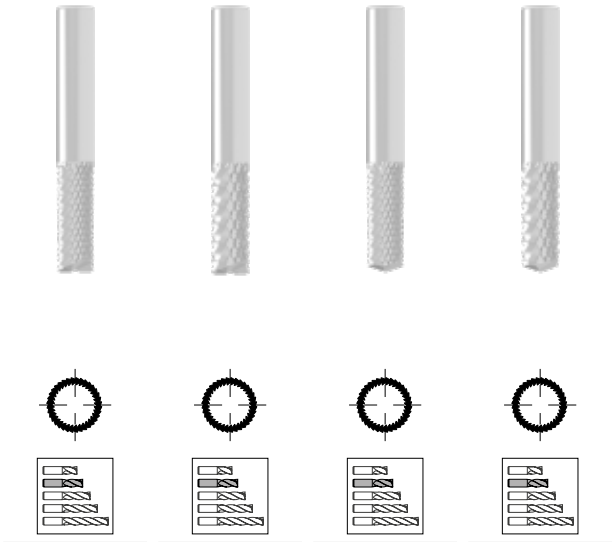
→ v_c/f_z Page 348

Cutter for plastics

- ▲ right hand cutting
- ▲ cross-pitched
- ▲ downward chip evacuation
- ▲ 50 985 ... and 50 987 ... = fine pitch
- ▲ 50 986 ... and 50 988 ... = medium pitch







DC h10	APMX	OAL	DCONMS h6	Factory standard HA V0 Article no. 50 985 ...		Factory standard HA V0 Article no. 50 986 ...		Factory standard HA V0 Article no. 50 987 ...		Factory standard HA V0 Article no. 50 988 ...	
mm	mm	mm	mm	EUR		EUR		EUR		EUR	
2,0	7	40	2,0	18,18	020	18,96	020	18,18	020	18,96	020
2,0	7	50	6,0	33,51	021	33,51	021	33,51	021	33,51	021
3,0	10	40	3,0	18,18	030	18,96	030	18,18	030	18,96	030
3,0	12	50	6,0	33,51	031	33,51	031	33,51	031	33,51	031
3,5	12	40	3,5	20,06	035	20,94	035	20,06	035	20,94	035
4,0	15	40	4,0	21,83	040	23,04	040	21,83	040	23,04	040
4,0	20	50	6,0	33,51	041	33,51	041	33,51	041	33,51	041
4,5	15	50	4,5	25,36	045	26,68	045	25,36	045	26,68	045
5,0	16	50	5,0	29,10	050	30,31	050	29,10	050	30,31	050
5,0	25	75	6,0	49,05	051	49,05	051	49,05	051	49,05	051
6,0	18	50	6,0	33,51	060	32,29	060	33,51	060	32,29	060
6,0	35	75	6,0	49,05	061	49,05	061	49,05	061	49,05	061
7,0	22	60	7,0	46,06	070	44,53	070	46,06	070	44,53	070
8,0	25	63	8,0	52,69	080	50,59	080	52,69	080	50,59	080
8,0	40	100	8,0	68,44	081	68,44	081	68,44	081	68,44	081
9,0	25	63	9,0	65,24	090	62,71	090	65,24	090	62,71	090
10,0	30	72	10,0	68,78	100	65,92	100	68,78	100	65,92	100
12,0	32	83	12,0	96,66	120	92,47	120	96,66	120	92,47	120
14,0	32	83	14,0	155,50	140	149,90	140	155,50	140	149,90	140
16,0	36	92	16,0	213,80	160	201,80	160	213,80	160	201,80	160
18,0	40	92	18,0	287,70	180	275,60	180	287,70	180	275,60	180
20,0	45	104	20,0	346,10	200	330,60	200	346,10	200	330,60	200

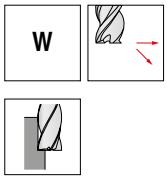
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

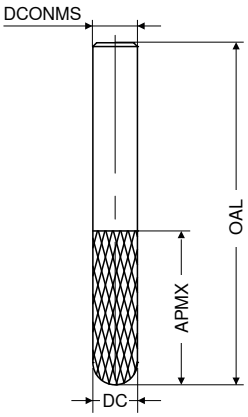
→ v_c/f_z Page 348

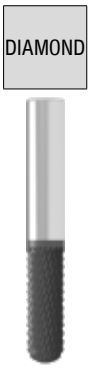
14

Ball nosed cutter for plastics

▲ right hand cutting
▲ cross-pitched









Factory standard

HA

V0

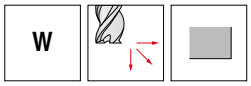
DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	Article no. 50 932 ... EUR	
2	7	40	2	63,60	020
2	7	50	6	130,00	022
3	10	40	3	63,60	030
3	12	50	6	130,00	032
4	15	40	4	92,03	040
4	20	50	6	130,00	042
5	16	50	5	117,90	050
5	25	75	6	149,90	052
6	18	50	6	122,30	060
6	35	75	6	143,30	062
8	25	63	8	153,20	080
8	40	100	8	201,80	082
10	30	72	10	222,60	100
12	32	83	12	282,20	120
16	36	92	16	567,60	160
20	40	104	20	668,90	200

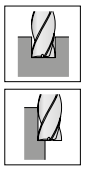
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

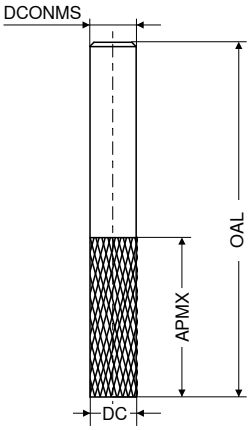
→ v_c/f_z Page 348

Cutter for plastics

▲ right hand cutting
▲ cross-pitched













Factory standard



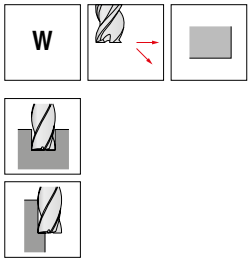
DC h10	APMX	OAL	DCONMS h6	V0 Article no. 50 937 ...	
mm	mm	mm	mm	EUR	
5	16	60	6	136,80	050
5	28	75	6	168,60	052
6	20	60	6	151,00	060
6	35	75	6	168,60	062
8	22	63	8	186,30	080
8	40	100	8	226,00	082
10	25	72	10	237,00	100
10	50	100	10	284,30	102
12	30	83	12	295,40	120
12	50	100	12	348,30	122
16	35	92	16	522,40	160
16	60	125	16	637,10	162

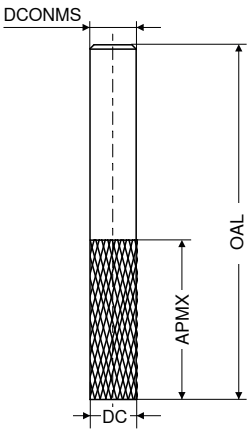
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 348

14

Cutter for honeycomb materials











Factory standard



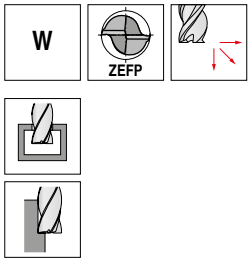
DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	V0 Article no. 50 936 ... EUR	
6	16	50	6	75,83	006
8	19	63	8	111,30	008
10	22	72	10	141,00	010
12	26	83	12	192,80	012
14	17	100	12	228,10	014
16	17	100	12	347,20	016
20	17	100	12	476,10	020
24	10	100	12	564,30	024
24	17	100	12	609,40	025
44	17	100	12	1.118,00	044 1)

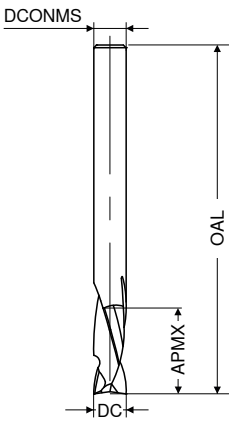
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) vertical plunging not possible

→ v_c/f_z Page 348

Right and left hand helix cutter for fibre re-inforced plastics









Factory standard

HA

V0

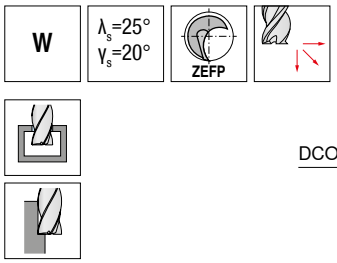
DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 938 ... EUR	
2	6	40	6	2	126,80	**020**
3	12	40	3	2	61,71	**030**
3	12	50	6	2	126,80	**032**
4	14	40	4	2	70,21	**040**
5	16	50	5	2	88,07	**050**
6	18	50	6	2	107,20	**060**
8	20	63	8	2	130,00	**080**
10	25	72	10	2	155,50	**100**
12	30	83	12	2	226,00	**120**

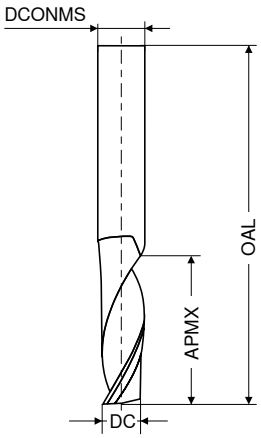
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

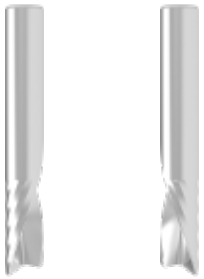
→ v_c/f_z Page 348

Single flute cutter

▲ with polished chip flutes









Right-hand helix
right-hand cutting



Left-hand helix
right-hand cutting

Factory standard

HA



Factory standard

HA



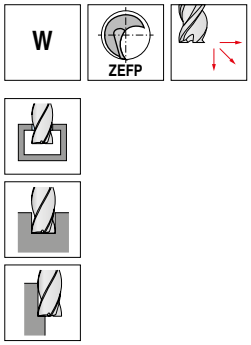
DC h10	APMX	OAL	DCONMS h6	ZEFP	V0 Article no. 50 610 ...		V0 Article no. 50 611 ...	
mm	mm	mm	mm		EUR		EUR	
1,5	6	40	3,0	1	26,78	015	26,78	015
2,0	6	40	3,0	1	26,78	019	26,78	019
2,0	10	40	2,0	1	16,65	020	16,65	020
2,0	10	60	6,0	1	39,56	022	39,56	022
2,0	12	60	6,0	1	40,66	024	40,66	024
2,5	6	40	2,5	1	26,78	025	26,78	025
3,0	12	40	3,0	1	17,86	030	17,86	030
3,0	10	40	6,0	1	38,79	032	38,79	032
3,0	12	60	6,0	1	39,56	034	39,56	034
3,0	15	60	6,0	1	39,56	036	39,56	036
4,0	15	40	4,0	1	21,60	040	21,60	040
4,0	15	60	6,0	1	39,56	042	39,56	042
4,0	20	75	6,0	1	64,03	044	64,03	044
5,0	16	50	5,0	1	27,66	050	27,66	050
5,0	16	60	6,0	1	39,56	052	39,56	052
5,0	28	75	6,0	1	71,75	054	71,75	054
6,0	20	60	6,0	1	31,96	060	31,96	060
6,0	30	60	6,0	1	38,79	062	38,79	062
6,0	35	75	6,0	1	58,08	064	58,08	064
8,0	22	63	8,0	1	51,58	080	51,58	080
8,0	40	100	8,0	1	93,13	084	93,13	084
10,0	25	72	10,0	1	77,59	100	77,59	100
10,0	55	100	10,0	1	155,50	105	155,50	105
12,0	30	83	12,0	1	102,90	120	102,90	120
14,0	30	83	14,0	1	153,20	140	153,20	140
16,0	35	92	16,0	1	218,30	160	218,30	160
18,0	35	92	18,0	1	260,10	180	260,10	180
20,0	40	104	20,0	1	293,20	200	293,20	200

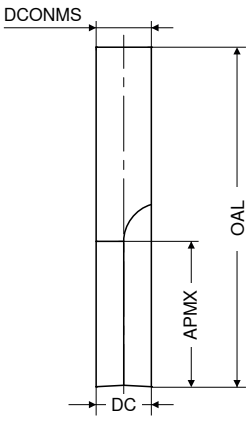
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 348

Cutter for plastics

▲ with polished flutes









Factory standard



DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	V0 Article no. 50 946 ... EUR	
1,5	6	40	3	1	32,96	015
2,0	6	40	3	1	32,96	020
2,0	10	40	2	1	23,70	022
2,0	10	60	6	1	47,94	024
2,0	12	60	6	1	49,38	026
3,0	12	40	3	1	24,91	030
3,0	12	60	6	1	47,94	032
3,0	15	60	6	1	47,94	034
4,0	15	60	6	1	47,94	040
4,0	20	75	6	1	72,63	042
5,0	16	60	6	1	47,94	050
5,0	28	75	6	1	80,46	052
6,0	20	60	6	1	41,77	060
6,0	30	60	6	1	47,51	062
6,0	35	75	6	1	66,89	064
8,0	22	63	8	1	64,92	080
8,0	40	100	8	1	104,30	082
10,0	25	72	10	1	96,54	100
10,0	55	100	10	1	169,70	102
12,0	30	83	12	1	125,70	120

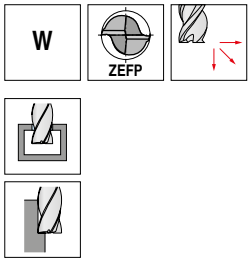
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

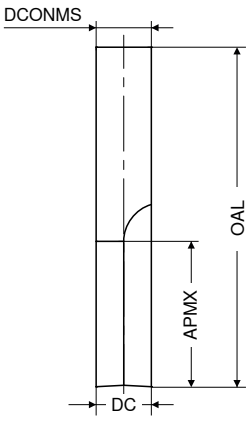
→ v_c/f_z Page 348

14

Cutter for plastics

▲ with polished flutes









Factory standard

HA

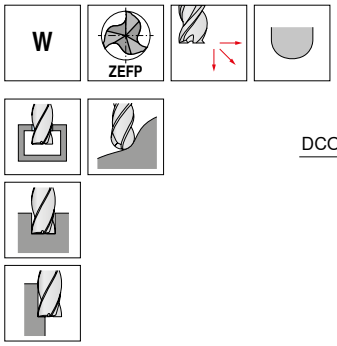
DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	V0 Article no. 50 948 ... EUR	
2	6	40	6	2	50,14	020
3	12	40	3	2	28,88	030
3	12	50	6	2	50,14	031
4	14	40	6	2	50,14	040
5	16	50	5	2	37,80	050
6	18	50	6	2	45,41	060
8	20	63	8	2	65,58	080
10	25	72	10	2	85,64	100
12	30	83	12	2	113,60	120

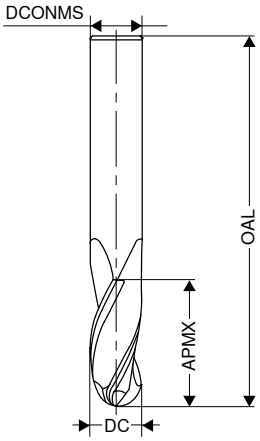
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 348

Ball nosed cutter for plastics

- with polished flutes
- irregular pitch





Ti40





DIN 6527 L

HA

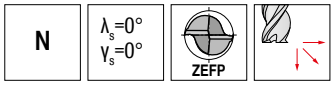
V0

DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 947 ...	EUR
3	10	57	6	3	030	68,78
4	13	57	6	3	040	68,78
5	15	57	6	3	050	68,78
6	18	57	6	3	060	58,74
7	20	63	8	3	070	91,04
8	20	63	8	3	080	80,46
9	22	72	10	3	090	123,50
10	25	72	10	3	100	108,70
12	30	83	12	3	120	141,00
14	30	83	14	3	140	215,00
16	35	92	16	3	160	287,70
18	35	92	18	3	180	343,80
20	45	104	20	3	200	405,60

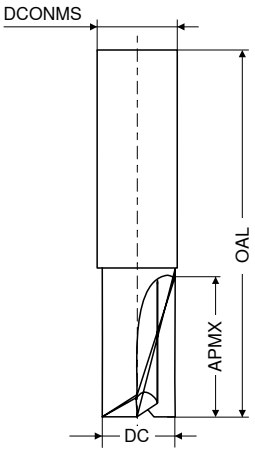
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 348

Slot milling cutter











Factory standard



V1

DC e8 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 168 ... EUR	
2	8	50	3	2	17,52	020
3	12	50	3	2	17,52	030
4	13	60	4	2	18,18	040
5	14	60	5	2	22,38	050
6	16	58	6	2	25,57	060
7	20	65	8	2	33,51	070
8	20	65	8	2	34,16	080
9	22	70	10	2	45,51	090
10	22	70	10	2	54,23	100
12	25	70	12	2	72,08	120

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 350–353

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting Data – MonsterMill – End Mills – SCR, short – long

Index	Emulsion	Compressed air	MMS	short	long	Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			short	long	Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm			Ø DC = 8,0–9,5 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm		
1.1	105–140	190–240		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.2	105–140	200–250		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.3	90–120	160–210		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.4	80–115	140–190		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.5	90–120	150–200		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.6	90–120	140–190		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.7	80–115	140–190		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.8	70–100	120–170		1,0	1,0	0,025	0,019	0,014	0,035	0,027	0,020	1,0	1,0*	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
1.9	70–100	120–170		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.10	70–100	140–190		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.11	70–100	120–170		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.12	70–100	140–190		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.13	70–100	90–150		1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
1.14	50–80	70–120		1,0	1,0	0,017	0,013	0,010	0,024	0,018	0,013	1,0	1,0*	0,034	0,025	0,017	0,046	0,034	0,023	0,06	0,05	0,03
1.15	70–100	130–180		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.16	80–120	110–160		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
2.1	90–130			1,0	1,0	0,025	0,019	0,014	0,035	0,027	0,020	1,0	1,0*	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
2.2	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.3	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.4	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.5	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.6	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.7	40–60			1,0	1,0	0,017	0,013	0,010	0,024	0,018	0,013	1,0	1,0*	0,035	0,025	0,017	0,046	0,034	0,023	0,06	0,05	0,03
3.1		200–240		1,0	1,0	0,040	0,031	0,022	0,055	0,043	0,031	1,0	1,0*	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.2		180–220		1,0	1,0	0,040	0,031	0,022	0,055	0,043	0,031	1,0	1,0*	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.3		200–240		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.4		180–220		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.5		160–200		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.6		140–180		1,0	1,0	0,028	0,022	0,016	0,040	0,031	0,022	1,0	1,0*	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.7		160–200		1,0	1,0	0,028	0,022	0,016	0,040	0,031	0,022	1,0	1,0*	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.8		140–180		1,0	1,0	0,028	0,022	0,016	0,040	0,031	0,022	1,0	1,0*	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
4.1																						
4.2																						
4.3																						
4.4																						
4.5																						
4.6	140–160	230–280		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.7	120–140	200–300		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.8	110–140	140–180		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.9	90–130	120–160		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.10	80–120	100–140		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.11	150–200	280–350		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.12	140–180	260–300		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.13																						
4.14	180–280	300–400		1,0	1,0	0,067	0,052	0,038	0,094	0,073	0,053	1,0	1,0*	0,135	0,101	0,068	0,180	0,134	0,090	0,24	0,18	0,12
4.15																						
4.16																						
4.17																						
4.18	60–90	80–120		0,5	0,5	0,027	0,021	0,015	0,038	0,029	0,021	1,0	1,0	0,054	0,040	0,027	0,072	0,054	0,036	0,10	0,07	0,05
4.19	40–60	60–80		0,5	0,5	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0	0,045	0,018	0,023	0,060	0,045	0,030	0,08	0,06	0,04
5.1	30			0,5	0,5	0,022	0,017	0,012	0,030	0,023	0,017	0,5	0,5	0,043	0,032	0,022	0,058	0,043	0,029	0,08	0,06	0,04
5.2	30			0,5	0,5	0,020	0,016	0,011	0,028	0,022	0,016	0,5	0,5	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
5.3	30			0,5	0,5	0,018	0,014	0,010	0,025	0,019	0,014	0,5	0,5	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
5.4	30			0,5	0,5	0,016	0,012	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.5	30			0,5	0,5	0,016	0,012	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.6	30			0,5	0,5	0,011	0,009	0,006	0,016	0,012	0,009	0,5	0,5	0,023	0,017	0,011	0,030	0,022	0,015	0,04	0,03	0,02
5.7	45			0,5	0,5	0,016	0,007	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.8	30			0,5	0,5	0,016	0,007	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.9	80–160			0,5	0,5	0,025	0,019	0,014	0,035	0,027	0,020	0,5	0,5	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
5.10	80–140			0,5	0,5	0,025	0,019	0,014	0,035	0,027	0,019	0,5	0,5	0,050	0,037	0,025	0,066	0,049	0,033	0,09	0,07	0,04
5.11	50–100			0,5	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,5	0,5	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
6.1		120–160		0,5	0,5	0,020	0,016	0,011	0,028	0,022	0,016	0,5	0,5	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
6.2		80–120		0,3	0,3	0,018	0,014	0,010	0,025	0,019	0,014	0,3	0,3	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
6.3		60–100		0,15	0,15	0,016	0,012	0,009	0,022	0,017	0,012	0,15	0,15	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
6.4																						
6.5																						

* = With an a_p of 1.5xD, the feed rate per tooth f_z should be multiplied by 0.8

SCR ball nosed cutters at full slot, reduce f_z by 25 %!

Plunging angle for ramping and helical milling: No. of teeth 4 = 4° / No. of teeth 6 = 1°

Index	Ø DC = 10,0–11,5 mm			Ø DC = 12,0 mm			Ø DC = 14,0–15,5 mm			Ø DC = 16,0–17,0 mm			Ø DC = 18,0–19,5 mm			Ø DC = 20,0 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.2	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.3	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.8	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	○	●	○
1.9	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.10	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.12	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.13	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	○	●	○
1.14	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	○	●	○
1.15	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.16	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
2.1	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
2.2	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.3	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.4	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.5	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.6	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.7	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
3.1	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,21	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16		●	
3.2	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,21	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16		●	
3.3	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14		●	
3.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14		●	
3.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14		●	
3.6	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,15	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11		●	
3.7	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,15	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11		●	
3.8	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,15	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11		●	
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.8	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.9	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.10	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.11	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.12	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.13																					
4.14	0,30	0,22	0,15	0,33	0,25	0,17	0,33	0,26	0,18	0,36	0,27	0,21	0,38	0,31	0,24	0,43	0,35	0,27	●		○
4.15																					
4.16																					
4.17																					
4.18	0,12	0,09	0,06	0,10	0,10	0,07	0,13	0,10	0,07	0,14	0,11	0,08	0,15	0,12	0,10	0,17	0,14	0,11	●		○
4.19	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		○
5.1	0,10	0,07	0,05	0,11	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,14	0,11	0,09	●		
5.2	0,09	0,07	0,05	0,10	0,04	0,05	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08	●		
5.3	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,10	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07	●		
5.4	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.5	0,07	0,05	0,04	0,08	0,03	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.6	0,05	0,04	0,03	0,06	0,04	0,03	0,06	0,04	0,03	0,06	0,05	0,04	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.7	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.8	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.9	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
5.10	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,11	0,09	0,16	0,13	0,10	●		
5.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		
6.1	0,09	0,07	0,05	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08		●	
6.2	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,10	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07		●	
6.3	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06		●	
6.4																					
6.5																					

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

14

Cutting Data – MonsterMill – End Mills – SCR, extra long

	Emulsion	Compressed air	MMS	extra long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	90–130	130–180		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.2	90–130	130–180		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.3	70–100	110–160		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.4	70–100	90–140		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.5	70–100	110–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.6	70–100	110–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.7	70–100	90–140		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.8	50–80	70–120		1,0*	0,5	0,025	0,019	0,014	0,035	0,027	0,020	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
1.9	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.10	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.11	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.12	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.13	50–80	70–120		1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
1.14	40–70	50–80		1,0*	0,5	0,017	0,013	0,010	0,024	0,018	0,013	0,034	0,025	0,017	0,046	0,034	0,023	0,06	0,05	0,03
1.15	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.16	60–90	90–140		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
2.1	60–100			1,0*	0,5	0,025	0,019	0,014	0,035	0,027	0,020	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
2.2	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.3	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.4	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.5	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.6	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.7	30–50			1,0*	0,5	0,017	0,013	0,010	0,024	0,018	0,013	0,034	0,025	0,017	0,047	0,034	0,023	0,06	0,05	0,03
3.1		160–200		1,0*	0,5	0,040	0,031	0,022	0,055	0,043	0,031	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.2		120–160		1,0*	0,5	0,040	0,031	0,022	0,055	0,043	0,031	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.3		160–200		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.4		120–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.5		120–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.6		100–140		1,0*	0,5	0,028	0,022	0,016	0,040	0,031	0,022	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.7		120–160		1,0*	0,5	0,028	0,022	0,016	0,040	0,031	0,022	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.8		100–140		1,0*	0,5	0,028	0,022	0,016	0,040	0,031	0,022	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	100–130	220–240		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.7	90–110	180–220		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.8	80–110	140–180		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.9	60–90	120–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.10	60–90	100–140		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.11	110–150	280–320		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.12	100–140	260–300		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.13																				
4.14	120–180	300–400		1,0*	0,5	0,067	0,052	0,038	0,094	0,073	0,053	0,135	0,101	0,068	0,180	0,134	0,090	0,24	0,18	0,12
4.15																				
4.16																				
4.17																				
4.18	40–75	80–120		0,5*	0,25	0,027	0,021	0,015	0,038	0,029	0,021	0,054	0,040	0,027	0,072	0,054	0,036	0,10	0,07	0,05
4.19	30–50	60–80		0,5*	0,25	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,018	0,023	0,060	0,045	0,030	0,08	0,06	0,04
5.1	30			0,5*	0,25	0,022	0,017	0,012	0,030	0,023	0,017	0,043	0,032	0,022	0,058	0,043	0,029	0,08	0,06	0,04
5.2	30			0,5*	0,25	0,020	0,016	0,011	0,028	0,022	0,016	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
5.3	25			0,5*	0,25	0,018	0,014	0,010	0,025	0,019	0,014	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
5.4	25			0,5*	0,25	0,016	0,012	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.5	25			0,5*	0,25	0,016	0,012	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.6	25			0,5*	0,25	0,011	0,009	0,006	0,016	0,012	0,009	0,023	0,017	0,011	0,030	0,022	0,015	0,04	0,03	0,02
5.7	45			0,5*	0,25	0,016	0,007	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.8	25			0,5*	0,25	0,016	0,007	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.9	35–65			0,5*	0,25	0,025	0,019	0,014	0,035	0,027	0,020	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
5.10	30–55			0,5*	0,25	0,025	0,019	0,014	0,035	0,027	0,019	0,050	0,037	0,025	0,066	0,049	0,033	0,09	0,07	0,04
5.11	30–55			0,5*	0,25	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
6.1		80–120		0,5*	0,5	0,020	0,016	0,011	0,028	0,022	0,016	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
6.2		60–100		0,5*	0,3	0,018	0,014	0,010	0,025	0,019	0,014	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
6.3		50–90		0,5*	0,15	0,016	0,012	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
6.4																				
6.5																				

* = Trimming and trochoidal slot milling

Plunging angle for ramping and helical milling: No. of teeth 4 = 4° / No. of teeth 6 = 1°

	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.2	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.3	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.8	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,12	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	○	●	○
1.9	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.10	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.12	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.13	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	○	●	○
1.14	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	○	●	○
1.15	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.16	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
2.1	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,12	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
2.2	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.3	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.4	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.5	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.6	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.7	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
3.1	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,20	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16	○	●	○
3.2	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,20	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16	○	●	○
3.3	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
3.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
3.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
3.6	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,14	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11	○	●	○
3.7	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,14	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11	○	●	○
3.8	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,14	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11	○	●	○
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.8	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.9	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.10	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.11	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.12	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.13																					
4.14	0,30	0,22	0,15	0,33	0,25	0,17	0,33	0,26	0,18	0,33	0,27	0,21	0,38	0,31	0,24	0,43	0,35	0,27	●		○
4.15																					
4.16																					
4.17																					
4.18	0,12	0,09	0,06	0,10	0,10	0,07	0,13	0,10	0,07	0,13	0,11	0,08	0,15	0,12	0,10	0,17	0,14	0,11	●		○
4.19	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		○
5.1	0,10	0,07	0,05	0,11	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,14	0,11	0,09	●		
5.2	0,09	0,07	0,05	0,10	0,04	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08	●		
5.3	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,09	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07	●		
5.4	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.5	0,07	0,05	0,04	0,08	0,03	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.6	0,05	0,04	0,03	0,06	0,04	0,03	0,06	0,04	0,03	0,06	0,05	0,04	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.7	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.8	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.9	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,12	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
5.10	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,09	0,07	0,12	0,10	0,08	0,14	0,11	0,09	0,16	0,13	0,10	●		
5.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		
6.1	0,09	0,07	0,05	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08		●	
6.2	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,09	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07		●	
6.3	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06		●	
6.4																					
6.5																					

14

Cutting data – MonsterMill – Torus End Mills – SCR, long

		long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	170–200	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,08	0,06	0,04
1.2	170–200	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,08	0,06	0,04
1.3	150–180	1,0	0,019	0,017	0,012	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.4	150–180	1,0	0,019	0,017	0,012	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.5	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.6	140–170	1,0	0,019	0,017	0,012	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.7	150–180	1,0	0,024	0,021	0,015	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.8	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.9	150–180	1,0	0,024	0,021	0,015	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.10	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.11	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.12	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.13	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.14	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.15	150–180	1,0	0,024	0,021	0,015	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.16	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
2.1																	
2.2																	
2.3																	
2.4																	
2.5																	
2.6																	
2.7																	
3.1	170–200	1,0	0,028	0,025	0,018	0,043	0,033	0,024	0,056	0,042	0,028	0,072	0,054	0,036	0,10	0,07	0,05
3.2	170–200	1,0	0,028	0,025	0,018	0,043	0,033	0,024	0,056	0,042	0,028	0,072	0,054	0,036	0,10	0,07	0,05
3.3	150–180	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,046	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
3.4	150–180	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,046	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
3.5	100–120	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
3.6	80–100	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
3.7	100–120	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
3.8	80–100	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
4.10																	
4.11																	
4.12																	
4.13																	
4.14																	
4.15																	
4.16																	
4.17																	
4.18	80–100	0,5	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
4.19																	
5.1																	
5.2																	
5.3																	
5.4																	
5.5																	
5.6																	
5.7																	
5.8																	
5.9																	
5.10																	
5.11																	
6.1	100–120	0,5	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
6.2	80–100	0,3	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
6.3	60–70	0,15	0,009	0,008	0,006	0,014	0,011	0,008	0,020	0,015	0,010	0,024	0,018	0,012	0,03	0,02	0,02
6.4																	
6.5																	

	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			
Index	f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.2	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.3	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.4	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.5	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.6	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.7	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.8	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.9	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.10	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.11	0,06	0,05	0,03	0,00	0,00	0,00	0,08	0,06	0,05	○	●	
1.12	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.13	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.14	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.15	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.16	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.2	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.5	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.6	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.7	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.8	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11												
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18	0,06	0,05	0,03	0,05	0,05	0,04	0,08	0,06	0,05	○		○
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.2	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.3	0,04	0,03	0,02	0,05	0,04	0,02	0,05	0,04	0,03		●	
6.4												
6.5												

Cutting data – MonsterMill – Torus End Mills – SCR, extra long

				Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			● 1st choice		○ suitable
		extra long		a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	v_c m/min	$a_{p\,max}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm					
1.1	120–140	1,0*	0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.2	120–140	1,0*	0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.3	100–130	1,0*	0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.4	100–130	1,0*	0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.5	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.6	100–120	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.7	100–130	1,0*	0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.8	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.9	100–130	1,0*	0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.10	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.11	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,00	0,00	0,00	0,08	0,06	0,05	○	●	
1.12	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.13	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.14	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.15	100–130	1,0*	0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.16	90–110	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
2.1																		
2.2																		
2.3																		
2.4																		
2.5																		
2.6																		
2.7																		
3.1	120–140	1,0*	0,5	0,10	0,07	0,05	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.2	120–140	1,0*	0,5	0,10	0,07	0,05	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.3	100–130	1,0*	0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.4	100–130	1,0*	0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.5	70–85	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.6	60–70	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.7	70–85	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.8	60–70	1,0*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6																		
4.7																		
4.8																		
4.9																		
4.10																		
4.11																		
4.12																		
4.13																		
4.14																		
4.15																		
4.16																		
4.17																		
4.18	60–70	0,5*	0,25	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	●		○
4.19																		
5.1																		
5.2																		
5.3																		
5.4																		
5.5																		
5.6																		
5.7																		
5.8																		
5.9																		
5.10																		
5.11																		
6.1	70–85	0,5*	0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.2	60–70	0,5*	0,3	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.3	50–60	0,5*	0,15	0,03	0,02	0,02	0,04	0,03	0,02	0,05	0,04	0,02	0,05	0,04	0,03		●	
6.4																		
6.5																		

* = Trimming and trochoidal slot milling

Cutting data – MonsterMill – Torus End Mills – SCR, extra long, HSC machining

● 1st choice ○ suitable

Index	v_c m/min	a_p x DC	a_e x DC	Ø DC = 3 mm f_z mm	Ø DC = 4 mm f_z mm	Ø DC = 5 mm f_z mm	Ø DC = 6 mm f_z mm	Ø DC = 8 mm f_z mm	Ø DC = 10 mm f_z mm	Ø DC = 12 mm f_z mm	Ø DC = 16 mm f_z mm	Emulsion	Compressed air	MMS
1.1	230–250	0,05	0,6	0,110	0,152	0,190	0,228	0,30	0,38	0,46	0,60	○	●	
1.2	230–250	0,05	0,6	0,110	0,152	0,190	0,228	0,30	0,38	0,46	0,60	○	●	
1.3	200–220	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.4	200–220	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.5	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.6	190–210	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
1.7	200–220	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.8	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.9	200–220	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.10	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.11	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.12	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.13	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.14	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.15	200–220	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.16	170–190	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
2.1														
2.2														
2.3														
2.4														
2.5														
2.6														
2.7														
3.1	230–250	0,05	0,6	0,120	0,160	0,200	0,240	0,32	0,40	0,48	0,64	○	●	
3.2	230–250	0,05	0,6	0,120	0,160	0,200	0,240	0,32	0,40	0,48	0,64	○	●	
3.3	200–220	0,04	0,5	0,096	0,130	0,160	0,192	0,26	0,32	0,38	0,51	○	●	
3.4	200–220	0,04	0,5	0,096	0,130	0,160	0,192	0,26	0,32	0,38	0,51	○	●	
3.5	130–150	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
3.6	100–120	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
3.7	130–150	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
3.8	100–120	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11														
4.12														
4.13														
4.14														
4.15														
4.16														
4.17														
4.18	100–120	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	●		○
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1	130–150	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38		●	
6.2	100–120	0,03	0,3	0,060	0,080	0,100	0,120	0,16	0,20	0,24	0,32		●	
6.3	90–110	0,02	0,3	0,048	0,064	0,080	0,096	0,13	0,16	0,19	0,26		●	
6.4	80–100	0,02	0,2	0,024	0,056	0,070	0,084	0,11	0,14	0,17	0,22		●	
6.5	60–80	0,02	0,2	0,036	0,048	0,060	0,072	0,10	0,12	0,14	0,19		●	

Cutting data standard values – MonsterMill – End mills – ICR, short

	Emulsion	Compressed air	MMS	short	Ø DC = 1,5 mm			Ø DC = 2 mm			Ø DC = 2,5 mm			● 1st choice		○ suitable
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	v_c m/min			$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm					
1.1	130–180	150–200		0,25	0,020	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	○	●	○
1.2	130–180	150–200		0,25	0,012	0,013	0,010	0,020	0,019	0,014	0,029	0,024	0,018	○	●	○
1.3	140–160	130–180		0,25	0,014	0,013	0,010	0,020	0,019	0,014	0,029	0,024	0,018	○	●	○
1.4	120–140	110–160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.5	140–160	130–180		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.6	140–160	130–180		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.7	120–160	110–160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.8	80–120	90–140		0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	○	●	○
1.9	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.10	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.11	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.12	80–120	90–140		0,25	0,011	0,010	0,008	0,013	0,012	0,009	0,020	0,017	0,012	○	●	○
1.13	80–120	90–140		0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	○	●	○
1.14	60–100	50–100		0,25	0,009	0,008	0,006	0,011	0,010	0,008	0,016	0,013	0,010	○	●	○
1.15	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.16	100–140	110–160		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
2.1	**100–140**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
2.2	**100–120**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.3	**80 –100**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.4	**80 –100**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.5	**100–120**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.6	**100–120**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.7	**40–60**			0,25	0,009	0,008	0,006	0,011	0,010	0,008	0,016	0,013	0,010	●		
3.1		180–220		0,25	0,020	0,019	0,014	0,025	0,024	0,018	0,036	0,030	0,022		●	
3.2		160–200		0,25	0,020	0,019	0,014	0,025	0,024	0,018	0,036	0,030	0,022		●	
3.3		180 –220		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019		●	
3.4		160 –200		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019		●	
3.5		140 –180		0,25	0,014	0,013	0,010	0,022	0,020	0,015	0,028	0,023	0,017		●	
3.6		120–160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016		●	
3.7		140 –180		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016		●	
3.8		120 –160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016		●	
4.1																
4.2																
4.3																
4.4																
4.5																
4.6	220–240	220–240		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.7	220–240	220–240		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.8	140–160	140–160		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.9	120–140	120–140		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.10	100–120	100–120		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.11	280–300	280–300		0,25	0,007	0,007	0,005	0,020	0,019	0,014	0,029	0,024	0,018	●		○
4.12	280–300	280–300		0,25	0,014	0,013	0,010	0,020	0,019	0,014	0,029	0,024	0,018	●		○
4.13																
4.14	300–340	300–340		0,25	0,029	0,027	0,020	0,043	0,040	0,030	0,051	0,043	0,032	●		○
4.15																
4.16																
4.17																
4.18	80–120	80–120		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	●		
4.19	60–80	60–80		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.1	**30**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
5.2	**30**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
5.3	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.4	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.5	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.6	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.7	**45**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,012	0,012	●		
5.8	**30**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,012	0,012	●		
5.9	**80–100**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
5.10	**60–80**			0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	●		
5.11	**60–80**			0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	●		
6.1		80–100		0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015		●	
6.2		80–120		0,20	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013		●	
6.3		60–80		0,15	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012		●	
6.4																
6.5																

Plunging angle for ramping and helical milling: No. of teeth 3 = 5°/No. of teeth 4 = 4°/No. of teeth 5 = 3°

Cutting Data – MonsterMill – End Mills – ICR, short – long

	Emulsion	Compressed air	MMS	short	long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			● 1st choice		○ suitable
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			
Index	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	130–180	150–200		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	○	●	○
1.2	130–180	150–200		1,0	1,0*	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	○	●	○
1.3	140–160	130–180		1,0	1,0*	0,0382	0,0295	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	○	●	○
1.4	120–140	110–160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.5	140–160	130–180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.6	140–160	130–180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.7	120–160	110–160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.8	80–120	90–140		1,0	1,0*	0,031	0,024	0,018	0,063	0,049	0,035	0,052	0,040	0,029	0,061	0,047	0,034	○	●	○
1.9	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.10	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.11	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.12	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.13	80–120	90–140		1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	○	●	○
1.14	60–100	50–100		1,0	1,0*	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,040	0,031	0,023	○	●	○
1.15	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.16	100–140	110–160		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
2.1	**100–140**			1,0	1,0*	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
2.2	**100–120**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.3	**80 –100**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.4	**80 –100**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.5	**100–120**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.6	**100–120**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.7	**40–60**			1,0	1,0*	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,038	0,029	0,021	●		
3.1		180–220		1,0	1,0*	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053		●	
3.2		160–200		1,0	1,0*	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053		●	
3.3		180 –220		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045		●	
3.4		160 –200		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045		●	
3.5		140 –180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
3.6		120–160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
3.7		140 –180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
3.8		120 –160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	220–240	220–240		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.7	220–240	220–240		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.8	140–160	140–160		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.9	120–140	120–140		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.10	100–120	100–120		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.11	280–300	280–300		1,0	1,0*	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,741	0,572	0,413	●		○
4.12	280–300	280–300		1,0	1,0*	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	●		○
4.13																				
4.14	300–340	300–340		1,0	1,0*	0,058	0,045	0,033	0,108	0,083	0,060	0,135	0,104	0,075	0,162	0,125	0,090	●		○
4.15																				
4.16																				
4.17																				
4.18	80–120	80–120		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	●		
4.19	60–80	60–80		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,021	0,025	0,054	0,042	0,030	●		
5.1	**30**			0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
5.2	**30**			0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
5.3	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.4	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.5	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.6	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.7	**45**			0,5	0,5	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
5.8	**30**			0,5	0,5	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
5.9	**80–100**			0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
5.10	**60–80**			0,5	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	●		
5.11	**60–80**			0,5	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	●		
6.1		80–100		0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034		●	
6.2		80–120		0,3	0,3	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030		●	
6.3		60–80		0,15	0,15	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026		●	
6.4																				
6.5																				

* = with an a_p of 1.5 x DC the f_z should be multiplied by 0.8

Plunging angle for ramping and helical milling: No. of teeth 3 = 5°/No. of teeth 4 = 4°/No. of teeth 5 = 3°

14

Cutting Data – MonsterMill – End Mills – ICR, short – long

	Emulsion	Compressed air	MMS	short	long	Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm		
1.1	130–180	150–200		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,18	0,14	0,10
1.2	130–180	150–200		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
1.3	140–160	130–180		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
1.4	120–140	110–160		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.5	140–160	130–180		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.6	140–160	130–180		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.7	120–160	110–160		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.8	80–120	90–140		1,0	1,0*	0,08	0,06	0,05	0,11	0,09	0,06	0,12	0,09	0,07	0,14	0,11	0,08
1.9	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.10	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.11	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.12	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.13	80–120	90–140		1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
1.14	60–100	50–100		1,0	1,0*	0,05	0,04	0,03	0,07	0,05	0,04	0,11	0,08	0,06	0,09	0,07	0,05
1.15	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.16	100–140	110–160		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
2.1	**100–140**			1,0	1,0*	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
2.2	**100–120**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,09	0,06
2.3	**80 –100**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.4	**80 –100**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.5	**100–120**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.6	**100–120**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.7	**40–60**			1,0	1,0*	0,05	0,04	0,03	0,07	0,05	0,04	0,08	0,06	0,05	0,09	0,07	0,05
3.1		180–220		1,0	1,0*	0,13	0,10	0,07	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12
3.2		160–200		1,0	1,0*	0,13	0,10	0,07	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12
3.3		180 –220		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,14	0,11	0,08	0,19	0,15	0,11
3.4		160 –200		1,0	1,0*	0,11	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,19	0,15	0,11
3.5		140 –180		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
3.6		120–160		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
3.7		140 –180		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
3.8		120 –160		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6	220–240	220–240		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.7	220–240	220–240		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.8	140–160	140–160		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.9	120–140	120–140		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.10	100–120	100–120		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.11	280–300	280–300		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
4.12	280–300	280–300		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
4.13																	
4.14	300–340	300–340		1,0	1,0*	0,22	0,17	0,12	0,27	0,21	0,15	0,32	0,25	0,18	0,38	0,29	0,21
4.15																	
4.16																	
4.17																	
4.18	80–120	80–120		1,0	1,0*	0,09	0,07	0,05	0,14	0,10	0,08	0,11	0,11	0,08	0,16	0,12	0,09
4.19	60–80	60–80		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
5.1	**30**			0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
5.2	**30**			0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,06	0,07	0,14	0,11	0,08
5.3	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
5.4	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
5.5	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,05	0,06	0,13	0,10	0,07
5.6	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,11	0,09	0,06
5.7	**45**			0,5	0,5	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
5.8	**30**			0,5	0,5	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
5.9	**80–100**			0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
5.10	**60–80**			0,5	0,5	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
5.11	**60–80**			0,5	0,5	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
6.1		80–100		0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
6.2		80–120		0,3	0,3	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
6.3		60–80		0,15	0,15	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
6.4																	
6.5																	

* = with an a_p of 1.5 x DC the f_z should be multiplied by 0.8

Plunging angle for ramping and helical milling: No. of teeth 3 = 5° / No. of teeth 4 = 4° / No. of teeth 5 = 3°

	Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			
Index	f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15	○	●	○
1.2	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.3	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.4	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.5	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.6	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.7	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.8	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	○	●	○
1.9	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.10	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.11	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.12	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.13	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	○	●	○
1.14	0,10	0,08	0,06	0,10	0,09	0,07	0,14	0,13	0,10	○	●	○
1.15	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.16	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
2.1	0,14	0,12	0,09	0,12	0,10	0,08	0,16	0,14	0,11	●		
2.2	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.3	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.4	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.5	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.6	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.7	0,10	0,08	0,06	0,10	0,09	0,07	0,11	0,09	0,08	●		
3.1	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.2	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.3	0,19	0,16	0,12	0,20	0,17	0,13	0,25	0,22	0,18		●	
3.4	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15		●	
3.5	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.6	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.7	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.8	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
4.1												
4.2												
4.3												
4.4												
4.5												
4.6	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.7	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.8	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.9	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.10	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.11	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.12	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.13												
4.14	0,38	0,31	0,24	0,41	0,35	0,27	0,43	0,38	0,30	●		○
4.15												
4.16												
4.17												
4.18	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
4.19	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.1	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.2	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.3	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.4	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.5	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.6	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.7	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.8	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.9	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.10	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
5.11	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
6.1	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11		●	
6.2	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10		●	
6.3	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09		●	
6.4												
6.5												

14

Cutting Data – MonsterMill – End Mills – ICR, extra long

Index	Emulsion	Compressed air	MMS	$a_{p\,max.}$ x DC		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	v_c m/min					f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	110–155	130–180		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
1.2	110–155	130–180		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	0,10	0,08	0,06
1.3	120–140	110–160		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	0,10	0,08	0,06
1.4	100–120	90–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.5	120–140	110–160		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.6	120–140	110–160		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.7	100–140	90–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.8	70–105	70–120		1	0,5	0,031	0,024	0,018	0,063	0,049	0,035	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
1.9	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.10	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.11	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.12	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.13	70–105	70–120		1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
1.14	55–85	50–80		1	0,5	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,040	0,031	0,023	0,05	0,04	0,03
1.15	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.16	85–120	90–140		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
2.1	**85–120**			1	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
2.2	**85–105**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.3	**70–90**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.4	**70–90**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.5	**85–105**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.6	**85–105**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.7	**35–55**			1	0,5	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,038	0,029	0,021	0,05	0,04	0,03
3.1		150–190		1	0,5	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053	0,13	0,10	0,07
3.2		140–170		1	0,5	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053	0,13	0,10	0,07
3.3		150–190		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
3.4		140–170		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
3.5		120–150		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
3.6		105–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
3.7		120–150		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
3.8		105–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	190–205	190–205		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.7	190–205	190–205		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.8	120–140	120–140		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.9	105–120	105–120		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.10	85–105	85–105		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.11	240–260	240–260		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,741	0,572	0,413	0,10	0,08	0,06
4.12	240–260	240–260		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	0,10	0,08	0,06
4.13																				
4.14	250–290	250–290		1	0,5	0,058	0,045	0,033	0,108	0,083	0,060	0,135	0,104	0,075	0,162	0,125	0,090	0,22	0,17	0,12
4.15																				
4.16																				
4.17																				
4.18	70–105	70–105		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
4.19	50–70	50–70		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,021	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.1	**27**			0,5	0,25	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
5.2	**27**			0,5	0,25	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
5.3	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.4	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.5	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.6	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.7	**38**			0,5	0,25	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
5.8	**27**			0,5	0,25	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
5.9	**70–85**			0,5	0,25	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
5.10	**50–70**			0,5	0,25	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
5.11	**50–70**			0,5	0,25	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
6.1		70–85		0,5*		0,031	0,024		0,040	0,031		0,052	0,040		0,061	0,047		0,08	0,06	
6.2		70–105		0,5*		0,027	0,021		0,036	0,028		0,045	0,035		0,054	0,042		0,07	0,06	
6.3		50–70		0,5*		0,025	0,019		0,031	0,024		0,040	0,031		0,047	0,036		0,06	0,05	
6.4																				
6.5																				

* = Edge Milling and Trochoidal Milling

Plunging angle for ramping and helical milling: No. of teeth 3 = 5 ° / No. of teeth 4 = 4° / No. of teeth 5 = 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,14	0,10	0,08	0,16	0,13	0,09	0,18	0,14	0,10	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15	○	●	○
1.2	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.3	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.4	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.5	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.6	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.7	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.8	0,11	0,09	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	○	●	○
1.9	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.10	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.11	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.12	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.13	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	○	●	○
1.14	0,07	0,05	0,04	0,11	0,08	0,06	0,09	0,07	0,05	0,10	0,08	0,06	0,10	0,09	0,07	0,14	0,13	0,10	○	●	○
1.15	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.16	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
2.1	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,14	0,12	0,09	0,12	0,10	0,08	0,16	0,14	0,11	●		
2.2	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.3	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.4	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.5	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.6	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.7	0,07	0,05	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,10	0,09	0,07	0,11	0,09	0,08	●		
3.1	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.2	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.3	0,14	0,10	0,08	0,14	0,11	0,08	0,19	0,15	0,11	0,19	0,16	0,12	0,20	0,17	0,13	0,25	0,22	0,18		●	
3.4	0,12	0,09	0,07	0,14	0,11	0,08	0,19	0,15	0,11	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15		●	
3.5	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.6	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.7	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.8	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.7	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.8	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.9	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.10	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.11	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.12	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.13																					
4.14	0,27	0,21	0,15	0,32	0,25	0,18	0,38	0,29	0,21	0,38	0,31	0,24	0,41	0,35	0,27	0,43	0,38	0,30	●		○
4.15																					
4.16																					
4.17																					
4.18	0,14	0,10	0,08	0,11	0,11	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
4.19	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.1	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.2	0,10	0,08	0,06	0,12	0,06	0,07	0,14	0,11	0,08	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.3	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.4	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.5	0,09	0,07	0,05	0,11	0,05	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.6	0,09	0,07	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.7	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.8	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.9	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.10	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
5.11	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
6.1	0,10	0,08		0,12	0,09		0,14	0,11		0,14	0,12		0,16	0,13		0,16	0,14			●	
6.2	0,09	0,07		0,11	0,08		0,13	0,10		0,13	0,10		0,14	0,12		0,14	0,13			●	
6.3	0,08	0,06		0,09	0,07		0,11	0,09		0,11	0,09		0,12	0,10		0,13	0,11			●	
6.4																					
6.5																					

Cutting data standard values – MonsterMill – TCR, end mills 52 503 ... / 52 504 ... /

	long	extra long	long	extra long	Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
					a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2.1	110	88	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.2	100	80	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.3	80	64	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.4	80	64	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.5	100	80	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.6	100	80	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.7	55	44	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.1	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.2	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.3	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.4	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.5	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.6	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.7	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.8	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.9	**120**	**96**	1,0	0,5	0,045	0,035	0,025	0,060	0,045	0,030	0,070	0,052	0,035	0,100	0,075	0,050
5.10	**100**	**80**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.11	**80**	**64**	1,0	0,5	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,060	0,045	0,030

Cutting data standard values – MonsterMill – TCR, end mills 52 505 ... / 52 506 ...

	long	long	Ø DC = 4 mm		Ø DC = 5 mm		Ø DC = 6 mm		Ø DC = 8 mm		Ø DC = 10 mm		Ø DC = 12mm		Ø DC = 16 mm	
			a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2.1	110	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.2	100	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.3	80	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.4	80	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.5	100	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.6	100	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.7	55	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.1	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.2	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.3	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.4	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.5	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.6	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.7	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.8	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.9	**120**	1,0	0,035	0,025	0,045	0,030	0,052	0,035	0,075	0,050	0,089	0,060	0,104	0,070	0,077	0,060
5.10	**100**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,089	0,060	0,077	0,060
5.11	**80**	1,0	0,021	0,015	0,030	0,020	0,037	0,025	0,045	0,030	0,060	0,040	0,075	0,050	0,077	0,060

52 507 ... / 52 508 ...

	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC			
Index	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
2.1	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.2	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.3	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.4	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.5	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.6	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.7	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.1	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.2	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.3	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.4	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.5	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.6	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.7	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.8	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.9	0,120	0,089	0,060	0,140	0,104	0,070	0,101	0,077	0,060	0,190	0,155	0,120	●		
5.10	0,100	0,075	0,050	0,120	0,089	0,060	0,101	0,077	0,060	0,158	0,129	0,100	●		
5.11	0,080	0,060	0,040	0,100	0,075	0,050	0,101	0,077	0,060	0,126	0,103	0,080	●		

	Ø DC = 20 mm		● 1st choice		○ suitable
	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC			
Index	f_z mm	f_z mm	Emulsion	Compressed air	MMS
2.1	0,090	0,070	●		
2.2	0,090	0,070	●		
2.3	0,090	0,070	●		
2.4	0,090	0,070	●		
2.5	0,090	0,070	●		
2.6	0,090	0,070	●		
2.7	0,090	0,070	●		
5.1	0,090	0,070	●		
5.2	0,090	0,070	●		
5.3	0,090	0,070	●		
5.4	0,090	0,070	●		
5.5	0,090	0,070	●		
5.6	0,090	0,070	●		
5.7	0,090	0,070	●		
5.8	0,090	0,070	●		
5.9	0,155	0,120	●		
5.10	0,129	0,100	●		
5.11	0,103	0,080	●		

Cutting data standard values – MonsterMill – TCR, ball-nosed end mills 52 513 ... /

	long	extra long		Ø DC = 2 mm		Ø DC = 3 mm		Ø DC = 4 mm		Ø DC = 5 mm		Ø DC = 6 mm		Ø DC = 8 mm	
				a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2.1	**60**	**55**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.2	**55**	**50**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.3	**45**	**40**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.4	**45**	**40**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.5	**55**	**50**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.6	**55**	**50**	0,1–0,2	0,009	0,007	0,010	0,008	0,012	0,010	0,012	0,010	0,020	0,015	0,025	0,020
2.7	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.1	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.2	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.3	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.4	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.5	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.6	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.7	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.8	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.9	**65**	**60**	0,1–0,2	0,017	0,013	0,020	0,014	0,022	0,017	0,022	0,017	0,034	0,025	0,053	0,042
5.10	**55**	**50**	0,1–0,2	0,014	0,011	0,017	0,012	0,019	0,014	0,019	0,014	0,029	0,022	0,046	0,036
5.11	**45**	**40**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030

Cutting data standard values – MonsterMill – TCR, torus cutters 52 511 ... / 52 512 ...

	long	extra long		Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	● 1st choice		○ suitable
				a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
2.1	**120**	**110**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.2	**110**	**100**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.3	**90**	**80**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.4	**90**	**80**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.5	**110**	**100**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.6	**110**	**100**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.7															
5.1	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.2	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.3	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.4	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.5	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.6	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.7	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.8	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.9	**130**	**120**	0,06	0,040	0,060	0,070	0,090	0,120	0,150	0,180	0,210	0,300	●		
5.10	**110**	**100**	0,06	0,030	0,040	0,060	0,080	0,100	0,120	0,150	0,180	0,240	●		
5.11	**90**	**80**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		

52 514 ...

	Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		● 1st choice		○ suitable
	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	Emulsion	Compressed air	MMS
Index	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
2.1	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.2	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.3	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.4	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.5	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.6	0,030	0,025	0,035	0,030	0,040	0,035	●		
2.7	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.1	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.2	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.3	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.4	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.5	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.6	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.7	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.8	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.9	0,059	0,046	0,066	0,056	0,073	0,063	●		
5.10	0,050	0,040	0,056	0,048	0,062	0,054	●		
5.11	0,042	0,033	0,047	0,040	0,052	0,045	●		

Cutting data standard values – MonsterMill – Ball-nosed end mills – HCR, 53 600 ... /

$T_x \leq 2,5$ x DC

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	0,07	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
1.15	200	0,07	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
1.16	200	0,07	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
6.1	200	0,05	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
6.2	180	0,05	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
6.3	160	0,05	**0,002**	**0,005**	**0,006**	**0,008**	**0,012**	**0,014**	**0,017**	**0,022**	**0,026**	**0,029**
6.4	150	0,03	**0,002**	**0,004**	**0,005**	**0,007**	**0,010**	**0,012**	**0,014**	**0,018**	**0,022**	**0,024**
6.5	130	0,03	**0,002**	**0,003**	**0,004**	**0,006**	**0,008**	**0,010**	**0,011**	**0,014**	**0,018**	**0,019**

T_x = 2,6–5 x DC

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	120	0,07	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
1.15	120	0,07	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
1.16	120	0,07	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
6.1	120	0,05	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
6.2	108	0,05	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
6.3	96	0,05	**0,002**	**0,004**	**0,005**	**0,007**	**0,010**	**0,011**	**0,014**	**0,017**	**0,020**	**0,023**
6.4	90	0,03	**0,002**	**0,003**	**0,004**	**0,006**	**0,008**	**0,010**	**0,012**	**0,015**	**0,017**	**0,019**
6.5	78	0,03	**0,001**	**0,002**	**0,003**	**0,004**	**0,006**	**0,008**	**0,009**	**0,012**	**0,014**	**0,015**

T_x = 5,1–10 x DC

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	90	0,06	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
1.15	90	0,06	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
1.16	90	0,06	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
6.1	90	0,04	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
6.2	81	0,04	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
6.3	72	0,04	**0,001**	**0,002**	**0,004**	**0,005**	**0,007**	**0,008**	**0,011**	**0,013**	**0,014**	**0,017**
6.4	68	0,02	**0,001**	**0,002**	**0,003**	**0,004**	**0,006**	**0,007**	**0,009**	**0,011**	**0,012**	**0,014**
6.5	59	0,02	**0,001**	**0,002**	**0,002**	**0,003**	**0,005**	**0,006**	**0,007**	**0,009**	**0,010**	**0,011**

T_x = 10,1–15 x DC

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,04 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	70	0,05	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.15	70	0,05	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.16	70	0,05	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.1	70	0,03	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.2	63	0,03	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.3	56	0,03	**0,001**	**0,001**	**0,002**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**	**0,010**	**0,012**
6.4	53	0,01	**0,001**	**0,001**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**	**0,010**
6.5	46	0,01	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**	**0,006**	**0,008**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

53 601 ...

$T_x \leq 2,5 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	200	0,07	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
1.15	200	0,07	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
1.16	200	0,07	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
6.1	200	0,05	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
6.2	180	0,05	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
6.3	160	0,05	**0,036**	**0,043**	**0,058**	**0,086**	**0,115**	**0,144**	**0,173**	○	●	●
6.4	150	0,03	**0,030**	**0,036**	**0,048**	**0,072**	**0,096**	**0,120**	**0,144**	○	●	●
6.5	130	0,03	**0,024**	**0,029**	**0,038**	**0,058**	**0,077**	**0,096**	**0,115**	○	●	●

$T_x = 2,6–5 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	120	0,07	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
1.15	120	0,07	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
1.16	120	0,07	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
6.1	120	0,05	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
6.2	108	0,05	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
6.3	96	0,05	**0,029**	**0,035**	**0,046**	**0,060**	**0,084**	**0,107**	**0,130**	○	●	●
6.4	90	0,03	**0,024**	**0,029**	**0,039**	**0,050**	**0,070**	**0,089**	**0,108**	○	●	●
6.5	78	0,03	**0,019**	**0,023**	**0,031**	**0,040**	**0,056**	**0,071**	**0,086**	○	●	●

$T_x = 5,1–10 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	90	0,06	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
1.15	90	0,06	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
1.16	90	0,06	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
6.1	90	0,04	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
6.2	81	0,04	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
6.3	72	0,04	**0,022**	**0,026**	**0,035**	**0,035**	**0,052**	**0,069**	**0,086**	○	●	●
6.4	68	0,02	**0,018**	**0,022**	**0,029**	**0,029**	**0,043**	**0,058**	**0,072**	○	●	●
6.5	59	0,02	**0,014**	**0,018**	**0,023**	**0,023**	**0,035**	**0,046**	**0,058**	○	●	●

$T_x = 10,1–15 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,04 x DC		a_e 0,05 x DC							
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	70	0,05	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
1.15	70	0,05	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
1.16	70	0,05	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
6.1	70	0,03	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
6.2	63	0,03	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
6.3	56	0,03	**0,017**	**0,022**	**0,028**	**0,028**	**0,041**	**0,055**	**0,069**	○	●	●
6.4	53	0,01	**0,014**	**0,018**	**0,023**	**0,023**	**0,035**	**0,046**	**0,058**	○	●	●
6.5	46	0,01	**0,011**	**0,014**	**0,019**	**0,018**	**0,028**	**0,037**	**0,046**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 603 ... and 53 604 ...

Peripheral milling

			$T_x \leq 2,5 \times DC$									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
1.15	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
1.16	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
6.1	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
6.2	170	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
6.3	160	1,0	**0,005**	**0,005**	**0,010**	**0,010**	**0,014**	**0,014**	**0,019**	**0,024**	**0,029**	**0,034**
6.4	150	1,0	**0,004**	**0,004**	**0,008**	**0,008**	**0,012**	**0,012**	**0,016**	**0,020**	**0,024**	**0,028**
6.5	110	1,0	**0,003**	**0,003**	**0,006**	**0,006**	**0,010**	**0,010**	**0,013**	**0,016**	**0,019**	**0,022**

Z-layer milling / face milling

			$T_x \leq 2,5 \times DC$									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	120	0,07	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.15	120	0,07	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.16	120	0,07	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.1	120	0,05	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.2	110	0,05	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.3	100	0,05	**0,002**	**0,002**	**0,005**	**0,005**	**0,007**	**0,007**	**0,010**	**0,012**	**0,014**	**0,017**
6.4	80	0,03	**0,002**	**0,002**	**0,004**	**0,004**	**0,006**	**0,006**	**0,008**	**0,010**	**0,012**	**0,014**
6.5	60	0,03	**0,002**	**0,002**	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,010**	**0,011**

Full slot

			$T_x \leq 2,5 \times DC$									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 1,0 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	70	0,07	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.15	70	0,07	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.16	70	0,07	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.1	65	0,05	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.2	55	0,05	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.3	45	0,05	**0,001**	**0,001**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**	**0,010**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

$T_x \leq 2,5 \times DC$

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Emulsion	Compressed air	MMS
			a_e 0,05 x DC							● 1st choice		○ suitable
			f_z mm									
1.14	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
1.15	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
1.16	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
6.1	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
6.2	170	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
6.3	160	1,0	**0,043**	**0,048**	**0,067**	**0,101**	**0,134**	**0,168**	**0,192**	○	●	●
6.4	150	1,0	**0,036**	**0,040**	**0,056**	**0,084**	**0,112**	**0,140**	**0,160**	○	●	●
6.5	110	1,0	**0,029**	**0,032**	**0,045**	**0,067**	**0,090**	**0,112**	**0,128**	○	●	●

$T_x \leq 2,5 \times DC$

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Emulsion	Compressed air	MMS
			a_e 0,3 x DC							● 1st choice		○ suitable
			f_z mm									
1.14	120	0,07	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.15	120	0,07	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.16	120	0,07	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.1	120	0,05	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.2	110	0,05	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.3	100	0,05	**0,022**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**	○	●	●
6.4	80	0,03	**0,018**	**0,020**	**0,028**	**0,042**	**0,056**	**0,070**	**0,080**	○	●	●
6.5	60	0,03	**0,014**	**0,016**	**0,022**	**0,034**	**0,045**	**0,056**	**0,064**	○	●	●

$T_x \leq 2,5 \times DC$

Full slot

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Emulsion	Compressed air	MMS
			a_e 1,0 x DC							● 1st choice		○ suitable
			f_z mm									
1.14	70	0,07	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
1.15	70	0,07	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
1.16	70	0,07	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
6.1	65	0,05	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
6.2	55	0,05	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
6.3	45	0,05	**0,012**	**0,015**	**0,020**	**0,030**	**0,033**	**0,035**	**0,040**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 603 ... and 53 604 ...

Peripheral milling

			T_x = 2,6–5 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
1.15	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
1.16	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
6.1	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
6.2	119	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
6.3	112	1,0	**0,004**	**0,004**	**0,007**	**0,007**	**0,011**	**0,011**	**0,014**	**0,018**	**0,022**	**0,025**
6.4	105	1,0	**0,003**	**0,003**	**0,006**	**0,006**	**0,009**	**0,009**	**0,012**	**0,015**	**0,018**	**0,021**
6.5	77	1,0	**0,002**	**0,002**	**0,005**	**0,005**	**0,007**	**0,007**	**0,010**	**0,012**	**0,014**	**0,017**

Z-layer milling / face milling

			T_x = 2,6–5 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	84	0,07	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
1.15	84	0,07	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
1.16	84	0,07	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
6.1	84	0,05	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
6.2	77	0,05	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
6.3	70	0,05	**0,002**	**0,002**	**0,004**	**0,004**	**0,005**	**0,005**	**0,007**	**0,009**	**0,011**	**0,013**
6.4	56	0,03	**0,002**	**0,002**	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,009**	**0,011**
6.5	42	0,03	**0,001**	**0,001**	**0,002**	**0,002**	**0,004**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**

Full slot

			T_x = 2,6–5 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 1,0 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	49	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.15	49	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.16	49	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.1	46	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.2	39	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.3	32	0,05	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

T_x = 2,6–5 x DC

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice: Emulsion	● 1st choice: Compressed air	● 1st choice: MMS	○ suitable: Emulsion	○ suitable: Compressed air	○ suitable: MMS
			a_e 0,05 x DC												
			f_z mm												
1.14	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●			
1.15	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●			
1.16	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●			
6.1	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●			
6.2	119	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●			
6.3	112	1,0	**0,032**	**0,036**	**0,050**	**0,076**	**0,101**	**0,126**	**0,144**		●	●			
6.4	105	1,0	**0,027**	**0,030**	**0,042**	**0,063**	**0,084**	**0,105**	**0,120**		●	●			
6.5	77	1,0	**0,022**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**		●	●			

T_x = 2,6–5 x DC

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice: Emulsion	● 1st choice: Compressed air	● 1st choice: MMS	○ suitable: Emulsion	○ suitable: Compressed air	○ suitable: MMS
			a_e 0,3 x DC												
			f_z mm												
1.14	84	0,07	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●			
1.15	84	0,07	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●			
1.16	84	0,07	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●			
6.1	84	0,05	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●			
6.2	77	0,05	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●			
6.3	70	0,05	**0,016**	**0,018**	**0,025**	**0,038**	**0,050**	**0,063**	**0,072**		●	●			
6.4	56	0,03	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**		●	●			
6.5	42	0,03	**0,011**	**0,012**	**0,017**	**0,025**	**0,034**	**0,042**	**0,048**		●	●			

T_x = 2,6–5 x DC

Full slot

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice: Emulsion	● 1st choice: Compressed air	● 1st choice: MMS	○ suitable: Emulsion	○ suitable: Compressed air	○ suitable: MMS
			a_e 1,0 x DC												
			f_z mm												
1.14	49	0,07	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●			
1.15	49	0,07	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●			
1.16	49	0,07	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●			
6.1	46	0,05	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●			
6.2	39	0,05	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●			
6.3	32	0,05	**0,009**	**0,010**	**0,014**	**0,021**	**0,028**	**0,035**	**0,040**		●	●			

Cutting data standard values – MonsterMill – End mills – HCR, 53 603 ... and 53 604 ...

Peripheral milling

			T_x = 5,1–10 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.15	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.16	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.1	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.2	94	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.3	88	0,75	**0,002**	**0,002**	**0,005**	**0,005**	**0,007**	**0,007**	**0,010**	**0,012**	**0,014**	**0,017**
6.4	83	0,75	**0,002**	**0,002**	**0,004**	**0,004**	**0,006**	**0,006**	**0,008**	**0,010**	**0,012**	**0,014**
6.5	61	0,75	**0,002**	**0,002**	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,010**	**0,011**

Z-layer milling / face milling

			T_x = 5,1–10 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	66	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.15	66	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.16	66	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.1	66	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.2	61	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.3	55	0,05	**0,001**	**0,001**	**0,002**	**0,002**	**0,004**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**
6.4	44	0,03	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**
6.5	33	0,03	**0,001**	**0,001**	**0,002**	**0,002**	**0,002**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**

Peripheral milling

			T_x = 10,1–15 x DC									
			Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm	Ø DC = 2,5 mm	Ø DC = 3 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
1.15	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
1.16	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
6.1	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
6.2	77	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
6.3	72	0,5	**0,004**	**0,004**	**0,006**	**0,006**	**0,008**	**0,010**	**0,012**	**0,013**	**0,017**	**0,019**
6.4	68	0,5	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,010**	**0,011**	**0,014**	**0,016**
6.5	50	0,5	**0,003**	**0,003**	**0,004**	**0,004**	**0,005**	**0,006**	**0,008**	**0,009**	**0,012**	**0,013**

Z-layer milling / face milling

			T_x = 10,1–15 x DC									
			Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm	Ø DC = 2,5 mm	Ø DC = 3 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	54	0,05	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
1.15	54	0,05	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
1.16	54	0,05	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
6.1	54	0,03	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
6.2	50	0,03	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
6.3	45	0,03	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,009**	**0,010**
6.4	36	0,01	**0,002**	**0,002**	**0,002**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**
6.5	27	0,01	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,004**	**0,006**	**0,006**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

T_x = 5,1–10 x DC

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.15	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.16	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.1	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.2	94	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.3	88	0,75	**0,022**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**	○	●	●
6.4	83	0,75	**0,018**	**0,020**	**0,028**	**0,042**	**0,056**	**0,070**	**0,080**	○	●	●
6.5	61	0,75	**0,014**	**0,016**	**0,022**	**0,034**	**0,045**	**0,056**	**0,064**	○	●	●

T_x = 5,1–10 x DC

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,3 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	66	0,07	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
1.15	66	0,07	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
1.16	66	0,07	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
6.1	66	0,05	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
6.2	61	0,05	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
6.3	55	0,05	**0,011**	**0,012**	**0,017**	**0,025**	**0,034**	**0,042**	**0,048**	○	●	●
6.4	44	0,03	**0,009**	**0,010**	**0,014**	**0,021**	**0,028**	**0,035**	**0,040**	○	●	●
6.5	33	0,03	**0,007**	**0,008**	**0,011**	**0,017**	**0,022**	**0,028**	**0,032**	○	●	●

T_x = 10,1–15 x DC

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 4mm	● 1st choice		○ suitable
			a_e 0,05 x DC			
			f_z mm	Emulsion	Compressed air	MMS
1.14	90	0,5	0,034	○	●	●
1.15	90	0,5	0,034	○	●	●
1.16	90	0,5	0,034	○	●	●
6.1	90	0,5	0,034	○	●	●
6.2	77	0,5	0,034	○	●	●
6.3	72	0,5	**0,027**	○	●	●
6.4	68	0,5	**0,022**	○	●	●
6.5	50	0,5	**0,018**	○	●	●

T_x = 10,1–15 x DC

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 4 mm	● 1st choice		○ suitable
			a_e 0,3 x DC			
			f_z mm	Emulsion	Compressed air	MMS
1.14	54	0,05	0,017	○	●	●
1.15	54	0,05	0,017	○	●	●
1.16	54	0,05	0,017	○	●	●
6.1	54	0,03	0,017	○	●	●
6.2	50	0,03	0,017	○	●	●
6.3	45	0,03	**0,013**	○	●	●
6.4	36	0,01	**0,011**	○	●	●
6.5	27	0,01	**0,009**	○	●	●

14

Cutting data standard values – MonsterMill – End mills – HCR, 53 605 ...

Peripheral milling

			$T_x \leq 2 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC										
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	200	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
1.15	200	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
1.16	200	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
6.1	190	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
6.2	160	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
6.3	130	2,0	**0,014**	**0,022**	**0,030**	**0,041**	**0,060**	**0,074**	**0,096**	**0,108**	○	●	●
6.4	120	2,0	**0,012**	**0,018**	**0,025**	**0,034**	**0,050**	**0,062**	**0,080**	**0,090**	○	●	●
6.5	110	2,0	**0,010**	**0,014**	**0,020**	**0,027**	**0,040**	**0,050**	**0,064**	**0,072**	○	●	●

Face milling

			$T_x \leq 2 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC										
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	120	0,07	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.15	120	0,07	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.16	120	0,07	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.1	120	0,05	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.2	110	0,05	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.3	90	0,05	**0,012**	**0,017**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**	○	●	●
6.4	75	0,03	**0,010**	**0,014**	**0,020**	**0,028**	**0,042**	**0,056**	**0,070**	**0,080**	○	●	●
6.5	60	0,03	**0,008**	**0,011**	**0,016**	**0,022**	**0,034**	**0,045**	**0,056**	**0,064**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 606 ...

Peripheral milling

			$T_x \leq 3 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC		a_e 0,04 x DC								
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
1.15	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
1.16	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
6.1	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
6.2	119	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
6.3	112	2,0	**0,011**	**0,019**	**0,026**	**0,036**	**0,053**	**0,066**	**0,084**	**0,096**	○	●	●
6.4	105	2,0	**0,009**	**0,016**	**0,022**	**0,030**	**0,044**	**0,055**	**0,070**	**0,080**	○	●	●
6.5	77	2,0	**0,007**	**0,013**	**0,018**	**0,024**	**0,035**	**0,044**	**0,056**	**0,064**	○	●	●

Face milling

			$T_x \leq 3 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC		a_e 0,04 x DC								
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	105	0,07	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
1.15	105	0,07	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
1.16	105	0,07	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
6.1	91	0,05	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
6.2	84	0,05	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
6.3	77	0,05	**0,007**	**0,011**	**0,018**	**0,029**	**0,043**	**0,058**	**0,072**	**0,084**	○	●	●
6.4	63	0,03	**0,006**	**0,009**	**0,015**	**0,024**	**0,036**	**0,048**	**0,060**	**0,070**	○	●	●
6.5	42	0,03	**0,005**	**0,007**	**0,012**	**0,019**	**0,029**	**0,038**	**0,048**	**0,056**	○	●	●

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

Cutting data standard values – MonsterMill – Ball-nosed end mills – HCR, 53 602 ...

$T_x \leq 2{,}5 \times DC$

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice / ○ suitable: Emulsion	Compressed air	MMS
			a_e 0,05 x DC								
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	200	0,07	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
1.15	200	0,07	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
1.16	200	0,07	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
6.1	200	0,05	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
6.2	180	0,05	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
6.3	160	0,05	**0,030**	**0,040**	**0,060**	**0,081**	**0,101**	**0,121**	○	●	●
6.4	150	0,03	**0,025**	**0,034**	**0,050**	**0,067**	**0,084**	**0,101**	○	●	●
6.5	130	0,03	**0,020**	**0,027**	**0,040**	**0,054**	**0,067**	**0,081**	○	●	●

$T_x = 2{,}6–5 \times DC$

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice / ○ suitable: Emulsion	Compressed air	MMS
			a_e 0,05 x DC								
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	120	0,07	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
1.15	120	0,07	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
1.16	120	0,07	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
6.1	120	0,05	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
6.2	108	0,05	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
6.3	96	0,05	**0,024**	**0,032**	**0,042**	**0,058**	**0,075**	**0,091**	○	●	●
6.4	90	0,03	**0,020**	**0,027**	**0,035**	**0,049**	**0,062**	**0,076**	○	●	●
6.5	78	0,03	**0,016**	**0,022**	**0,028**	**0,039**	**0,050**	**0,060**	○	●	●

$T_x = 5{,}1–10 \times DC$

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice / ○ suitable: Emulsion	Compressed air	MMS
			a_e 0,04 x DC								
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	90	0,06	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
1.15	90	0,06	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
1.16	90	0,06	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
6.1	90	0,04	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
6.2	81	0,04	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
6.3	72	0,04	**0,018**	**0,024**	**0,024**	**0,036**	**0,048**	**0,060**	○	●	●
6.4	68	0,02	**0,015**	**0,020**	**0,020**	**0,030**	**0,040**	**0,050**	○	●	●
6.5	59	0,02	**0,012**	**0,016**	**0,016**	**0,024**	**0,032**	**0,040**	○	●	●

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

Cutting data standard values– MonsterMill – End mills – PCR-UNI

	Type short / long / extra long		Ø DC = 5,7–6,0 mm			Ø DC = 6,7–7,0 mm			Ø DC = 7,7–8,0 mm			Ø DC = 8,7–9,0 mm			Ø DC = 9,7–10,0 mm			Ø DC = 11,7–12,0 mm		
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.2	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.3	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.4	**200**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.5	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.6	**180**	1,0	0,069	0,054	0,038	0,080	0,062	0,044	0,089	0,069	0,049	0,100	0,078	0,055	0,110	0,085	0,060	0,128	0,099	0,070
1.7	**200**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.8	**140**	1,0	0,062	0,048	0,034	0,071	0,055	0,039	0,080	0,062	0,044	0,089	0,069	0,049	0,097	0,075	0,053	0,113	0,088	0,062
1.9	**135**	1,0	0,060	0,047	0,033	0,069	0,054	0,038	0,079	0,061	0,043	0,088	0,068	0,048	0,095	0,074	0,052	0,111	0,086	0,061
1.10	**200**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.11	**140**	1,0	0,062	0,048	0,034	0,071	0,055	0,039	0,080	0,062	0,044	0,089	0,069	0,049	0,097	0,075	0,053	0,113	0,088	0,062
1.12	**130**	1,0	0,071	0,055	0,039	0,082	0,064	0,045	0,091	0,071	0,050	0,102	0,079	0,056	0,111	0,086	0,061	0,130	0,100	0,071
1.13	**110**	1,0	0,066	0,051	0,036	0,075	0,058	0,041	0,084	0,065	0,046	0,093	0,072	0,051	0,102	0,079	0,056	0,119	0,092	0,065
1.14	**110**	1,0	0,066	0,051	0,036	0,075	0,058	0,041	0,084	0,065	0,046	0,093	0,072	0,051	0,102	0,079	0,056	0,119	0,092	0,065
1.15	**110**	1,0	0,066	0,051	0,036	0,075	0,058	0,041	0,084	0,065	0,046	0,093	0,072	0,051	0,102	0,079	0,056	0,119	0,092	0,065
1.16	**130**	1,0	0,071	0,055	0,039	0,082	0,064	0,045	0,093	0,072	0,051	0,104	0,081	0,057	0,113	0,088	0,062	0,131	0,102	0,072
2.1	60	1,0	0,044	0,034	0,024	0,049	0,038	0,027	0,057	0,044	0,031	0,062	0,048	0,034	0,068	0,052	0,037	0,080	0,062	0,044
2.2	65	1,0	0,047	0,037	0,026	0,055	0,042	0,030	0,060	0,047	0,033	0,068	0,052	0,037	0,075	0,058	0,041	0,086	0,066	0,047
2.3	65	1,0	0,047	0,037	0,026	0,055	0,042	0,030	0,060	0,047	0,033	0,068	0,052	0,037	0,075	0,058	0,041	0,086	0,066	0,047
2.4	65	1,0	0,047	0,037	0,026	0,055	0,042	0,030	0,060	0,047	0,033	0,068	0,052	0,037	0,075	0,058	0,041	0,086	0,066	0,047
2.5	55	1,0	0,037	0,028	0,020	0,042	0,033	0,023	0,047	0,037	0,026	0,051	0,040	0,028	0,057	0,044	0,031	0,066	0,051	0,036
2.6	60	1,0	0,044	0,034	0,024	0,049	0,038	0,027	0,057	0,044	0,031	0,062	0,048	0,034	0,068	0,052	0,037	0,080	0,062	0,044
2.7	60	1,0	0,038	0,030	0,021	0,042	0,033	0,023	0,047	0,037	0,026	0,053	0,041	0,029	0,058	0,045	0,032	0,068	0,052	0,037
3.1	**240**	1,0	0,124	0,096	0,068	0,142	0,110	0,078	0,161	0,124	0,088	0,177	0,137	0,097	0,195	0,151	0,107	0,226	0,175	0,124
3.2	**180**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.3	**220**	1,0	0,106	0,082	0,058	0,122	0,095	0,067	0,137	0,106	0,075	0,152	0,117	0,083	0,166	0,129	0,091	0,194	0,150	0,106
3.4	**180**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.5	**160**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.6	**150**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
3.7	**160**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.8	**150**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6																				
4.7																				
4.8																				
4.9																				
4.10																				
4.11																				
4.12																				
4.13																				
4.14																				
4.15																				
4.16																				
4.17																				
4.18																				
4.19																				
5.1																				
5.2																				
5.3																				
5.4																				
5.5																				
5.6																				
5.7																				
5.8																				
5.9																				
5.10																				
5.11																				
6.1																				
6.2																				
6.3																				
6.4																				
6.5																				

With an a_p of 1.5 x DC the f_z should be multiplied by 0.75.

Index	Ø DC = 13,7–14,0 mm			Ø DC = 15,5–16,0 mm			Ø DC = 17,5–20,0 mm			Ramping	Helical milling			Drilling	● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	1,0 x DC		Hole diameter		1,0 x DC			
	f_z mm			f_z mm			f_z mm			Max. plunging angle	$\alpha_{R\,max.}$*	$D_{min.}$ DC x 1,5	$D_{max.}$ DC x 1,8	f_z Factor	Emulsion	Compressed air	MMS
1.1	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.2	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.3	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.4	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.5	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.6	0,142	0,110	0,078	0,159	0,123	0,087	0,173	0,134	0,095	45°	0,75xD	25°	16°	0,8	○	●	○
1.7	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.8	0,128	0,099	0,070	0,142	0,110	0,078	0,155	0,120	0,085	45°	0,75xD	25°	16°	0,7	●		○
1.9	0,126	0,098	0,069	0,141	0,109	0,077	0,153	0,119	0,084	45°	0,75xD	25°	16°	0,7	●		○
1.10	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.11	0,128	0,099	0,070	0,142	0,110	0,078	0,155	0,120	0,085	45°	0,75xD	25°	16°	0,8	●		○
1.12	0,146	0,113	0,080	0,162	0,126	0,089	0,177	0,137	0,097	30°	0,5xD	18°	11°	0,8	○	●	○
1.13	0,133	0,103	0,073	0,148	0,115	0,081	0,161	0,124	0,088	30°	0,5xD	18°	11°	0,7	●		○
1.14	0,133	0,103	0,073	0,148	0,115	0,081	0,161	0,124	0,088	30°	0,5xD	18°	11°	0,7	●		○
1.15	0,133	0,103	0,073	0,148	0,115	0,081	0,161	0,124	0,088	30°	0,5xD	18°	11°	0,7	●		○
1.16	0,148	0,115	0,081	0,164	0,127	0,090	0,179	0,139	0,098	30°	0,5xD	18°	11°	0,7	○	●	○
2.1	0,089	0,069	0,049	0,099	0,076	0,054	0,108	0,083	0,059	15°	0,5xD	18°	11°		●		○
2.2	0,097	0,075	0,053	0,108	0,083	0,059	0,117	0,091	0,064	15°	0,5xD	18°	11°		●		○
2.3	0,097	0,075	0,053	0,108	0,083	0,059	0,117	0,091	0,064	15°	0,5xD	18°	11°		●		○
2.4	0,097	0,075	0,053	0,108	0,083	0,059	0,117	0,091	0,064	15°	0,5xD	18°	11°		●		○
2.5	0,075	0,058	0,041	0,082	0,064	0,045	0,089	0,069	0,049	15°	0,5xD	18°	11°		●		
2.6	0,089	0,069	0,049	0,099	0,076	0,054	0,108	0,083	0,059	15°	0,5xD	18°	11°		●		○
2.7	0,077	0,059	0,042	0,086	0,066	0,047	0,093	0,072	0,051	15°	0,5xD	18°	11°		●		
3.1	0,256	0,198	0,140	0,285	0,221	0,156	0,310	0,240	0,170	45°	0,75xD	25°	25°	0,8	○	●	○
3.2	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.3	0,217	0,168	0,119	0,241	0,187	0,132	0,263	0,204	0,144	45°	0,75xD	25°	25°	0,8	○	●	○
3.4	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.5	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.6	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	25°	0,8	○	●	○
3.7	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.8	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	25°	0,8	○	●	○
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
4.10																	
4.11																	
4.12																	
4.13																	
4.14																	
4.15																	
4.16																	
4.17																	
4.18																	
4.19																	
5.1																	
5.2																	
5.3																	
5.4																	
5.5																	
5.6																	
5.7																	
5.8																	
5.9																	
5.10																	
5.11																	
6.1																	
6.2																	
6.3																	
6.4																	
6.5																	

14

* Width of cut per helical revolution

Cutting data for ramping and helical milling = 100 %
Multiply cutting data for drilling by the factor from the table

Cutting data standard values – MonsterMill – End mills – PCR-ALU

	long	extra long		Ø DC = 5,0 mm			Ø DC = 5,7–7,0 mm			Ø DC = 7,7–8,0 mm			Ø DC = 8,7–10,0 mm			Ø DC =11,7–12,0 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1																		
1.2																		
1.3																		
1.4																		
1.5																		
1.6																		
1.7																		
1.8																		
1.9																		
1.10																		
1.11																		
1.12																		
1.13																		
1.14																		
1.15																		
1.16																		
2.1																		
2.2																		
2.3																		
2.4																		
2.5																		
2.6																		
2.7																		
3.1																		
3.2																		
3.3																		
3.4																		
3.5																		
3.6																		
3.7																		
3.8																		
4.1	700	300	1	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065	0,140	0,104	0,070
4.2	700	300	1	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065	0,140	0,104	0,070
4.3	420	200	1	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.4	420	180	1	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.5	280	140	1	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.6	200	110	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.7	180	100	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.8	175	75	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.9	175	75	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.10	175	75	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.11	280	125	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.12	210	100	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.13																		
4.14																		
4.15																		
4.16	220	130	1	0,07	0,052	0,035	0,08	0,06	0,04	0,1	0,075	0,05	0,12	0,089	0,06	0,14	0,104	0,07
4.17																		
4.18																		
4.19																		
5.1																		
5.2																		
5.3																		
5.4																		
5.5																		
5.6																		
5.7																		
5.8																		
5.9																		
5.10																		
5.11																		
6.1																		
6.2																		
6.3																		
6.4																		
6.5																		

With an a_p of 1.5 x DC the f_z should be multiplied by 0.75.

Index	Ø DC = 13,7–14,0 mm			Ø DC = 15,5–16,0 mm			Ø DC = 17,5–18,0 mm			Ø DC = 19,5–20,0 mm			Ramping	Helical milling			Drilling	● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	1,0 x DC		Hole diameter		1,0 x DC			
	f_z mm			f_z mm			f_z mm			f_z mm			Max. plunging angle	$\alpha_{R\,max.}$*	$D_{min.}$ DC x 1,5	$D_{max.}$ DC x 1,8	v_c Factor	Emulsion	Compressed air	MMS
1.1																				
1.2																				
1.3																				
1.4																				
1.5																				
1.6																				
1.7																				
1.8																				
1.9																				
1.10																				
1.11																				
1.12																				
1.13																				
1.14																				
1.15																				
1.16																				
2.1																				
2.2																				
2.3																				
2.4																				
2.5																				
2.6																				
2.7																				
3.1																				
3.2																				
3.3																				
3.4																				
3.5																				
3.6																				
3.7																				
3.8																				
4.1	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,75	●		○
4.2	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,75	●		○
4.3	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	45°	0,75xD	25°	16°	0,75	●		○
4.4	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	45°	0,75xD	25°	16°	0,75	●		○
4.5	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	45°	0,75xD	25°	16°	0,7	●		○
4.6	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.7	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.8	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.9	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.10	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.11	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.12	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.13																				
4.14																				
4.15																				
4.16	0,164	0,127	0,09	0,203	0,155	0,12	0,221	0,181	0,14	0,269	0,219	0,17	45°	0,75xD	25°	16°	0,7	●		○
4.17																				
4.18																				
4.19																				
5.1																				
5.2																				
5.3																				
5.4																				
5.5																				
5.6																				
5.7																				
5.8																				
5.9																				
5.10																				
5.11																				
6.1																				
6.2																				
6.3																				
6.4																				
6.5																				

14

* Width of cut per helical revolution

Cutting data for ramping and helical milling = 100 %
Multiply cutting data for drilling by the factor from the table

Cutting data standard values – MonsterMill – End Mills – MCR, short – long

			Ø DC = 1 mm			Ø DC = 2 mm					Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm		
		short	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	short	long	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm		
1.1	120–140	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
1.2	120–140	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
1.3	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.4	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.5	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.6	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.7	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.8	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.9	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.10	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.11	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.12	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.13	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.14	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.15	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.16	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
2.1	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.2	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.3	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.4																			
2.5	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.6	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.7																			
3.1	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.2	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.3	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.4	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.5	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
3.6	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
3.7	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
3.8	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.7	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.8																			
4.9																			
4.10																			
4.11	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.12	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3																			
5.4																			
5.5																			
5.6																			
5.7																			
5.8																			
5.9	60–80	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,026	0,019	0,012	0,034	0,025	0,016	0,043	0,032	0,020
5.10	60–80	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,026	0,019	0,012	0,034	0,025	0,016	0,043	0,032	0,020
5.11	60–80	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,026	0,019	0,012	0,034	0,025	0,016	0,043	0,032	0,020
6.1	80–100	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
6.2																			
6.3																			
6.4																			
6.5																			

* = with an a_p of 1.5 x DC the f_z should be multiplied by 0.8

Plunging angle for ramping and helical milling: Diameter 3–5 = 3° / Diameter 6–9 = 5° / Diameter 10–20 = 8°

Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,051	0,038	0,024	0,07	0,05	0,03	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	●		
0,051	0,038	0,024	0,07	0,05	0,03	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	●		
0,051	0,038	0,024	0,07	0,05	0,03	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	

14

Cutting data standard values – MonsterMill – End Mills – MCR, extra long

		extra long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	120–140	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
1.2	120–140	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
1.3	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.4	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.5	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.6	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.7	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.8	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.9	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.10	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.11	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.12	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.13	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.14	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.15	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.16	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
2.1	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.2	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.3	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.4																		
2.5	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.6	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.7																		
3.1	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.2	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.3	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.4	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.5	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
3.6	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
3.7	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
3.8	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.7	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.8																		
4.9																		
4.10																		
4.11	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.12	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.13																		
4.14																		
4.15																		
4.16																		
4.17																		
4.18																		
4.19																		
5.1																		
5.2																		
5.3																		
5.4																		
5.5																		
5.6																		
5.7																		
5.8																		
5.9	60–80	0,5*	0,25	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
5.10	60–80	0,5*	0,25	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
5.11	60–80	0,5*	0,25	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
6.1	80–100	0,5*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
6.2																		
6.3																		
6.4																		
6.5																		

* = Trimming and trochoidal slot milling

Plunging angle for ramping and helical milling: Diameter 3–5 = 3° / Diameter 6–9 = 5° / Diameter 10–20 = 8°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
1.2	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
1.3	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.4	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.5	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.6	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.7	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.8	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.9	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.10	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.11	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.12	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.13	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.14	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.15	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
1.16	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
2.1	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
2.2	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
2.3	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
2.4																		
2.5	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
2.6	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
2.7																		
3.1	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
3.2	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
3.3	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
3.4	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
3.5	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
3.6	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
3.7	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
3.8	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
4.7	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
4.8																		
4.9																		
4.10																		
4.11	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
4.12	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
4.13																		
4.14																		
4.15																		
4.16																		
4.17																		
4.18																		
4.19																		
5.1																		
5.2																		
5.3																		
5.4																		
5.5																		
5.6																		
5.7																		
5.8																		
5.9	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
5.10	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
5.11	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
6.1	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
6.2																		
6.3																		
6.4																		
6.5																		

Cutting data – CircularLine – End Mills – CCR-UNI, short – long

Index	short, long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,05 x DC f_z mm	Ø DC = 6 mm a_e 0,1 x DC f_z mm	Ø DC = 6 mm a_e 0,15 x DC f_z mm	Ø DC = 6 mm h_m	Ø DC = 8 mm a_e 0,05 x DC f_z mm	Ø DC = 8 mm a_e 0,1 x DC f_z mm	Ø DC = 8 mm a_e 0,15 x DC f_z mm	Ø DC = 8 mm h_m	Ø DC = 10 mm a_e 0,05 x DC f_z mm	Ø DC = 10 mm a_e 0,1 x DC f_z mm	Ø DC = 10 mm a_e 0,15 x DC f_z mm	Ø DC = 10 mm h_m
1.1	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.2	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.3	**280**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.4	**280**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.5	**280**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.6	**260**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.7	**280**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.8	**260**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.9	**260**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.10	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.11	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.12	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.13	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.14														
1.15	**220**	45°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.16	**220**	45°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
2.1	200	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.2	180	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.3	160	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.4	160	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.5	140	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.6	140	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.7														
3.1	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.2	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.3	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.4	**260**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.5	**260**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
3.6	**240**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
3.7	**240**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
3.8	**200**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11														
4.12														
4.13														
4.14														
4.15														
4.16														
4.17														
4.18														
4.19														
5.1	120	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.2	80	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.3	80	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.4	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.5	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.6	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.7	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.8	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.9	140	40°	0,06	0,04	0,03	0,01	0,07	0,05	0,04	0,016	0,09	0,06	0,05	0,020
5.10	120	40°	0,06	0,04	0,03	0,01	0,07	0,05	0,04	0,016	0,09	0,06	0,05	0,020
5.11	100	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
6.1														
6.2														
6.3														
6.4														
6.5														

Depth of cut corresponds to the flute length

	Ø DC = 12 mm				Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC		a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC		a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC				
Index	f_z mm			h_m	f_z mm			h_m	f_z mm			h_m	Emulsion	Compressed air	MMS
1.1	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.2	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.3	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.4	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.5	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.6	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.7	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.8	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.9	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.10	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.11	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.12	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.13	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.14															
1.15	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.16	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
2.1	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.2	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.3	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.4	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.5	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.6	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.7															
3.1	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.2	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.3	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.4	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.5	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
3.6	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
3.7	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
3.8	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
4.1															
4.2															
4.3															
4.4															
4.5															
4.6															
4.7															
4.8															
4.9															
4.10															
4.11															
4.12															
4.13															
4.14															
4.15															
4.16															
4.17															
4.18															
4.19															
5.1	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.2	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.3	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.4	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.5	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.6	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.7	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.8	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.9	0,11	0,08	0,07	0,025	0,16	0,11	0,09	0,035	0,22	0,15	0,13	0,049	●		
5.10	0,11	0,08	0,07	0,025	0,16	0,11	0,09	0,035	0,22	0,15	0,13	0,049	●		
5.11	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
6.1															
6.2															
6.3															
6.4															
6.5															

Cutting data – CircularLine – End Mills – CCR-UNI, extra long

	extra long	max. angle of engagement	Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm		
			a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC	
Index	v_c in m/min		f_z mm		h_m	f_z mm		h_m	f_z mm		h_m	f_z mm		h_m	f_z mm		h_m
1.1	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.2	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.3	250	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.4	250	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.5	250	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.6	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.7	250	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.8	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.9	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.10	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.11	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.12	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.13	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.14																	
1.15	200	45°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.16	200	45°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
2.1	170	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.2	150	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.3	130	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.4	130	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.5	110	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.6	110	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.7																	
3.1	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.2	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.3	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.4	230	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.5	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
3.6	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
3.7	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
3.8	180	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,10	0,030
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
4.10																	
4.11																	
4.12																	
4.13																	
4.14																	
4.15																	
4.16																	
4.17																	
4.18																	
4.19																	
5.1	100	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
5.2	70	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
5.3	70	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
5.4																	
5.5																	
5.6																	
5.7																	
5.8																	
5.9	120	40°	0,03	0,02	0,007	0,04	0,03	0,008	0,04	0,03	0,010	0,05	0,04	0,012	0,08	0,05	0,017
5.10	100	40°	0,03	0,02	0,007	0,04	0,03	0,008	0,04	0,03	0,010	0,05	0,04	0,012	0,08	0,05	0,017
5.11	90	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
6.1																	
6.2																	
6.3																	
6.4																	
6.5																	

Depth of cut corresponds to the flute length

	Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,1 x DC				
Index	f_z mm		h_m	Emulsion	Compressed air	MMS
1.1	0,17	0,12	0,037	○	●	○
1.2	0,17	0,12	0,037	○	●	○
1.3	0,17	0,12	0,037	○	●	○
1.4	0,17	0,12	0,037	○	●	○
1.5	0,14	0,10	0,032	○	●	○
1.6	0,14	0,10	0,032	○	●	○
1.7	0,14	0,10	0,032	○	●	○
1.8	0,14	0,10	0,032	○	●	○
1.9	0,14	0,10	0,032	○	●	○
1.10	0,14	0,10	0,032	○	●	○
1.11	0,14	0,10	0,032	○	●	○
1.12	0,14	0,10	0,032	○	●	○
1.13	0,14	0,10	0,032	○	●	○
1.14						
1.15	0,14	0,10	0,032	○	●	○
1.16	0,14	0,10	0,032	○	●	○
2.1	0,13	0,09	0,03	●		
2.2	0,13	0,09	0,03	●		
2.3	0,13	0,09	0,03	●		
2.4	0,13	0,09	0,03	●		
2.5	0,13	0,09	0,03	●		
2.6	0,13	0,09	0,03	●		
2.7						
3.1	0,17	0,12	0,037	○	●	○
3.2	0,17	0,12	0,037	○	●	○
3.3	0,17	0,12	0,037	○	●	○
3.4	0,17	0,12	0,037	○	●	○
3.5	0,14	0,10	0,032	○	●	○
3.6	0,14	0,10	0,032	○	●	○
3.7	0,14	0,10	0,032	○	●	○
3.8	0,14	0,10	0,032	○	●	○
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1	0,08	0,06	0,018	●		
5.2	0,08	0,06	0,018	●		
5.3	0,08	0,06	0,018	●		
5.4						
5.5						
5.6						
5.7						
5.8						
5.9	0,11	0,08	0,024	●		
5.10	0,11	0,08	0,024	●		
5.11	0,08	0,06	0,018	●		
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data – CircularLine – End Mills – CCR-AL, long – extra long

Index	long	extra long	max. angle of engagement	Ø DC = 6 mm				Ø DC = 8 mm				● 1st choice		○ suitable
				a_e 0,1 x DC	a_e 0,2 x DC	a_e 0,4 x DC		a_e 0,1 x DC	a_e 0,2 x DC	a_e 0,4 x DC				
	v_c m/min			f_z mm			h_m	f_z mm			h_m	Emulsion	Compressed air	MMS
4.1	500	400	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.2	500	400	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.3	500	400	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.4	500	400	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.5	400	350	60°	0,35	0,25	0,17	0,110	0,44	0,31	0,22	0,140	●		○
4.6	300	250	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.7	300	250	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.8	300	250	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.9	300	250	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.10	300	250	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.11	400	350	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.12	400	350	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○

Index	long	extra long	max. angle of engagement	Ø DC = 10 mm				Ø DC = 12 mm				● 1st choice		○ suitable
				a_e 0,1 x DC	a_e 0,2 x DC	a_e 0,4 x DC		a_e 0,1 x DC	a_e 0,2 x DC	a_e 0,4 x DC				
	v_c m/min			f_z mm			h_m	f_z mm			h_m	Emulsion	Compressed air	MMS
4.1	500	400	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.2	500	400	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.3	500	400	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.4	500	400	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.5	400	350	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.6	300	250	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.7	300	250	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.8	300	250	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.9	300	250	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.10	300	250	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.11	400	350	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.12	400	350	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○

Index	long	extra long	max. angle of engagement	Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
				a_e 0,1 x DC	a_e 0,2 x DC	a_e 0,4 x DC		a_e 0,1 x DC	a_e 0,2 x DC	a_e 0,4 x DC				
	v_c m/min			f_z mm			h_m	f_z mm			h_m	Emulsion	Compressed air	MMS
4.1	500	400	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.2	500	400	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.3	500	400	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.4	500	400	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.5	400	350	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.6	300	250	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.7	300	250	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.8	300	250	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.9	300	250	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.10	300	250	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.11	400	350	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.12	400	350	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○

Depth of cut corresponds to the flute length

Plunging angle for ramping and helical milling: 4°

Cutting data standard values – CircularLine – End mills – CCR-H, 53 596 ...

Index	long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,02 x DC f_z mm	Ø DC = 6 mm a_e 0,05 x DC f_z mm	Ø DC = 6 mm a_e 0,10 x DC f_z mm	Ø DC = 6 mm h_m	Ø DC = 8 mm a_e 0,02 x DC f_z mm	Ø DC = 8 mm a_e 0,05 x DC f_z mm	Ø DC = 8 mm a_e 0,10 x DC f_z mm	Ø DC = 8 mm h_m	Ø DC = 10 mm a_e 0,02 x DC f_z mm	Ø DC = 10 mm a_e 0,05 x DC f_z mm	Ø DC = 10 mm a_e 0,10 x DC f_z mm	Ø DC = 10 mm h_m	● 1st choice Emulsion	● 1st choice Compressed air	○ suitable MMS
6.1	150	30°	**0,13**	**0,08**	**0,06**	**0,018**	**0,14**	**0,09**	**0,06**	**0,020**	**0,18**	**0,11**	**0,08**	**0,025**		●	○
6.2	130	30°	**0,09**	**0,06**	**0,04**	**0,013**	**0,11**	**0,07**	**0,05**	**0,016**	**0,14**	**0,09**	**0,06**	**0,020**		●	○
6.3	120	30°	**0,04**	**0,03**	**0,02**	**0,006**	**0,06**	**0,04**	**0,03**	**0,008**	**0,07**	**0,04**	**0,03**	**0,010**		●	○
6.4	115	30°	**0,03**	**0,02**		**0,004**	**0,04**	**0,03**		**0,006**	**0,05**	**0,03**		**0,007**		●	○
6.5	110	30°	**0,02**			**0,003**	**0,03**			**0,004**	**0,04**			**0,005**		●	○

Index	long v_c m/min	max. angle of engagement	Ø DC = 12 mm a_e 0,02 x DC f_z mm	Ø DC = 12 mm a_e 0,05 x DC f_z mm	Ø DC = 12 mm a_e 0,10 x DC f_z mm	Ø DC = 12 mm h_m	Ø DC = 16 mm a_e 0,02 x DC f_z mm	Ø DC = 16 mm a_e 0,05 x DC f_z mm	Ø DC = 16 mm a_e 0,10 x DC f_z mm	Ø DC = 16 mm h_m	Ø DC = 20 mm a_e 0,02 x DC f_z mm	Ø DC = 20 mm a_e 0,05 x DC f_z mm	Ø DC = 20 mm a_e 0,10 x DC f_z mm	Ø DC = 20 mm h_m	● 1st choice Emulsion	● 1st choice Compressed air	○ suitable MMS
6.1	150	30°	**0,21**	**0,13**	**0,09**	**0,030**	**0,28**	**0,18**	**0,13**	**0,040**	**0,35**	**0,22**	**0,16**	**0,050**		●	○
6.2	130	30°	**0,18**	**0,11**	**0,08**	**0,025**	**0,25**	**0,16**		**0,035**	**0,34**	**0,22**		**0,049**		●	○
6.3	120	30°	**0,08**	**0,05**	**0,04**	**0,012**	**0,13**	**0,08**		**0,018**	**0,17**	**0,11**		**0,024**		●	○
6.4	115	30°	**0,06**	**0,04**		**0,009**	**0,09**			**0,013**	**0,13**			**0,018**		●	○
6.5	110	30°	**0,04**			**0,006**	**0,06**			**0,009**	**0,08**			**0,012**		●	○

Depth of cut corresponds to the flute length

Cutting data standard values – CircularLine – CCR-Ti, long

Index	long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	a_e 0,15 x DC f_z mm	h_m	Ø DC = 8 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	a_e 0,15 x DC f_z mm	h_m	Ø DC = 10 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	a_e 0,15 x DC f_z mm	h_m
2.1	200	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.2	180	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.3	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.4	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.5	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.6	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.7														
5.1	**120**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.2	**80**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.3	**80**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.4	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.5	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.6	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.7	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.8	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.9	**140**	40°	0,060	0,042	0,034	0,013	0,070	0,049	0,040	0,016	0,089	0,063	0,052	0,020
5.10	**120**	40°	0,060	0,042	0,034	0,013	0,070	0,049	0,040	0,016	0,089	0,063	0,052	0,020
5.11	**100**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015

Cutting data standard values – CircularLine – CCR-Ti, extra long

Index	extra long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m	Ø DC = 8 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m	Ø DC = 10 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m	Ø DC = 12 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m
2.1	170	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.2	150	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.3	130	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.4	130	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.5	110	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.6	110	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.7														
5.1	**100**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010
5.2	**70**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010
5.3	**70**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010
5.4														
5.5														
5.6														
5.7														
5.8														
5.9	**120**	40°	0,031	0,022	0,007	0,036	0,025	0,008	0,045	0,032	0,010	0,054	0,038	0,012
5.10	**100**	40°	0,031	0,022	0,007	0,036	0,025	0,008	0,045	0,032	0,010	0,054	0,038	0,012
5.11	**90**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010

Depth of cut corresponds to the flute length

	Ø DC = 12 mm				Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,10 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,10 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,10 x DC	a_e 0,15 x DC	h_m			
Index	f_z mm	f_z mm	f_z mm		f_z mm	f_z mm	f_z mm		f_z mm	f_z mm	f_z mm		Emulsion	Compressed air	MMS
2.1	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.2	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.3	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.4	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.5	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.6	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.7															
5.1	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.2	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.3	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.4	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.5	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.6	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.7	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.8	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.9	0,113	0,080	0,065	0,025	0,157	0,111	0,090	0,035	0,217	0,153	0,125	0,049	●		
5.10	0,113	0,080	0,065	0,025	0,157	0,111	0,090	0,035	0,217	0,153	0,125	0,049	●		
5.11	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		

	Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,10 x DC	h_m	a_e 0,05 x DC	a_e 0,10 x DC	h_m			
Index	f_z mm	f_z mm		f_z mm	f_z mm		Emulsion	Compressed air	MMS
2.1	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.2	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.3	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.4	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.5	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.6	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.7									
5.1	0,058	0,041	0,013	0,080	0,057	0,018	●		
5.2	0,058	0,041	0,013	0,080	0,057	0,018	●		
5.3	0,058	0,041	0,013	0,080	0,057	0,018	●		
5.4									
5.5									
5.6									
5.7									
5.8									
5.9	0,076	0,054	0,017	0,107	0,076	0,024	●		
5.10	0,076	0,054	0,017	0,107	0,076	0,024	●		
5.11	0,058	0,041	0,013	0,080	0,057	0,018	●		

Cutting data standard values – AluLine – End mills – ZEFP = 2

	Type short / medium length	Type long / extra long		Ø DC = 2 mm			Ø DC = 2,5 mm			Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	700	300	1,0	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050
4.2	700	300	1,0	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050
4.3	420	200	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.4	420	180	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.5	280	140	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.6	200	110	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.7	180	100	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.8	175	75	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.9	175	75	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.10	175	75	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.11	280	125	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.12	210	100	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.13																					
4.14																					
4.15																					
4.16	220	130	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.17																					
4.18																					
4.19																					

Cutting data standard values – AluLine – End mills – ZEFP = 3–4

	Type short / medium length	Type long / extra long		Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm			Ø DC = 8,0–8,5 mm			Ø DC = 10 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	700	300	1,0	0,048	0,037	0,027	0,063	0,048	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065
4.2	700	300	1,0	0,048	0,037	0,027	0,063	0,048	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065
4.3	420	200	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.4	420	180	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.5	280	140	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.6	200	110	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.7	180	100	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.8	175	75	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.9	175	75	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.10	175	75	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.11	280	125	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.12	210	100	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.13																					
4.14																					
4.15																					
4.16	220	130	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.17																					
4.18																					
4.19																					

Index	Ø DC = 8,0–9,5 mm			Ø DC = 10,0–11,5 mm			Ø DC = 12,0–13,5 mm			Ø DC = 14,0–15,5 mm			Ø DC = 16,0–17,5 mm			Ø DC = 18,0–19,5 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
4.1	0,120	0,089	0,060	0,140	0,104	0,070	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.2	0,120	0,089	0,060	0,140	0,104	0,070	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.3	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.4	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.5	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.6	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.7	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.8	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.9	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.10	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.11	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.12	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.13																								
4.14																								
4.15																								
4.16	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.17																								
4.18																								
4.19																								

* = only suitable for DLC coated cutters

Index	Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			Ø DC = 25 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
4.1	0,140	0,104	0,070	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	0,213	0,174	0,135	●	○*	○
4.2	0,140	0,104	0,070	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	0,213	0,174	0,135	●	○*	○
4.3	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.4	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.5	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.6	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.7	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.8	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.9	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.10	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.11	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.12	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.13																					
4.14																					
4.15																					
4.16	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.17																					
4.18																					
4.19																					

* = only suitable for DLC coated cutters

14

Cutting data – AluLine – Ball Nosed End Mills

	Type short / medium length	Type long / extra long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	750	450	0,03	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.2	750	450	0,03	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.3	600	360	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.4	400	240	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.5	400	240	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.6	230	170	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.7	190	145	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.8	80	55	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.9	80	55	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.10	80	55	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.11	145	85	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.12	135	105	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.13	240	145	0,03				0,135	0,104	0,075	0,200	0,149	0,100	0,240	0,179	0,120	0,300	0,224	0,150	0,400	0,298	0,200
4.14	65	40	0,03				0,135	0,104	0,075	0,200	0,149	0,100	0,240	0,179	0,120	0,300	0,224	0,150	0,400	0,298	0,200
4.15																					
4.16	350	210	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.17																					
4.18																					
4.19																					

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

Cutting data – AluLine – High Accuracy Finishing Cutters

	Type short / medium length	Type long / extra long		Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	500	360	2,0	0,030	0,018		0,040	0,024		0,045	0,027		0,050	0,030		0,060	0,036	
4.2	500	360	2,0	0,030	0,018		0,040	0,024		0,045	0,027		0,050	0,030		0,060	0,036	
4.3	300	220	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.4	210	150	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.5	210	150	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.6	150	110	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.7	140	100	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.8	60	40	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.9	60	40	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.10	60	40	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.11	140	100	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.12	150	110	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.13																		
4.14																		
4.15																		
4.16	200	140	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.17																		
4.18																		
4.19																		

	Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	f_z mm			f_z mm			f_z mm			f_z mm					
4.1	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,316	0,258	0,200	●		○
4.2	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,316	0,258	0,200	●		○
4.3	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.4	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.5	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.6	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.7	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.8	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.9	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.10	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.11	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.12	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.13	0,500	0,373	0,250	0,548	0,424	0,300	0,592	0,452	0,350	0,712	0,581	0,450	●		○
4.14	0,500	0,373	0,250	0,548	0,424	0,300	0,592	0,452	0,350	0,712	0,581	0,450	●		○
4.15															
4.16	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.17															
4.18															
4.19															

	Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	f_z mm					
4.1	0,070	0,042		●		○
4.2	0,070	0,042		●		○
4.3	0,060	0,036		●		○
4.4	0,060	0,036		●		○
4.5	0,060	0,036		●		○
4.6	0,060	0,036		●		○
4.7	0,060	0,036		●		○
4.8	0,060	0,036		●		○
4.9	0,060	0,036		●		○
4.10	0,060	0,036		●		○
4.11	0,060	0,036		●		○
4.12	0,060	0,036		●		○
4.13						
4.14						
4.15						
4.16	0,060	0,036		●		○
4.17						
4.18						
4.19						

Cutting data – SilverLine – End Mills – 50 951 ... / 50 952 ... / 50 953 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm			Ø DC = 8,0–9,5 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max}$ x DC	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**230**	**184**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.2	**240**	**192**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.3	**210**	**168**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.4	**200**	**160**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.5	**200**	**160**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.6	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.7	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.8	**180**	**144**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.9	**160**	**128**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.10	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.11	**170**	**136**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.12	**180**	**144**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.13																			
1.14																			
1.15																			
1.16																			
2.1	**130**	**104**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.2	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.3	**100**	**80**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.4	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.5	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.6	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.7	**30**	**24**	1,0*	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
3.1	200	160	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.2	180	144	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.3	190	152	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.4	170	136	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.5	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.6	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.7	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.8	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	280	224	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.7	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.8	160	128	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.9	140	112	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.10	120	96	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.11	350	280	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.12	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.4	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.5	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.6	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.7	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.8	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.9	**160**	**128**	0,5	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
5.10	**140**	**112**	0,5	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
5.11	**100**	**80**	0,5	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

* = long version: $a_{p\,max.}$ 1.5 x DC at f_z x 0.75 / ball-nosed end mill: $a_{p\,max.}$ 0.5 x DC

„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.2	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.10	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.11	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.12	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.13																					
1.14																					
1.15																					
1.16																					
2.1	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.2	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.3	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.4	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.5	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.6	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.7	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
3.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.2	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,16	0,13	0,10	●	●	●
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.7	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.8	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.9	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.10	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.11	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.12	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.13																					
4.14																					
4.15																					
4.16																					
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.4	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.5	0,05	0,04	0,03	0,06	0,03	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.6	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.7	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.8	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,08	0,07	0,05	●		
5.10	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,08	0,07	0,05	●		
5.11	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,08	0,07	0,05	●		
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

Plunging angle for ramping and helical milling: 3°

Cutting data – SilverLine – End Mills – 50 955 ... / 50 964 ... / 50 965 ... / 50 968 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,0 mm			Ø DC = 8,0–9,0 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max}$ x DC	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**240**	**192**	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
1.2	**250**	**200**	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
1.3	**210**	**168**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.4	**190**	**152**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.5	**200**	**160**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.6	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.7	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.8	**170**	**136**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.9	**160**	**128**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.10	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.11	**170**	**136**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.12	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.13																			
1.14																			
1.15	**180**	**144**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.16	**150**	**120**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
2.1	**130**	**100**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.2	**120**	**90**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.3	**100**	**80**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.4	**100**	**80**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.5	**120**	**90**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.6	**120**	**90**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.7	**30**	**24**	1,0*	0,5	0,011	0,010	0,007	0,016	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,00	0,03	0,02
3.1	200	160	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.2	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.3	190	152	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.4	150	120	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.5	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.6	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.7	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.8	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	280	224	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.7	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.8	160	128	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.9	140	112	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.10	120	96	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.11	350	280	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.12	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.4	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.5	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.6	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.7	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.8	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.9	**110**	**80**	0,5	0,25	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
5.10	**90**	**70**	0,5	0,25	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
5.11	**70**	**60**	0,5	0,25	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

* = long version: $a_{p\,max.}$ = 1.5 x DC at f_z x 0.75

„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Index	Ø DC = 10,0–11,0 mm			Ø DC = 12,0 mm			Ø DC = 14,0–15,0 mm			Ø DC = 16,0–17,0 mm			Ø DC = 18,0–19,0 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	○	○
1.2	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	○	○
1.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.4	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.8	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.10	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.11	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.12	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.13																					
1.14																					
1.15	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.16	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
2.1	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.2	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.3	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.4	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.5	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.6	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.7	0,01	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
3.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.2	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.7	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.8	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.9	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.10	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.11	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,18	0,14	0,11	0,19	0,15	0,12	●		
4.12	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,18	0,14	0,11	0,19	0,15	0,12	●		
4.13																					
4.14																					
4.15																					
4.16																					
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.4	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.5	0,05	0,04	0,03	0,07	0,03	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.6	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.7	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.8	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.9	0,10	0,08	0,05	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,09	0,16	0,13	0,10	0,17	0,14	0,11	●		
5.10	0,08	0,06	0,04	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		
5.11	0,06	0,05	0,03	0,09	0,07	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,12	0,10	0,08	●		
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

14

Plunging angle for ramping and helical milling: 3°

Cutting data – SilverLine – End Mills – 50 954 ...

	Type short	Type long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	240	192	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.2	250	200	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.3	210	168	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.4	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.5	200	160	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.6	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.7	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.8	170	136	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.9	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.10	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.11	170	136	1,0*	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.12	180	144	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.13																		
1.14																		
1.15	170	136	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.16	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
2.1																		
2.2																		
2.3																		
2.4																		
2.5																		
2.6																		
2.7																		
3.1	200	160	1,0*	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.2	180	144	1,0*	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.3	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.4	170	136	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.5	180	144	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.6	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.7	180	144	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.8	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6																		
4.7																		
4.8																		
4.9																		
4.10																		
4.11																		
4.12																		
4.13																		
4.14																		
4.15																		
4.16																		
4.17																		
4.18																		
4.19																		
5.1																		
5.2																		
5.3																		
5.4																		
5.5																		
5.6																		
5.7																		
5.8																		
5.9																		
5.10																		
5.11																		
6.1																		
6.2																		
6.3																		
6.4																		
6.5																		

* = long version: $a_{p\,max.}$ = 1.5 x DC at f_z x 0.75

Plunging angle for ramping and helical milling: 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.2	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.10	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.11	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.12	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.13																					
1.14																					
1.15	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	○
1.16	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	○
2.1																					
2.2																					
2.3																					
2.4																					
2.5																					
2.6																					
2.7																					
3.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.2	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6																					
4.7																					
4.8																					
4.9																					
4.10																					
4.11																					
4.12																					
4.13																					
4.14																					
4.15																					
4.16																					
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3																					
5.4																					
5.5																					
5.6																					
5.7																					
5.8																					
5.9																					
5.10																					
5.11																					
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

Cutting data standard values – SilverLine – End Mills – 50 959 ...

	Type long	Type extra long		Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
				$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC
Index	v_c m/min		$a_{p\,max.}$	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.1	290	232	2xDC	0,066	0,08	0,10	0,12	0,14
1.2	300	240	2xDC	0,066	0,08	0,10	0,12	0,14
1.3	260	208	2xDC	0,066	0,08	0,10	0,12	0,14
1.4	250	200	2xDC	0,066	0,08	0,10	0,12	0,14
1.5	250	200	2xDC	0,066	0,08	0,10	0,12	0,14
1.6	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
1.7	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
1.8	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
1.9	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
1.10	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
1.11	210	168	2xDC	0,050	0,06	0,08	0,10	0,10
1.12	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
1.13	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
1.14								
1.15	210	168	2xDC	0,066	0,08	0,10	0,12	0,14
1.16	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
2.1	160	128	2xDC	0,042	0,05	0,06	0,08	0,09
2.2	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.3	125	100	2xDC	0,042	0,05	0,06	0,08	0,09
2.4	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.5	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.6	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.7	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
3.1	250	200	2xDC	0,076	0,09	0,12	0,14	0,17
3.2	220	176	2xDC	0,076	0,09	0,12	0,14	0,17
3.3	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
3.4	210	168	2xDC	0,066	0,08	0,10	0,12	0,14
3.5	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
3.6	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
3.7	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
3.8	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
4.1								
4.2								
4.3								
4.4								
4.5								
4.6	350	280	2xDC	0,076	0,09	0,12	0,14	0,17
4.7	370	296	2xDC	0,076	0,09	0,12	0,14	0,17
4.8	300	240	2xDC	0,076	0,09	0,12	0,14	0,17
4.9	220	176	2xDC	0,076	0,09	0,12	0,14	0,17
4.10	180	144	2xDC	0,076	0,09	0,12	0,14	0,17
4.11	430	344	2xDC	0,076	0,09	0,12	0,14	0,17
4.12	370	296	2xDC	0,076	0,09	0,12	0,14	0,17
4.13								
4.14								
4.15								
4.16								
4.17								
4.18								
4.19								
5.1								
5.2								
5.3	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.4	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.5	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.6	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.7	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.8	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.9	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
5.10	175	140	2xDC	0,050	0,06	0,08	0,10	0,10
5.11	125	100	2xDC	0,042	0,05	0,06	0,08	0,09
6.1								
6.2								
6.3								
6.4								
6.5								

	Ø DC = 20 mm	Ø DC = 25 mm	● 1st choice		○ suitable
	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC			
Index	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.1	0,16	0,18	●	○	○
1.2	0,16	0,18	●	○	○
1.3	0,16	0,18	●	○	○
1.4	0,16	0,18	●	○	○
1.5	0,16	0,18	●	○	○
1.6	0,16	0,18	●	○	○
1.7	0,16	0,18	●	○	○
1.8	0,16	0,18	●	○	○
1.9	0,16	0,18	●	○	○
1.10	0,16	0,18	●	○	○
1.11	0,13	0,14	●	○	○
1.12	0,16	0,18	●	○	○
1.13	0,11	0,12	●	○	○
1.14					
1.15	0,16	0,18	●	○	○
1.16	0,16	0,18	●	○	○
2.1	0,11	0,12	●		
2.2	0,11	0,12	●		
2.3	0,11	0,12	●		
2.4	0,11	0,12	●		
2.5	0,11	0,12	●		
2.6	0,11	0,12	●		
2.7	0,08	0,09	●		
3.1	0,19	0,21	●	●	●
3.2	0,19	0,21	●	●	●
3.3	0,16	0,18	●	●	●
3.4	0,16	0,18	●	●	●
3.5	0,16	0,18	●	●	●
3.6	0,16	0,18	●	●	●
3.7	0,16	0,18	●	●	●
3.8	0,16	0,18	●	●	●
4.1					
4.2					
4.3					
4.4					
4.5					
4.6	0,19	0,21	●		
4.7	0,19	0,21	●		
4.8	0,19	0,21	●		
4.9	0,19	0,21	●		
4.10	0,19	0,21	●		
4.11	0,19	0,21	●		
4.12	0,19	0,21	●		
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					
5.2					
5.3	0,08	0,09	●		
5.4	0,08	0,09	●		
5.5	0,08	0,09	●		
5.6	0,08	0,09	●		
5.7	0,08	0,09	●		
5.8	0,08	0,09	●		
5.9	0,16	0,18	●		
5.10	0,13	0,14	●		
5.11	0,11	0,12	●		
6.1					
6.2					
6.3					
6.4					
6.5					

Cutting data – SilverLine – Torus End Mills – 50 962 ...

	Type short	Type long	Ø DCX = 6 mm			Ø DCX = 8 mm			Ø DCX = 10 mm			Ø DCX = 12 mm			Ø DCX = 14 mm			Ø DCX = 16 mm		
			a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX
Index	v_c m/min		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1																				
1.2																				
1.3																				
1.4																				
1.5																				
1.6																				
1.7																				
1.8	170	136	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.9																				
1.10																				
1.11	170	136	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.12	190	152	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.13	130	104	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.14																				
1.15	120	96	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.16	120	96	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
2.1																				
2.2																				
2.3																				
2.4																				
2.5																				
2.6																				
2.7																				
3.1	250	200	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.2	230	184	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.3	200	160	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.4	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.5	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.6	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.7	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.8	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6																				
4.7																				
4.8																				
4.9																				
4.10																				
4.11																				
4.12																				
4.13																				
4.14																				
4.15																				
4.16																				
4.17																				
4.18																				
4.19																				
5.1																				
5.2																				
5.3																				
5.4																				
5.5																				
5.6																				
5.7																				
5.8																				
5.9																				
5.10																				
5.11																				
6.1	**160**	**128**	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
6.2	**120**	**96**	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
6.3	**80**	**64**	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
6.4																				
6.5																				

$a_{e\,max.}$ = 0.5 x DC / $a_{p\,max.}$ = 0.03 x DC

Plunging angle for ramping and helical milling: 3°

Index	Ø DCX = 18 mm			Ø DCX = 20 mm			● 1st choice		○ suitable
	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	Emulsion	Compressed air	MMS
	f_z mm			f_z mm					
1.1									
1.2									
1.3									
1.4									
1.5									
1.6									
1.7									
1.8	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.9									
1.10									
1.11	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.12	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.13	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.14									
1.15	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.16	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
2.1									
2.2									
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.2	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.3	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.4	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.5	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.6	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.7	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.8	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
4.1									
4.2									
4.3									
4.4									
4.5									
4.6									
4.7									
4.8									
4.9									
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1	0,63	0,52	0,40	0,71	0,58	0,45		●	●
6.2	0,63	0,52	0,40	0,71	0,58	0,45		●	●
6.3	0,63	0,52	0,40	0,71	0,58	0,45		●	●
6.4									
6.5									

Cutting data – SilverLine – Torus End Mills – 50 961 ...

	Type short	Type long	Ø DCX = 6 mm			Ø DCX = 8 mm			Ø DCX = 10 mm			Ø DCX = 12 mm			Ø DCX = 14 mm			Ø DCX = 16 mm		
			a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX
Index	v_c m/min		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.2	230	184	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.3	240	192	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.4	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.5	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.6	190	152	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.7	200	160	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.8	180	144	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,73	0,57	0,40	0,59	0,45	0,35
1.9																				
1.10	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.11	170	136	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.12	180	144	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.13	150	120	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.14																				
1.15	150	120	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.16	150	120	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
2.1																				
2.2																				
2.3																				
2.4																				
2.5																				
2.6																				
2.7																				
3.1	250	200	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.2	230	184	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.3	200	160	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.4	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.5	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.6	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.7	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.8	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	250	200	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.7																				
4.8	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.9																				
4.10	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.11																				
4.12																				
4.13																				
4.14																				
4.15																				
4.16																				
4.17																				
4.18																				
4.19																				
5.1																				
5.2																				
5.3																				
5.4																				
5.5																				
5.6																				
5.7																				
5.8																				
5.9																				
5.10																				
5.11																				
6.1																				
6.2	120	96	0,10	0,07	0,05	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,46	0,35	0,25	0,51	0,39	0,30
6.3																				
6.4																				
6.5																				

$a_{e\,max.}$ = 0.5 x DC / $a_{p\,max.}$ = 0.05 x DC

Plunging angle for ramping and helical milling: 3°

Index	Ø DCX = 18 mm			Ø DCX = 20 mm			● 1st choice		○ suitable
	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	Emulsion	Compressed air	MMS
	f_z mm			f_z mm					
1.1	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.2	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.3	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.4	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.5	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.6	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.7	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.8	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.9									
1.10	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.11	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.12	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.13	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.14									
1.15	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.16	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
2.1									
2.2									
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.2	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.3	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.4	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.5	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.6	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.7	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.8	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
4.1									
4.2									
4.3									
4.4									
4.5									
4.6	0,79	0,65	0,50	0,87	0,71	0,55	●		
4.7									
4.8	0,87	0,71	0,55	0,87	0,71	0,55	●		
4.9									
4.10	0,79	0,65	0,50	0,87	0,71	0,55	●		
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2	0,55	0,45	0,35	0,63	0,52	0,40		●	●
6.3									
6.4									
6.5									

Cutting data standard values – S-Cut – End mills – SC-UNI, short – long

	Type short / long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	105–240	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.2	105–250	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
1.3	90–210	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
1.4	80–190	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.5	90–200	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.6	90–190	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.7	80–190	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.8	70–170	1,0	0,029	0,022	0,016	0,040	0,031	0,023	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058
1.9	70–170	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.10	70–190	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.11	70–170	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.12	70–190	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.13	70–150	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
1.14	50–120	1,0	0,020	0,015	0,012	0,028	0,021	0,015	0,039	0,029	0,020	0,053	0,039	0,026	0,069	0,058	0,035
1.15	70–180	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.16	80–160	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
2.1	90–130	1,0	0,029	0,022	0,016	0,040	0,031	0,023	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058
2.2	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.3	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.4	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.5	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.6	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.7	40–60	1,0	0,020	0,015	0,012	0,028	0,021	0,015	0,039	0,029	0,020	0,053	0,039	0,026	0,069	0,029	0,035
3.1	200–240	1,0	0,046	0,036	0,025	0,063	0,049	0,036	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081
3.2	180–220	1,0	0,046	0,036	0,025	0,063	0,049	0,036	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081
3.3	200–240	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
3.4	180–220	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
3.5	160–200	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
3.6	140–180	1,0	0,032	0,025	0,018	0,046	0,036	0,025	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058
3.7	160–200	1,0	0,032	0,025	0,018	0,046	0,036	0,025	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058
3.8	140–180	1,0	0,032	0,025	0,018	0,046	0,036	0,025	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6	140–280	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.7	120–300	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.8	110–180	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.9	90–160	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.10	80–140	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.11	150–350	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
4.12	140–300	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
4.13																	
4.14	180–400	1,0	0,077	0,060	0,044	0,108	0,084	0,061	0,155	0,116	0,078	0,207	0,154	0,104	0,276	0,207	0,138
4.15																	
4.16																	
4.17																	
4.18	60–120	0,5	0,031	0,024	0,017	0,044	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,115	0,081	0,058
4.19	40–80	0,5	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,021	0,026	0,069	0,052	0,035	0,092	0,069	0,046
5.1	30	0,5	0,025	0,020	0,014	0,035	0,026	0,020	0,049	0,037	0,025	0,067	0,049	0,033	0,092	0,069	0,046
5.2	30	0,5	0,023	0,018	0,013	0,032	0,025	0,018	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046
5.3	30	0,5	0,021	0,016	0,012	0,029	0,022	0,016	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035
5.4	30	0,5	0,018	0,014	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.5	30	0,5	0,018	0,014	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.6	30	0,5	0,013	0,014	0,007	0,018	0,014	0,010	0,026	0,020	0,013	0,035	0,025	0,017	0,046	0,035	0,023
5.7	45	0,5	0,018	0,008	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.8	30	0,5	0,018	0,008	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.9	80–160	0,5	0,029	0,022	0,016	0,040	0,031	0,023	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058
5.10	80–140	0,5	0,029	0,022	0,016	0,040	0,031	0,022	0,058	0,043	0,029	0,076	0,056	0,038	0,104	0,081	0,058
5.11	50–100	0,5	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
6.1	120–160	0,5	0,023	0,018	0,013	0,032	0,025	0,018	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046
6.2	80–120	0,3	0,021	0,016	0,012	0,029	0,022	0,016	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035
6.3	60–100	0,2	0,018	0,014	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
6.4																	
6.5																	

With an a_p of 1.5 x DC the f_z should be multiplied by 0.75.
With an a_p of 2.0 x DC the f_z should be multiplied by 0.5.

Plunging angle for ramping and helical milling: 3°

	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			Ø DC = 25 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.2	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,115	0,230	0,184	0,138	0,292	0,234	0,175	●	○	○
1.3	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,115	0,230	0,184	0,138	0,292	0,234	0,175	●	○	○
1.4	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.5	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.6	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.7	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.8	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●	○	○
1.9	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.10	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.11	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.12	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.13	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●	○	○
1.14	0,092	0,069	0,046	0,092	0,069	0,046	0,104	0,081	0,058	0,127	0,104	0,081	0,161	0,131	0,102	●	○	○
1.15	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.16	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
2.1	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●		
2.2	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.3	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.4	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.5	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.6	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.7	0,092	0,069	0,046	0,092	0,069	0,046	0,104	0,081	0,058	0,127	0,104	0,081	0,161	0,131	0,102	●		
3.1	0,207	0,150	0,104	0,219	0,161	0,115	0,242	0,184	0,138	0,288	0,230	0,184	0,365	0,292	0,234		●	
3.2	0,207	0,150	0,104	0,219	0,161	0,115	0,242	0,184	0,138	0,288	0,230	0,184	0,365	0,292	0,234		●	
3.3	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204		●	
3.4	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204		●	
3.5	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204		●	
3.6	0,150	0,104	0,069	0,161	0,115	0,081	0,173	0,127	0,104	0,207	0,173	0,127	0,263	0,219	0,161		●	
3.7	0,150	0,104	0,069	0,161	0,115	0,081	0,173	0,127	0,104	0,207	0,173	0,127	0,263	0,219	0,161		●	
3.8	0,150	0,104	0,069	0,161	0,115	0,081	0,173	0,127	0,104	0,207	0,173	0,127	0,263	0,219	0,161		●	
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.7	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.8	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.9	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.10	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.11	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,127	0,230	0,184	0,138	0,292	0,234	0,175	●		○
4.12	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,115	0,230	0,184	0,138	0,292	0,234	0,175	●		○
4.13																		
4.14	0,345	0,253	0,173	0,380	0,288	0,196	0,414	0,311	0,242	0,495	0,403	0,311	0,628	0,511	0,394	●		○
4.15																		
4.16																		
4.17																		
4.18	0,138	0,104	0,069	0,115	0,115	0,081	0,161	0,127	0,092	0,196	0,161	0,127	0,248	0,204	0,161	●		○
4.19	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●		○
5.1	0,115	0,081	0,058	0,127	0,092	0,058	0,127	0,104	0,081	0,161	0,127	0,104	0,204	0,161	0,131	●		
5.2	0,104	0,081	0,058	0,115	0,046	0,058	0,127	0,092	0,069	0,150	0,127	0,092	0,190	0,161	0,117	●		
5.3	0,092	0,069	0,046	0,104	0,081	0,046	0,115	0,081	0,069	0,127	0,104	0,081	0,161	0,131	0,102	●		
5.4	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.5	0,081	0,058	0,046	0,092	0,035	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.6	0,058	0,046	0,035	0,069	0,046	0,035	0,069	0,058	0,046	0,081	0,069	0,058	0,102	0,088	0,073	●		
5.7	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.8	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.9	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●		
5.10	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●		
5.11	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●		
6.1	0,104	0,081	0,058	0,115	0,081	0,058	0,127	0,092	0,069	0,150	0,127	0,092	0,190	0,161	0,117	●		
6.2	0,092	0,069	0,046	0,104	0,081	0,046	0,115	0,081	0,069	0,127	0,104	0,081	0,161	0,131	0,102	●		
6.3	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
6.4																		
6.5																		

Cutting data standard values – S-Cut – End mills – SC-UNI, extra long

	Type extra long			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	90–180	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.2	90–180	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
1.3	70–160	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
1.4	70–140	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.5	70–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.6	70–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.7	70–140	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.8	50–120	1,0	0,5	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058	0,127	0,092	0,069	0,138	0,104	0,069
1.9	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.10	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.11	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.12	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.13	50–120	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
1.14	40–80	1,0	0,5	0,039	0,029	0,020	0,053	0,039	0,026	0,069	0,058	0,035	0,092	0,069	0,046	0,092	0,069	0,046
1.15	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.16	60–140	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
2.1	60–100	1,0	0,5	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058	0,127	0,092	0,069	0,138	0,104	0,069
2.2	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.3	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.4	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.5	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.6	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.7	30–50	1,0	0,5	0,039	0,029	0,020	0,054	0,039	0,026	0,069	0,058	0,035	0,092	0,069	0,046	0,092	0,069	0,046
3.1	160–200	1,0	0,5	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081	0,207	0,150	0,104	0,219	0,161	0,115
3.2	120–160	1,0	0,5	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081	0,207	0,150	0,104	0,219	0,161	0,115
3.3	160–200	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
3.4	120–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
3.5	120–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
3.6	100–140	1,0	0,5	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058	0,150	0,104	0,069	0,161	0,115	0,081
3.7	120–160	1,0	0,5	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058	0,150	0,104	0,069	0,161	0,115	0,081
3.8	100–140	1,0	0,5	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058	0,150	0,104	0,069	0,161	0,115	0,081
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	100–240	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.7	90–220	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.8	80–180	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.9	60–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.10	60–140	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.11	110–320	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
4.12	100–300	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
4.13																		
4.14	120–400	1,0	0,5	0,155	0,116	0,078	0,207	0,154	0,104	0,276	0,207	0,138	0,345	0,253	0,173	0,380	0,288	0,196
4.15																		
4.16																		
4.17																		
4.18	40–120	0,5	0,25	0,062	0,046	0,031	0,083	0,062	0,041	0,115	0,081	0,058	0,138	0,104	0,069	0,115	0,115	0,081
4.19	30–80	0,5	0,25	0,052	0,021	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
5.1	30	0,5	0,25	0,049	0,037	0,025	0,067	0,049	0,033	0,092	0,069	0,046	0,115	0,081	0,058	0,127	0,092	0,058
5.2	30	0,5	0,25	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046	0,104	0,081	0,058	0,115	0,046	0,058
5.3	25	0,5	0,25	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035	0,092	0,069	0,046	0,104	0,081	0,046
5.4	25	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.5	25	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.6	25	0,5	0,25	0,026	0,020	0,013	0,035	0,025	0,017	0,046	0,035	0,023	0,058	0,046	0,035	0,069	0,046	0,035
5.7	45	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.8	25	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.9	35–65	0,5	0,25	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058	0,127	0,092	0,069	0,138	0,104	0,069
5.10	30–55	0,5	0,25	0,058	0,043	0,029	0,076	0,056	0,038	0,104	0,081	0,046	0,127	0,092	0,069	0,138	0,104	0,069
5.11	30–55	0,5	0,25	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
6.1	80–120	0,5	0,5	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046	0,104	0,081	0,058	0,115	0,081	0,058
6.2	60–100	0,5	0,3	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035	0,092	0,069	0,046	0,104	0,081	0,046
6.3	50–90	0,5	0,15	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
6.4																		
6.5																		

Plunging angle for ramping and helical milling: 3°

	Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			Ø DC = 25 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC			
Index	f_z mm			f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.2	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●	○	○
1.3	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●	○	○
1.4	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.5	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.6	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.7	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.8	0,138	0,115	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●	○	○
1.9	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.10	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.11	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.12	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.13	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●	○	○
1.14	0,092	0,069	0,058	0,092	0,081	0,058	0,127	0,104	0,081	0,150	0,127	0,104	●	○	○
1.15	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.16	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
2.1	0,138	0,115	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●		
2.2	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.3	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.4	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.5	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.6	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.7	0,092	0,069	0,058	0,092	0,081	0,058	0,127	0,104	0,081	0,150	0,127	0,104	●		
3.1	0,219	0,173	0,127	0,230	0,184	0,138	0,288	0,230	0,184	0,345	0,288	0,230	○	●	○
3.2	0,219	0,173	0,127	0,230	0,184	0,138	0,288	0,230	0,184	0,345	0,288	0,230	○	●	○
3.3	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	○	●	○
3.4	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	○	●	○
3.5	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	○	●	○
3.6	0,161	0,127	0,092	0,161	0,127	0,104	0,207	0,173	0,127	0,242	0,207	0,173	○	●	○
3.7	0,161	0,127	0,092	0,161	0,127	0,104	0,207	0,173	0,127	0,242	0,207	0,173	○	●	○
3.8	0,161	0,127	0,092	0,161	0,127	0,104	0,207	0,173	0,127	0,242	0,207	0,173	○	●	○
4.1															
4.2															
4.3															
4.4															
4.5															
4.6	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.7	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.8	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.9	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.10	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.11	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●		○
4.12	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●		○
4.13															
4.14	0,380	0,299	0,207	0,380	0,311	0,242	0,495	0,403	0,311	0,587	0,495	0,403	●		○
4.15															
4.16															
4.17															
4.18	0,150	0,115	0,081	0,150	0,127	0,092	0,196	0,161	0,127	0,230	0,196	0,161	●		○
4.19	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●		○
5.1	0,127	0,092	0,069	0,127	0,104	0,081	0,161	0,127	0,104	0,196	0,161	0,127	●		
5.2	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,127	0,092	0,173	0,150	0,127	●		
5.3	0,104	0,081	0,058	0,104	0,081	0,069	0,127	0,104	0,081	0,150	0,127	0,104	●		
5.4	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.5	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.6	0,069	0,046	0,035	0,069	0,058	0,046	0,081	0,069	0,058	0,092	0,081	0,069	●		
5.7	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.8	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.9	0,138	0,115	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●		
5.10	0,138	0,104	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●		
5.11	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●		
6.1	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,127	0,092	0,173	0,150	0,127		●	
6.2	0,104	0,081	0,058	0,104	0,081	0,069	0,127	0,104	0,081	0,150	0,127	0,104		●	
6.3	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092		●	
6.4															
6.5															

14

Cutting data standard values – S-Cut – End mills – SC-UNI, ZEFP = 5, long

Index	Type long	max. angle of engagement	Ø DC = 6 mm				Ø DC = 8 mm				Ø DC = 10 mm				Ø DC = 12 mm			
			a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m
	v_c m/min		f_z mm				f_z mm				f_z mm				f_z mm			
1.1	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.2	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.3	280	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.4	280	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.5	280	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.6	260	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.7	280	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.8	260	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.9	260	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.10	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.11	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.12	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.13	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.14																		
1.15	220	45°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.16	220	45°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
2.1	200	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.2	180	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.3	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.4	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.5	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.6	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.7	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
3.1	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.2	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.3	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.4	260	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.5	260	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
3.6	240	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
3.7	240	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
3.8	200	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6																		
4.7																		
4.8																		
4.9																		
4.10																		
4.11																		
4.12																		
4.13																		
4.14																		
4.15																		
4.16																		
4.17																		
4.18																		
4.19																		
5.1	120	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.2	80	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.3	80	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.4	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.5	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.6	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.7	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.8	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.9	140	40°	0,045	0,032	0,026	0,010	0,072	0,051	0,041	0,016	0,089	0,063	0,052	0,020	0,112	0,079	0,065	0,025
5.10	120	40°	0,045	0,032	0,026	0,010	0,072	0,051	0,041	0,016	0,089	0,063	0,052	0,020	0,112	0,079	0,065	0,025
5.11	100	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
6.1																		
6.2																		
6.3																		
6.4																		
6.5																		

Cutting depth corresponding to the cutting length

Index	Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	Emulsion	Compressed air	MMS
	f_z mm				f_z mm						
1.1	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.2	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.3	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.4	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.5	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.6	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.7	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.8	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.9	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.10	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.11	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.12	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.13	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.14											
1.15	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.16	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
2.1	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.2	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.3	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.4	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.5	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.6	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.7	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
3.1	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.2	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.3	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.4	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.5	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
3.6	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
3.7	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
3.8	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
4.1											
4.2											
4.3											
4.4											
4.5											
4.6											
4.7											
4.8											
4.9											
4.10											
4.11											
4.12											
4.13											
4.14											
4.15											
4.16											
4.17											
4.18											
4.19											
5.1	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.2	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.3	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.4	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.5	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.6	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.7	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.8	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.9	0,157	0,111	0,090	0,035	0,219	0,155	0,127	0,049	●		
5.10	0,157	0,111	0,090	0,035	0,219	0,155	0,127	0,049	●		
5.11	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
6.1											
6.2											
6.3											
6.4											
6.5											

Cutting data standard values – BlueLine – End mills 52 133 ... / 52 134 ... / 52 140 ... /



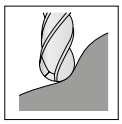
	52 140... 52 141...	52 133... 52 134... 52 324...		Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
	Compressed air	Compressed air		a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	160	1,0	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.15	190	160	1,0	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.16	190	160	1,0	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
6.1	**180**	**160**	1,0	0,015	0,015	0,018	0,020	0,022	0,026	0,030	0,033	0,035
6.2	**160**	**140**	1,0	0,013	0,013	0,016	0,018	0,020	0,023	0,025	0,029	0,032
6.3	**140**	**130**	1,0	0,011	0,011	0,014	0,016	0,018	0,020	0,022	0,025	0,027
6.4	**100**	**90**	1,0	0,010	0,010	0,012	0,014	0,016	0,018	0,020	0,023	0,025

Cutting data standard values – BlueLine – End mills 52 135 ... / 52 136 ... / 52 325 ... /



	Compressed air		Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	140	1,0	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.15	140	1,0	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.16	140	1,0	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
6.1	**140**	**1,0**	0,010	0,011	0,012	0,015	0,018	0,023	0,028	0,029	0,030
6.2	**125**	**1,0**	0,008	0,009	0,011	0,014	0,016	0,020	0,023	0,026	0,028
6.3	**115**	**1,0**	0,007	0,008	0,009	0,012	0,014	0,017	0,020	0,023	0,025
6.4	**80**	**1,0**	0,005	0,006	0,007	0,010	0,012	0,015	0,017	0,019	0,020

Cutting data standard values – BlueLine – Ball-nosed end mills 52 258 ... / 52 259 ...



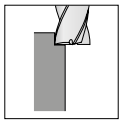
	Compressed air		Ø DC = 0,1–0,5 mm	Ø DC = 0,5–1,0 mm	Ø DC = 1,5–2,0 mm	Ø DC = 2,0–2,5 mm	Ø DC = 2,5–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,05	0,008	0,010	0,012	0,016	0,020	0,025	0,030	0,040	0,050	0,060
1.15	190	0,05	0,008	0,010	0,012	0,016	0,020	0,025	0,030	0,040	0,050	0,060
1.16	190	0,05	0,008	0,010	0,012	0,016	0,020	0,025	0,030	0,040	0,050	0,060
6.1	**185**	**0,05**	0,005	0,005	0,006	0,008	0,010	0,015	0,020	0,030	0,040	0,050
6.2	**165**	**0,05**	0,004	0,005	0,006	0,008	0,010	0,014	0,017	0,028	0,038	0,048
6.3	**145**	**0,05**	0,004	0,004	0,005	0,006	0,008	0,012	0,015	0,025	0,035	0,045
6.4	**105**	**0,05**	0,003	0,004	0,005	0,005	0,006	0,010	0,014	0,022	0,030	0,040

Cutting data standard values – BlueLine – Ball-nosed end mills 52 256 ... / 52 257 ... /



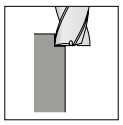
	Compressed air		Ø DC = 0,1–0,5 mm	Ø DC = 0,5–1,0 mm	Ø DC = 1,0–1,5 mm	Ø DC = 1,5–2,0 mm	Ø DC = 2,0–2,5 mm	Ø DC = 2,5–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 7 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	0,05	0,010	0,011	0,012	0,015	0,019	0,025	0,030	0,033	0,036	0,040
1.15	200	0,05	0,010	0,011	0,012	0,015	0,019	0,025	0,030	0,033	0,036	0,040
1.16	200	0,05	0,010	0,011	0,012	0,015	0,019	0,025	0,030	0,033	0,036	0,040
6.1	**190**	**0,05**	0,006	0,006	0,006	0,008	0,011	0,015	0,020	0,025	0,030	0,038
6.2	**170**	**0,05**	0,005	0,006	0,006	0,008	0,011	0,015	0,020	0,024	0,027	0,035
6.3	**150**	**0,05**	0,005	0,006	0,006	0,008	0,010	0,013	0,018	0,022	0,025	0,032
6.4	**110**	**0,05**	0,004	0,005	0,005	0,007	0,009	0,013	0,016	0,021	0,025	0,030

52 141 ... / 52 324 ...



	52 140... 52 141...	52 133... 52 134... 52 324...		Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
	Compressed air	Compressed air		a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	160	0,05	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.15	190	160	0,05	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.16	190	160	0,05	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
6.1	**180**	**160**	0,05	0,015	0,015	0,018	0,020	0,022	0,026	0,030	0,033	0,035
6.2	**160**	**140**	0,05	0,013	0,013	0,016	0,018	0,020	0,023	0,025	0,029	0,032
6.3	**140**	**130**	0,05	0,011	0,011	0,014	0,016	0,018	0,020	0,022	0,025	0,027
6.4	**100**	**90**	0,05	0,010	0,010	0,012	0,014	0,016	0,018	0,020	0,023	0,025

52 326 ...



	Compressed air		Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
			a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	140	0,05	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.15	140	0,05	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.16	140	0,05	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
6.1	**140**	0,05	0,010	0,011	0,012	0,015	0,018	0,023	0,028	0,029	0,030
6.2	**125**	0,05	0,008	0,009	0,011	0,014	0,016	0,020	0,023	0,026	0,028
6.3	**115**	0,05	0,007	0,008	0,009	0,012	0,014	0,017	0,020	0,023	0,025
6.4	**80**	0,05	0,005	0,006	0,007	0,010	0,012	0,015	0,017	0,019	0,020

	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	f_z mm	f_z mm	f_z mm
1.14	0,070	0,090	0,100
1.15	0,070	0,090	0,100
1.16	0,070	0,090	0,100
6.1	0,060	0,080	0,090
6.2	0,058	0,078	0,085
6.3	0,055	0,075	0,080
6.4	0,050	0,070	0,070

52 302 ... / 52 303 ... / 52 404 ... / 52 405 ...

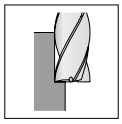
	Ø DC = 8 mm	Ø DC = 9 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 14 mm	Ø DC = 16 mm	Ø DC = 20 mm
	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	0,050	0,060	0,070	0,080	0,090	0,100	0,120
1.15	0,050	0,060	0,070	0,080	0,090	0,100	0,120
1.16	0,050	0,060	0,070	0,080	0,090	0,100	0,120
6.1	0,044	0,050	0,060	0,070	0,080	0,090	0,110
6.2	0,042	0,048	0,058	0,068	0,078	0,088	0,105
6.3	0,039	0,045	0,055	0,065	0,075	0,085	0,100
6.4	0,035	0,040	0,050	0,060	0,070	0,080	0,090

Cutting data standard values – BlueLine – torus cutters 52 304 ...

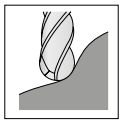


	Compressed air		Ø DC = 0,5–1,5 mm	Ø DC = 2,0–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	1,0	0,012	0,028	0,055	0,055	0,065	0,075	0,090	0,100	0,120
1.15	190	1,0	0,012	0,028	0,055	0,055	0,065	0,075	0,090	0,100	0,120
1.16	190	1,0	0,012	0,028	0,055	0,055	0,065	0,075	0,090	0,100	0,120
6.1	**180**	1,0	0,008	0,025	0,050	0,050	0,060	0,070	0,085	0,095	0,115
6.2	**160**	1,0	0,007	0,023	0,040	0,040	0,055	0,070	0,082	0,090	0,110
6.3	**140**	1,0	0,006	0,020	0,038	0,038	0,058	0,065	0,080	0,085	0,105
6.4	**100**	1,0	0,005	0,018	0,035	0,035	0,060	0,060	0,075	0,080	0,100

Cutting data standard values – BlueLine – torus cutters 52 305 ...



	Compressed air		Ø DC = 1,0–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	1,0	0,010	0,025	0,025	0,050	0,050	0,060
1.15	190	1,0	0,010	0,025	0,025	0,050	0,050	0,060
1.16	190	1,0	0,010	0,025	0,025	0,050	0,050	0,060
6.1	**180**	1,0	0,006	0,022	0,022	0,045	0,045	0,055
6.2	**160**	1,0	0,005	0,020	0,020	0,035	0,035	0,050
6.3	**140**	1,0	0,004	0,017	0,017	0,033	0,033	0,053
6.4	**100**	1,0	0,003	0,015	0,015	0,030	0,030	0,050



	Compressed air		Ø DC = 0,5–1,5 mm	Ø DC = 2,0–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,05	0,016	0,032	0,060	0,060	0,080	0,090	0,100	0,120	0,140
1.15	190	0,05	0,016	0,032	0,060	0,060	0,080	0,090	0,100	0,120	0,140
1.16	190	0,05	0,016	0,032	0,060	0,060	0,080	0,090	0,100	0,120	0,140
6.1	**180**	0,05	0,012	0,030	0,055	0,055	0,075	0,085	0,095	0,105	0,135
6.2	**160**	0,05	0,011	0,028	0,050	0,050	0,070	0,080	0,090	0,100	0,130
6.3	**140**	0,05	0,010	0,025	0,044	0,044	0,070	0,075	0,088	0,085	0,125
6.4	**100**	0,05	0,090	0,021	0,040	0,040	0,065	0,070	0,085	0,090	0,120

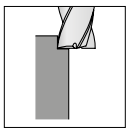


	Compressed air		Ø DC = 1,0–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,05	0,014	0,030	0,030	0,055	0,055	0,070
1.15	190	0,05	0,014	0,030	0,030	0,055	0,055	0,070
1.16	190	0,05	0,014	0,030	0,030	0,055	0,055	0,070
6.1	**180**	0,05	0,010	0,027	0,027	0,050	0,050	0,065
6.2	**160**	0,05	0,009	0,025	0,025	0,045	0,045	0,060
6.3	**140**	0,05	0,008	0,022	0,022	0,040	0,039	0,063
6.4	**100**	0,05	0,007	0,018	0,018	0,035	0,035	0,060

Cutting data standard values – BlueLine – End mills – 52 344 ...

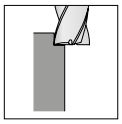
Index	Compressed air		Ø DC = 0,5 mm			Ø DC = 1,0–1,5 mm			Ø DC = 2,0–2,5 mm			Ø DC = 3,0–3,5 mm			Ø DC = 4,0 mm			Ø DC = 5,0 mm		
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.14	120	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
1.15	120	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
1.16	120	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
6.1	110	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
6.2	80	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
6.3	60	**0,5**	0,004	0,004	0,003	0,006	0,005	0,004	0,009	0,007	0,005	0,013	0,010	0,007	0,017	0,013	0,010	0,022	0,016	0,011
6.4	50	**0,5**	0,004	0,003	0,002	0,005	0,004	0,003	0,007	0,006	0,004	0,011	0,008	0,006	0,014	0,011	0,008	0,018	0,013	0,009

Cutting data standard values – BlueLine – torus cutters – 52 361 ...



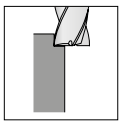
Index	Compressed air		Ø DC = 0,8–1,0 mm	Ø DC = 1,2–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm
			a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC
	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.15	200	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.16	200	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.1	190	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.2	170	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.3	150	**0,05**	0,006	0,008	0,012	0,024	0,036	0,060	0,072	0,084	0,096
6.4	110	**0,05**	0,005	0,007	0,010	0,020	0,030	0,050	0,060	0,070	0,080

Cutting data standard values – BlueLine – End mills – 52 353 ...



Index	Compressed air		Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC
	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.15	200	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.16	200	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.1	190	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.2	170	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.3	150	**0,05**	0,006	0,012	0,024	0,036	0,048	0,060	0,072	0,084	0,096	0,108
6.4	110	**0,05**	0,005	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090

Cutting data standard values – BlueLine – End mills – 52 354 ...

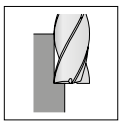


Index	Compressed air		Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC
	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.15	200	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.16	200	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.1	190	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.2	170	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.3	150	**0,05**	0,004	0,006	0,012	0,018	0,024	0,030	0,036	0,042	0,048	0,054
6.4	110	**0,05**	0,003	0,005	0,010	0,015	0,020	0,025	0,030	0,035	0,040	0,045

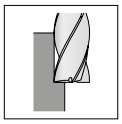
Cutting data standard values – BlueLine – Ball nosed end mills – 52 352 ... / 52 355 ...

Index	Compressed air		Ø DC = 0,6–0,8 mm	Ø DC = 1 mm	Ø DC = 1,2–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
1.15	200	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
1.16	200	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
6.1	190	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
6.2	170	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
6.3	150	**0,05**	0,004	0,006	0,008	0,012	0,024	0,036	0,048	0,060	0,072	0,084	0,096
6.4	110	**0,05**	0,004	0,005	0,007	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080

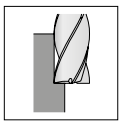
	Ø DC = 6,0 mm			Ø DC = 8,0 mm			Ø DC = 10,0 mm			Ø DC = 12,0 mm			Ø DC = 16,0 mm			Ø DC = 20,0 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.14	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
1.15	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
1.16	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
6.1	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
6.2	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
6.3	0,029	0,021	0,014	0,038	0,029	0,019	0,043	0,032	0,022	0,048	0,036	0,024	0,061	0,046	0,036	0,076	0,062	0,048
6.4	0,024	0,018	0,012	0,032	0,024	0,016	0,036	0,027	0,018	0,040	0,030	0,020	0,051	0,039	0,030	0,063	0,052	0,040



	Compressed air		Ø DC = 0,8–1,0 mm	Ø DC = 1,2–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm
			a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.15	200	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.16	200	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.1	**190**	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.2	**170**	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.3	**150**	**0,50**	0,006	0,008	0,012	0,024	0,036	0,060	0,072	0,084	0,096
6.4	**110**	**0,50**	0,005	0,007	0,010	0,020	0,030	0,050	0,060	0,070	0,080



	Compressed air		Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.15	200	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.16	200	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.1	**190**	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.2	**170**	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.3	**150**	**0,50**	0,006	0,012	0,024	0,036	0,048	0,060	0,072	0,084	0,096	0,108
6.4	**110**	**0,50**	0,005	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090



	Compressed air		Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.15	200	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.16	200	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.1	**190**	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.2	**170**	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.3	**150**	**0,50**	0,004	0,006	0,012	0,018	0,024	0,030	0,036	0,042	0,048	0,054
6.4	**110**	**0,50**	0,003	0,005	0,010	0,015	0,020	0,025	0,030	0,035	0,040	0,045

14

Cutting data standard values – BlueLine – End mills – 52 348 ...

	Compressed air		Ø DC = 6 mm		Ø DC = 8 mm		Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		Ø DC = 20 mm	
			a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm											
1.14	120	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
1.15	120	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
1.16	120	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
6.1	**115**	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
6.2	**100**	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
6.3	**90**	**2,0**		0,017		0,019		0,022		0,025		0,030		0,036
6.4	**60**	**2,0**	0,014		0,016		0,018		0,021		0,025		0,030	

Cutting data standard values – BlueLine – End mills – 52 345 ... – 52 351 ... / 52 362 ...

	Compressed air		$T_X \leq 2,5 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
1.15	190	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
1.16	190	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
6.1	**180**	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
6.2	**120**	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
6.3	**70**	**0,50**	0,0030	0,0036	0,0120	0,0062	0,0074	0,0104	0,0132	0,0144	0,0156	0,0168	0,0180	0,0192
6.4	**50**	**0,50**	0,0025	0,0030	0,0100	0,0052	0,0062	0,0087	0,0110	0,0120	0,0130	0,0140	0,0150	0,0160

	Compressed air		$T_X = 2,6–5,0 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	171	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
1.15	171	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
1.16	171	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
6.1	**162**	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
6.2	**108**	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
6.3	**63**	**0,50**	0,0030	0,0032	0,0036	0,0050	0,0060	0,0082	0,0107	0,0121	0,0126	0,0140	0,0156	0,0156
6.4	**45**	**0,50**	0,0025	0,0027	0,0030	0,0042	0,0050	0,0068	0,0089	0,0101	0,0105	0,0117	0,0130	0,0130

	Compressed air		$T_X = 5,1–10,0 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	152	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
1.15	152	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
1.16	152	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
6.1	**144**	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
6.2	**96**	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
6.3	**56**	**0,50**	0,0024	0,0030	0,0036	0,0048	0,0054	0,0060	0,0066	0,0072	0,0084	0,0090	0,0096	0,0102
6.4	**40**	**0,50**	0,0020	0,0025	0,0030	0,0040	0,0045	0,0050	0,0055	0,0060	0,0070	0,0075	0,0080	0,0085

Cutting data standard values – BlueLine – End mills – 52 356 ...-52 360 ...

	Compressed air		$T_X \leq 2,5 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
1.15	190	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
1.16	190	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
6.1	180	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
6.2	120	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
6.3	70	0,50	0,0012	0,0018	0,0024	0,0030	0,0036	0,0042	0,0048	0,0050	0,0053	0,0055	0,0058	0,0060
6.4	50	0,50	0,0010	0,0015	0,0020	0,0025	0,0030	0,0035	0,0040	0,0042	0,0044	0,0046	0,0048	0,0050

	Compressed air		$T_X = 2,6–5,0 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	171	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
1.15	171	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
1.16	171	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
6.1	**162**	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
6.2	**108**	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
6.3	**63**	**0,50**	0,0008	0,0011	0,0014	0,0018	0,0020	0,0023	0,0025	0,0028	0,0030	0,0032	0,0035	0,0038
6.4	**45**	**0,50**	0,0007	0,0009	0,0012	0,0015	0,0017	0,0019	0,0021	0,0023	0,0025	0,0027	0,0029	0,0032

			T_x = 10,1–15,0 x DC											
	Compressed air	Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	114	**0,50**	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
1.15	114	**0,50**	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
1.16	114	**0,50**	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
6.1	**108**	**0,50**	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
6.2	**72**	**0,50**	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
6.3	**42**	**0,50**	0,0012	0,0018	0,0024	0,0030	0,0036	0,0038	0,0041	0,0043	0,0046	0,0048	0,0050	0,0053
6.4	**30**	**0,50**	0,0010	0,0015	0,0020	0,0025	0,0030	0,0032	0,0034	0,0036	0,0038	0,0040	0,0042	0,0044

			T_x = 15,1–20,0 x DC											
	Compressed air	Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	76	**0,50**	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
1.15	76	**0,50**	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
1.16	76	**0,50**	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
6.1	**72**	**0,50**	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
6.2	**48**	**0,50**	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
6.3	**28**	**0,50**	0,0012	0,0012	0,0018	0,0024	0,0030	0,0036	0,0038	0,0041	0,0043	0,0046	0,0048	0,0050
6.4	**20**	**0,50**	0,0010	0,0010	0,0015	0,0020	0,0025	0,0030	0,0032	0,0034	0,0036	0,0038	0,0040	0,0042

			T_x = 20,1–30,0 x DC											
	Compressed air	Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	57	**0,50**	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
1.15	57	**0,50**	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
1.16	57	**0,50**	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
6.1	**54**	**0,50**	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
6.2	**36**	**0,50**	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
6.3	**21**	**0,50**	0,001	0,001	0,002	0,002	0,002	0,003	0,003	0,003	0,003	0,004	0,004	0,004
6.4	**15**	**0,50**	0,0008	0,0010	0,0013	0,0017	0,0019	0,0022	0,0025	0,0027	0,0029	0,0030	0,0031	0,0032

			T_x = 5,1–10,0 x DC											
	Compressed air	Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	152	**0,50**	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
1.15	152	**0,50**	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
1.16	152	**0,50**	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
6.1	**144**	**0,50**	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
6.2	**96**	**0,50**	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
6.3	**56**	**0,50**	0,0005	0,0007	0,0010	0,0012	0,0014	0,0017	0,0019	0,0022	0,0024	0,0026	0,0029	0,0031
6.4	**40**	**0,50**	0,0004	0,0006	0,0008	0,0010	0,0012	0,0014	0,0016	0,0018	0,0020	0,0022	0,0024	0,0026

			T_x = 10,1–15,0 x DC											
	Compressed air	Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	114	**0,50**	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
1.15	114	**0,50**	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
1.16	114	**0,50**	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
6.1	**108**	**0,50**	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
6.2	**72**	**0,50**	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
6.3	**42**	**0,50**	0,0002	0,0005	0,0007	0,0010	0,0012	0,0014	0,0017	0,0019	0,0022	0,0024	0,0026	0,0029
6.4	**30**	**0,50**	0,0002	0,0004	0,0006	0,0008	0,0010	0,0012	0,0014	0,0016	0,0018	0,0020	0,0022	0,0024

Cutting data – Micro End Mills – 2.2xD

		Ø DC = 0,2 mm					Ø DC = 0,5 mm					Ø DC = 0,8 mm				
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC
	$a_{p\,max.}$	0,02	0,02	0,02	0,01	0,01	0,1	0,1	0,1	0,1	0,05	$a_{p\,max.}$	0,2	0,2	0,2	0,2	0,12
	$n_{min.}$	30.000					12.000					$n_{min.}$	8.000				
Index	n	v_f mm/min.					v_f mm/min.					n	v_f mm/min.				
1.1	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.2	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.3	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.4	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.5	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.6	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.7	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.8	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.9	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.10	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.11	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.12	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.13	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.14	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.15	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.16	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
2.1	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.2	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.3	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.4	50.000	232	202	174	144	116	219	191	164	136	110	32.000	346	301	260	215	173
2.5	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.6	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.7	50.000	232	202	174	144	116	219	191	164	136	110	25.000	312	271	234	193	156
3.1	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.2	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.3	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.4	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.5	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
3.6	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
3.7	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
3.8	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
4.1	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.2	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.3																	
4.4																	
4.5																	
4.6	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.7	50.000	232	202	174	144	116	274	238	205	170	137	44.000	485	422	364	301	242
4.8	50.000	126	110	95	78	63	134	117	101	83	67	25.000	170	148	127	105	85
4.9	50.000	126	110	95	78	63	107	93	80	67	54	19.000	147	128	110	91	74
4.10	50.000	126	110	95	78	63	112	97	84	69	56	19.000	158	138	119	98	79
4.11	50.000	232	202	174	144	116	274	238	205	170	137	44.000	485	422	364	301	242
4.12	50.000	232	202	174	144	116	274	238	205	170	137	44.000	485	422	364	301	242
4.13	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.14	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.15	50.000	212	185	159	132	106	200	174	150	124	100	38.000	316	275	237	196	158
4.16	50.000	212	185	159	132	106	250	218	188	155	125	50.000	531	462	398	329	266
4.17																	
4.18	50.000	141	123	106	88	71	150	131	113	93	75	31.000	221	193	166	137	111
4.19																	
5.1	50.000	72	62	54	44	36	89	77	66	55	44	25.000	102	89	76	63	51
5.2	50.000	72	62	54	44	36	89	77	66	55	44	25.000	102	89	76	63	51
5.3	50.000	72	62	54	44	36	89	77	66	55	44	25.000	91	79	68	56	45
5.4	50.000	54	47	41	34	27	66	57	49	41	33	12.000	78	68	59	49	39
5.5	50.000	54	47	41	34	27	66	57	49	41	33	12.000	78	68	59	49	39
5.6	50.000	63	54	47	39	31	76	66	57	47	38	19.000	91	79	68	56	45
5.7	50.000	46	40	35	29	23	55	48	41	34	27	19.000	69	60	51	43	34
5.8	50.000	46	40	35	29	23	55	48	41	34	27	19.000	78	68	59	49	39
5.9	50.000	114	99	85	71	57	164	143	123	102	82	44.000	114	99	85	71	57
5.10	50.000	114	99	85	71	57	164	143	123	102	82	44.000	164	143	123	102	82
5.11	50.000	70	61	53	43	35	85	74	64	53	42	38.000	101	88	76	63	51
6.1	50.000	219	191	164	136	110	232	202	174	144	116	50.000	388	338	291	241	194
6.2	50.000	201	175	151	125	101	285	248	213	176	142	38.000	336	292	252	208	168
6.3	50.000	114	99	85	71	57	134	117	101	83	67	25.000	156	136	117	97	78
6.4	50.000	107	93	80	67	54	126	110	95	78	63	25.000	141	123	106	88	71
6.5																	

		Ø DC = 1,0 mm					Ø DC = 1,5 mm					●	○
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6 –1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	1st choice	suitable
	$a_{p\,max.}$	0,3	0,3	0,3	0,3	0,2	$a_{p\,max.}$	0,45	0,45	0,45	0,45	0,3		
	$n_{min.}$	6.500					$n_{min.}$	6.500						
Index	n	v_f mm/min.					n	v_f mm/min.					Emulsion	Compressed air / MMS
1.1	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.2	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.3	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.4	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.5	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.6	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.7	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.8	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.9	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.10	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.11	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.12	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.13	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.14	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
1.15	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		● / ○
1.16	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		● / ○
2.1	38.000	589	512	442	365	294	25.000	850	740	638	527	425		● / ○
2.2	38.000	589	512	442	365	294	25.000	850	740	638	527	425		● / ○
2.3	38.000	589	512	442	365	294	25.000	850	740	638	527	425		● / ○
2.4	32.000	496	431	372	307	248	21.000	760	661	570	471	380		● / ○
2.5	38.000	589	512	442	365	294	25.000	850	740	638	527	425		● / ○
2.6	38.000	589	512	442	365	294	25.000	850	740	638	527	425		● / ○
2.7	25.000	465	404	349	288	232	16.000	640	557	480	397	320		● / ○
3.1	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		● / ○
3.2	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		● / ○
3.3	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		● / ○
3.4	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		● / ○
3.5	32.000	389	338	292	241	194	21.000	548	477	411	340	274		● / ○
3.6	32.000	389	338	292	241	194	21.000	548	477	411	340	274		● / ○
3.7	32.000	389	338	292	241	194	21.000	548	477	411	340	274		● / ○
3.8	32.000	389	338	292	241	194	21.000	548	477	411	340	274		● / ○
4.1	50.000	930	809	697	576	465	50.000	1500	1305	1125	930	750		● / ○
4.2	50.000	930	809	697	576	465	50.000	1500	1305	1125	930	750		● / ○
4.3														
4.4														
4.5														
4.6	50.000	930	809	697	576	465	38.000	1400	1218	1050	868	700		● / ○
4.7	44.000	775	674	581	480	387	29.000	1160	1009	870	719	580		● / ○
4.8	25.000	266	231	199	165	133	16.000	392	341	294	243	196		● / ○
4.9	19.000	202	176	152	125	101	12.000	286	249	214	177	143		● / ○
4.10	19.000	202	176	152	125	101	12.000	286	249	214	177	143		● / ○
4.11	44.000	775	674	581	480	387	29.000	1160	1009	870	719	580		● / ○
4.12	44.000	775	674	581	480	387	29.000	1160	1009	870	719	580		● / ○
4.13	50.000	930	809	697	576	465	33.000	1320	1148	990	818	660		● / ○
4.14	50.000	930	809	697	576	465	38.000	1520	1322	1140	942	760		● / ○
4.15	38.000	495	431	371	307	247	25.000	685	596	513	424	342		● / ○
4.16	50.000	849	738	636	526	424	38.000	1388	1207	1041	860	694		● / ○
4.17														
4.18	31.000	354	308	265	219	177	21.000	529	461	397	328	265		● / ○
4.19														
5.1	25.000	152	132	114	94	76	16.000	294	256	220	182	147		● / ○
5.2	25.000	152	132	114	94	76	16.000	294	256	220	182	147		● / ○
5.3	25.000	152	132	114	94	76	16.000	294	256	220	182	147		● / ○
5.4	12.000	110	95	82	68	55	8.000	170	148	127	105	85		● / ○
5.5	12.000	131	114	99	82	66	8.000	255	221	191	158	127		● / ○
5.6	19.000	152	132	114	94	76	12.000	294	256	220	182	147		● / ○
5.7	19.000	99	86	74	61	49	12.000	170	148	127	105	85		● / ○
5.8	19.000	131	114	99	82	66	12.000	255	221	191	158	127		● / ○
5.9	44.000	170	148	127	105	85	29.000	329	286	246	204	164		● / ○
5.10	44.000	247	215	186	153	124	29.000	365	318	274	226	183		● / ○
5.11	38.000	170	148	127	105	85	25.000	329	286	246	204	164		● / ○
6.1	50.000	620	539	465	384	310	33.000	850	740	638	527	425		●
6.2	38.000	537	467	402	333	268	25.000	779	678	585	483	390		●
6.3	25.000	235	204	176	146	117	16.000	346	301	260	215	173		●
6.4	25.000	221	193	166	137	111	16.000	327	284	245	202	163		●
6.5														

Cutting data – Micro End Mills – 2.2xD

		Ø DC = 1,8 mm					Ø DC = 2,0 mm					●	○	
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	1st choice		suitable
	$a_{p\,max.}$	0,54	0,54	0,54	0,54	0,36	0,6	0,6	0,6	0,6	0,4	Emulsion	Compressed air	MMS
	$n_{min.}$	5.500					5.000							
Index	n	v_f mm/min.					n	v_f mm/min.						
1.1	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.2	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.3	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.4	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.5	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.6	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.7	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.8	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.9	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.10	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.11	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.12	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.13	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.14	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.15	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.16	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
2.1	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.2	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.3	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.4	18.000	800	696	600	496	400	15.000	840	730	630	520	420		●	○
2.5	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.6	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.7	14.000	680	592	510	422	340	12.000	720	620	540	450	360		●	○
3.1	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.2	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.3	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.4	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.5	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
3.6	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
3.7	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
3.8	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
4.1	44.000	1800	1566	1350	1116	900	25.000	1500	1300	1125	930	750		●	○
4.2	44.000	1800	1566	1350	1116	900	25.000	1500	1300	1125	930	750		●	○
4.3															
4.4															
4.5															
4.6	32.000	1520	1322	1140	942	760	25.000	1500	1300	1125	930	750		●	○
4.7	25.000	1250	1088	938	775	625	25.000	1500	1300	1125	930	750		●	○
4.8	14.000	500	435	375	310	250	25.000	1500	1300	1125	930	750		●	○
4.9	10.000	370	322	278	229	185	19.000	1140	990	855	700	570		●	○
4.10	10.000	370	322	278	229	185	19.000	1140	990	855	700	570		●	○
4.11	25.000	1250	1088	938	775	625	19.000	1140	990	855	700	570		●	○
4.12	25.000	1250	1088	938	775	625	15.000	840	730	630	520	420		●	○
4.13	28.000	1400	1218	1050	868	700	19.000	1140	990	855	700	570		●	○
4.14	33.000	1560	1357	1170	967	780	19.000	1140	990	855	700	570		●	○
4.15	22.000	800	696	600	496	400	12.000	720	630	540	450	360		●	○
4.16	33.000	1560	1357	1170	967	780	25.000	1500	1300	1125	930	750		●	○
4.17															
4.18	29.000	300	261	225	186	150	25.000	1500	1300	1125	930	750		●	○
4.19															
5.1	14.000	400	348	300	248	200	25.000	1500	1300	1125	930	750		●	○
5.2	14.000	400	348	300	248	200	25.000	1500	1300	1125	930	750		●	○
5.3	14.000	420	365	315	260	210	25.000	1500	1300	1125	930	750		●	○
5.4	7.000	250	218	188	155	125	25.000	1500	1300	1125	930	750		●	○
5.5	7.000	370	322	278	229	185	25.000	1500	1300	1125	930	750		●	○
5.6	10.000	370	322	278	229	185	25.000	1500	1300	1125	930	750		●	○
5.7	10.000	280	244	210	174	140	25.000	1500	1300	1125	930	750		●	○
5.8	10.000	370	322	278	229	185	25.000	1500	1300	1125	930	750		●	○
5.9	25.000	400	348	300	248	200	25.000	1500	1300	1125	930	750		●	○
5.10	25.000	480	418	360	298	240	25.000	1500	1300	1125	930	750		●	○
5.11	22.000	380	331	285	236	190	25.000	1500	1300	1125	930	750		●	○
6.1	29.000	1200	1044	900	744	600	25.000	1500	1300	1125	930	750		●	
6.2	22.000	1000	870	750	620	500	19.000	1140	990	855	700	570		●	
6.3	14.000	420	365	315	260	210	19.000	1140	990	855	700	570		●	
6.4	14.000	420	365	315	260	210	19.000	1140	990	855	700	570		●	
6.5															

Cutting data – Micro End Mills – 5xD

		Ø DC = 0,2 mm					Ø DC = 0,5 mm					Ø DC = 0,8 mm					● 1st choice		○ suitable
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	Emulsion	Compressed air	MMS
	$a_{p\,max.}$	0,012	0,012	0,012	0,012	$a_{p\,max.}$	0,06	0,06	0,06	0,06	$a_{p\,max.}$	0,12	0,12	0,12	0,12	0,064			
	$n_{min.}$	30.000				$n_{min.}$	12.000				$n_{min.}$	8.000							
Index	n	v_f mm/min.				n	v_f mm/min.				n	v_f mm/min.							
1.1	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.2	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.3	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.4	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.5	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.6	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.7	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.8	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.9	50.000	232	202	174	144	50.000	274	238	205	170	31.000	381	332	286	236	191		●	○
1.10	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.11	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.12	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.13	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.14	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
1.15	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○
1.16	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○
2.1	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○
2.2	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○
2.3	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○
2.4	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○
2.5	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○
2.6	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○
2.7	50.000	232	202	174	144	38.000	192	167	144	119	19.000	263	229	197	163	132		●	○
3.1	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○
3.2	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○
3.3	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○
3.4	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○
3.5	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○
3.6	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○
3.7	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○
3.8	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○
4.1	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○
4.2	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○
4.3																			
4.4																			
4.5																			
4.6	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○
4.7	50.000	232	202	174	144	50.000	274	238	205	170	38.000	554	482	416	344	277		●	○
4.8	50.000	126	110	95	78	44.000	134	117	101	83	22.000	204	177	153	126	102		●	○
4.9	50.000	126	110	95	78	31.000	112	97	84	69	15.000	170	148	127	105	85		●	○
4.10	50.000	126	110	95	78	31.000	112	97	84	69	15.000	170	148	127	105	85		●	○
4.11	50.000	232	202	174	144	50.000	274	238	205	170	38.000	485	422	364	301	242		●	○
4.12	50.000	232	202	174	144	50.000	274	238	205	170	38.000	485	422	364	301	242		●	○
4.13	50.000	232	202	174	144	50.000	274	238	205	170	44.000	554	482	416	344	277		●	○
4.14	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○
4.15	50.000	141	123	106	88	50.000	200	174	150	124	31.000	316	275	237	196	158		●	○
4.16	50.000	212	185	159	132	50.000	250	218	188	155	50.000	506	440	379	314	253		●	○
4.17																			
4.18	50.000	141	123	106	88	50.000	150	131	113	93	25.000	253	220	190	157	126		●	○
4.19																			
5.1	50.000	63	54	47	39	44.000	76	66	57	47	22.000	91	79	68	56	45		●	○
5.2	50.000	63	54	47	39	44.000	76	66	57	47	22.000	91	79	68	56	45		●	○
5.3	50.000	63	54	47	39	44.000	76	66	57	47	22.000	91	79	68	56	45		●	○
5.4	50.000	46	40	35	29	25.000	55	48	41	34	12.000	88	77	66	55	44		●	○
5.5	50.000	46	40	35	29	25.000	55	48	41	34	12.000	78	68	59	49	39		●	○
5.6	50.000	54	47	40	33	31.000	63	55	47	39	15.000	91	79	68	56	45		●	○
5.7	50.000	55	48	41	32	31.000	58	51	44	36	15.000	98	85	73	61	49		●	○
5.8	50.000	55	47	40	32	31.000	58	51	44	36	15.000	98	85	73	61	49		●	○
5.9	50.000	60	61	48	41	50.000	71	62	53	44	38.000	114	99	85	71	57		●	○
5.10	50.000	60	61	48	41	50.000	71	62	53	44	38.000	126	110	95	78	63		●	○
5.11	50.000	60	52	45	37	50.000	71	62	49	39	31.000	89	77	66	55	44		●	○
6.1	50.000	155	135	116	96	50.000	164	143	123	102	44.000	346	301	260	215	173		●	
6.2	50.000	95	83	71	59	50.000	134	117	101	83	31.000	180	157	135	112	90		●	
6.3	50.000	95	83	71	59	44.000	134	117	101	83	22.000	180	157	135	112	90		●	
6.4	50.000	89	78	67	55	44.000	126	110	95	78	22.000	170	148	127	105	85		●	
6.5																			

a_e = 0.6–1.0 x DC: If values are missing, only trochoidal slot milling and profiling are permitted. Otherwise, there is the risk of tool breakage.

14

Cutting data – Micro End Mills – 5xD

		Ø DC = 1,0 mm					Ø DC = 1,5 mm					Ø DC = 1,8 mm				
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC
	$a_{p\,max.}$	0,3	0,3	0,3	0,3	0,2	$a_{p\,max.}$	0,3	0,3	0,3	0,3	0,2	$a_{p\,max.}$	0,54	0,54	0,54	0,54	0,36
	$n_{min.}$	6.500					$n_{min.}$	6.500					$n_{min.}$	5.500				
Index	n	v_f mm/min.					n	v_f mm/min.					n	v_f mm/min.				
1.1	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.2	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.3	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.4	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.5	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.6	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.7	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.8	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.9	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
1.10	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.11	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.12	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.13	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.14	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.15	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.16	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
2.1	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.2	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.3	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.4	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.5	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.6	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.7	19.000	310	270	232	192	155	12.000	480	418	360	298	240	10.000	500	435	375	310	250
3.1	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.2	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.3	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.4	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.5	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
3.6	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
3.7	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
3.8	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
4.1	50.000	775	674	581	480	387	42.000	1200	1044	900	744	600	36.000	1500	1305	1125	930	750
4.2	50.000	775	674	581	480	387	42.000	1200	1044	900	744	600	36.000	1500	1305	1125	930	750
4.3																		
4.4																		
4.5																		
4.6	50.000	930	809	697	576	465	33.000	1320	1148	990	818	660	28.000	1400	1218	1050	868	700
4.7	38.000	705	613	529	437	352	25.000	1000	870	750	620	500	22.000	1080	940	810	670	540
4.8	22.000	278	242	209	173	139	14.000	343	298	257	213	171	12.000	450	392	338	279	225
4.9	15.000	190	165	142	118	95	10.000	245	213	184	152	122	8.000	300	261	225	186	150
4.10	15.000	190	165	142	118	95	10.000	245	213	184	152	122	8.000	300	261	225	186	150
4.11	38.000	697	607	523	432	349	25.000	1000	870	750	620	500	22.000	1100	957	825	682	550
4.12	38.000	697	607	523	432	349	25.000	1000	870	750	620	500	22.000	1100	957	825	682	550
4.13	44.000	813	708	610	504	407	29.000	1160	1009	870	719	580	25.000	1200	1044	900	744	600
4.14	50.000	930	809	697	576	465	33.000	1320	1148	990	818	660	28.000	1400	1218	1050	868	700
4.15	31.000	438	381	329	272	219	21.000	575	500	431	357	288	18.000	650	566	488	403	325
4.16	50.000	849	738	636	526	424	33.000	1205	1048	904	747	602	28.000	1400	1218	1050	868	700
4.17																		
4.18	25.000	318	277	239	197	159	16.000	438	381	329	272	219	14.000	500	435	375	310	250
4.19																		
5.1	22.000	114	99	85	71	57	14.000	196	170	147	121	98	12.000	300	261	225	186	150
5.2	22.000	114	99	85	71	57	14.000	196	170	147	121	98	12.000	300	261	225	186	150
5.3	22.000	114	99	85	71	57	14.000	196	170	147	121	98	12.000	300	261	225	186	150
5.4	12.000	110	95	82	68	55	8.000	170	148	127	105	85	7.000	240	209	180	149	120
5.5	12.000	131	114	99	82	66	8.000	170	148	127	105	85	7.000	240	209	180	149	120
5.6	15.000	152	132	114	94	76	10.000	245	213	184	152	122	8.000	300	261	225	186	150
5.7	15.000	120	105	90	75	60	10.000	184	160	138	114	92	8.000	280	244	210	174	140
5.8	15.000	120	105	90	75	60	10.000	184	160	138	114	92	8.000	280	244	210	174	140
5.9	38.000	156	135	117	96	78	25.000	274	238	205	170	137	22.000	380	331	285	236	190
5.10	38.000	212	185	159	132	106	25.000	365	318	274	226	183	22.000	450	392	338	279	225
5.11	31.000	127	111	95	79	64	21.000	201	175	151	125	100	18.000	300	261	225	186	150
6.1	44.000	426	371	320	264	213	29.000	600	522	450	372	300	25.000	800	696	600	496	400
6.2	31.000	201	175	151	125	101	21.000	346	301	260	215	173	16.000	500	435	375	310	250
6.3	22.000	235	204	176	146	117	14.000	346	301	260	215	173	12.000	450	392	338	279	225
6.4	22.000	221	193	166	137	111	14.000	327	284	245	202	163	12.000	450	392	338	279	225
6.5																		

		Ø DC = 2,0 mm					●		○
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	1st choice		suitable
	$a_{p\,max.}$	0,6	0,6	0,6	0,6	0,4	Emulsion	Compressed air	MMS
	$n_{min.}$	5.000							
Index	n	v_f mm/min.							
1.1	22.000	1320	1148	990	818	660		●	○
1.2	22.000	1320	1148	990	818	660		●	○
1.3	22.000	1320	1148	990	818	660		●	○
1.4	22.000	1320	1148	990	818	660		●	○
1.5	22.000	1320	1148	990	818	660		●	○
1.6	15.000	900	783	675	558	450		●	○
1.7	22.000	1320	1148	990	818	660		●	○
1.8	15.000	900	783	675	558	450		●	○
1.9	15.000	900	783	675	558	450		●	○
1.10	15.000	900	783	675	558	450		●	○
1.11	15.000	900	783	675	558	450		●	○
1.12	15.000	900	783	675	558	450		●	○
1.13	15.000	900	783	675	558	450		●	○
1.14	15.000	900	783	675	558	450		●	○
1.15	22.000	1320	1148	990	818	660		●	○
1.16	15.000	900	783	675	558	450		●	○
2.1	15.000	900	783	675	558	450		●	○
2.2	15.000	900	783	675	558	450		●	○
2.3	15.000	900	783	675	558	450		●	○
2.4	15.000	900	783	675	558	450		●	○
2.5	15.000	900	783	675	558	450		●	○
2.6	15.000	900	783	675	558	450		●	○
2.7	9.000	540	470	405	335	270		●	○
3.1	25.000	1500	1305	1125	930	750		●	○
3.2	25.000	1500	1305	1125	930	750		●	○
3.3	25.000	1500	1305	1125	930	750		●	○
3.4	25.000	1500	1305	1125	930	750		●	○
3.5	12.000	520	452	390	322	260		●	○
3.6	12.000	520	452	390	322	260		●	○
3.7	12.000	520	452	390	322	260		●	○
3.8	12.000	520	452	390	322	260		●	○
4.1	31.000	1860	1618	1395	1153	930		●	○
4.2	31.000	1860	1618	1395	1153	930		●	○
4.3									
4.4									
4.5									
4.6	25.000	1500	1305	1125	930	750		●	○
4.7	19.000	1140	992	855	707	570		●	○
4.8	11.000	480	418	360	298	240		●	○
4.9	7.000	300	261	225	186	150		●	○
4.10	7.000	300	261	225	186	150		●	○
4.11	19.000	1140	992	855	707	570		●	○
4.12	19.000	1140	992	855	707	570		●	○
4.13	22.000	1320	1148	990	818	660		●	○
4.14	25.000	1500	1305	1125	930	750		●	○
4.15	15.000	660	574	495	409	330		●	○
4.16	25.000	1500	1305	1125	930	750		●	○
4.17									
4.18	12.000	520	452	390	322	260		●	○
4.19									
5.1	11.000	400	348	300	248	200		●	○
5.2	11.000	400	348	300	248	200		●	○
5.3	11.000	400	348	300	248	200		●	○
5.4	6.000	260	226	195	161	130		●	○
5.5	6.000	260	226	195	161	130		●	○
5.6	7.000	300	261	225	186	150		●	○
5.7	7.000	300	261	225	186	150		●	○
5.8	7.000	300	261	225	186	150		●	○
5.9	19.000	420	365	315	260	210		●	○
5.10	19.000	500	435	375	310	250		●	○
5.11	15.000	400	348	300	248	200		●	○
6.1	22.000	1000	870	750	620	500		●	
6.2	15.000	500	435	375	310	250		●	
6.3	11.000	480	418	360	298	240		●	
6.4	11.000	480	418	360	298	240		●	
6.5									

Cutting data – Micro end mills – 10xD

		Ø DC = 0,2 mm				Ø DC = 0,5 mm					Ø DC = 0,8 mm				Ø DC = 1,0 mm			
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC
	$a_{p\,max.}$	0,006	0,006	0,006	0,006	0,015	0,015	0,015	0,015	$a_{p\,max.}$	0,024	0,024	0,024	0,024	0,03	0,03	0,03	0,03
	$n_{min.}$	30.000				12.000				$n_{min.}$	8.000				6.500			
Index	n	v_f mm/min.				v_f mm/min.				n	v_f mm/min.				v_f mm/min.			
1.1	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.2	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.3	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.4	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.5	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.6	50.000	201	175	151	125	190	165	142	118	25.000	300	261	225	186	335	292	252	208
1.7	50.000	232	202	174	144	219	191	164	136	38.000	450	392	338	279	589	512	442	365
1.8	50.000	201	175	151	125	190	165	142	118	25.000	300	261	225	186	335	292	252	208
1.9	50.000	232	202	174	144	219	191	164	136	38.000	450	392	338	279	589	512	442	365
1.10	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.11	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.12	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.13	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.14	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.15	50.000	232	202	174	144	219	191	164	136	38.000	450	392	338	279	589	512	442	365
1.16	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
2.1	50.000	155	135	116	96	208	181	156	129	25.000	312	271	234	193	387	337	290	240
2.2	50.000	155	135	116	96	208	181	156	129	25.000	312	271	234	193	387	337	290	240
2.3	50.000	155	135	116	96	208	181	156	129	25.000	312	271	234	193	387	337	290	240
2.4	50.000	155	135	116	96	164	143	123	102	19.000	242	211	182	150	294	256	221	182
2.5	50.000	155	135	116	96	219	191	164	136	25.000	312	271	234	193	387	337	290	240
2.6	50.000	155	135	116	96	219	191	164	136	25.000	312	271	234	193	387	337	290	240
2.7	50.000	155	135	116	96	170	148	127	105	15.000	236	205	177	146	279	243	209	173
3.1	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.2	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.3	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.4	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.5	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
3.6	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
3.7	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
3.8	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
4.1	50.000	232	202	174	144	438	381	329	272	50.000	693	603	520	430	930	809	697	576
4.2	50.000	232	202	174	144	438	381	329	272	50.000	693	603	520	430	930	809	697	576
4.3																		
4.4																		
4.5																		
4.6	50.000	232	202	174	144	274	238	205	170	44.000	416	362	312	258	542	472	407	336
4.7	50.000	232	202	174	144	274	238	205	170	31.000	402	350	301	249	480	418	360	298
4.8	50.000	126	110	95	78	134	117	101	83	19.000	170	148	127	105	190	165	142	118
4.9	50.000	126	110	95	78	89	78	67	55	12.000	136	118	102	84	152	132	114	94
4.10	50.000	126	110	95	78	89	78	67	55	12.000	136	118	102	84	152	132	114	94
4.11	50.000	232	202	174	144	274	238	205	170	31.000	402	350	301	249	480	418	360	298
4.12	50.000	232	202	174	144	274	238	205	170	31.000	402	350	301	249	480	418	360	298
4.13	50.000	232	202	174	144	329	286	246	204	38.000	554	482	416	344	705	613	529	437
4.14	50.000	232	202	174	144	329	286	246	204	44.000	554	482	416	344	813	708	610	504
4.15	50.000	141	123	106	88	200	174	150	124	25.000	285	248	213	176	339	295	255	210
4.16	50.000	212	185	159	132	300	261	225	186	44.000	506	440	379	314	742	646	557	460
4.17																		
4.18	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	255	221	191	158
4.19																		
5.1	50.000	54	47	40	33	63	55	47	39	19.000	79	69	59	49	101	88	76	63
5.2	50.000	54	47	40	33	63	55	47	39	19.000	91	79	68	56	114	99	85	71
5.3	50.000	54	47	40	33	63	55	47	39	19.000	102	89	76	63	126	110	95	78
5.4	50.000	46	40	35	29	55	48	41	34	12.000	88	77	66	55	110	95	82	68
5.5	50.000	46	40	35	29	55	48	41	34	12.000	59	51	44	36	82	71	62	51
5.6	50.000	54	47	40	33	63	55	47	39	12.000	79	69	59	49	101	88	76	63
5.7	50.000	46	40	35	29	55	48	41	34	12.000	69	60	51	43	88	76	66	54
5.8	50.000	46	40	35	29	55	48	41	34	12.000	69	60	51	43	88	76	66	54
5.9	50.000	60	52	45	37	71	62	53	44	31.000	101	88	76	63	141	123	106	88
5.10	50.000	60	52	45	37	71	62	53	44	31.000	101	88	76	63	177	154	133	110
5.11	50.000	60	52	45	37	71	62	53	44	25.000	89	77	66	55	141	123	106	88
6.1	50.000	77	67	58	48	82	71	62	51	38.000	173	151	130	107	194	168	145	120
6.2	50.000	47	41	36	29	67	58	50	42	25.000	90	78	68	56	101	88	75	62
6.3	50.000	47	41	36	29	67	58	50	42	19.000	90	78	68	56	101	88	75	62
6.4	50.000	45	39	34	28	63	55	47	39	19.000	85	74	64	53	95	83	71	59
6.5																		

a_e = 0,6–1,0 x DC: Missing values only trochodial slotting and milling is recommended. Otherwise there is the risk of tool breakage.

		Ø DC = 1,5 mm				Ø DC = 1,8 mm					Ø DC = 2,0 mm					●	○
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	1st choice	suitable
	$a_{p\,max.}$	0,06	0,06	0,06	0,06	$a_{p\,max.}$	0,072	0,072	0,072	0,072	$a_{p\,max.}$	0,08	0,08	0,08	0,08	Emulsion	Compressed air	MMS
	$n_{min.}$	6.500				$n_{min.}$	5.500				$n_{min.}$	5.000						
Index	n	v_f mm/min.				n	v_f mm/min.				n	v_f mm/min.						
1.1	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.2	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.3	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.4	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.5	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.6	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.7	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.8	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.9	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.10	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.11	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.12	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.13	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.14	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.15	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.16	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
2.1	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.2	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.3	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.4	12.000	400	348	300	248	10.000	450	392	338	279	9.000	540	470	405	335		●	○
2.5	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.6	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.7	10.000	380	331	285	236	8.000	400	348	300	248	7.000	420	365	315	260		●	○
3.1	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.2	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.3	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.4	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.5	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
3.6	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
3.7	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
3.8	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
4.1	38.000	1520	1322	1140	942	33.000	1600	1392	1200	992	28.000	1680	1462	1260	1042		●	○
4.2	38.000	1520	1322	1140	942	33.000	1600	1392	1200	992	28.000	1680	1462	1260	1042		●	○
4.3																		
4.4																		
4.5																		
4.6	29.000	900	783	675	558	25.000	1000	870	750	620	22.000	1140	992	855	707		●	○
4.7	21.000	800	696	600	496	18.000	900	783	675	558	15.000	900	783	675	558		●	○
4.8	12.000	294	256	220	182	10.000	260	226	195	161	9.000	390	339	293	242		●	○
4.9	8.000	196	170	147	121	7.000	260	226	195	161	6.000	260	226	195	161		●	○
4.10	8.000	196	170	147	121	7.000	260	226	195	161	6.000	260	226	195	161		●	○
4.11	21.000	800	696	600	496	18.000	850	740	638	527	15.000	900	783	675	558		●	○
4.12	21.000	800	696	600	496	18.000	850	740	638	527	15.000	900	783	675	558		●	○
4.13	25.000	1000	870	750	620	18.000	1000	870	750	620	19.000	1140	992	855	707		●	○
4.14	29.000	1160	1009	870	719	25.000	1200	1044	900	744	22.000	1320	1148	990	818		●	○
4.15	16.000	438	381	329	272	14.000	500	435	375	310	12.000	520	452	390	322		●	○
4.16	29.000	1059	921	794	657	25.000	1200	1044	900	744	22.000	1320	1148	990	818		●	○
4.17																		
4.18	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
4.19																		
5.1	12.000	163	142	122	101	10.000	300	261	225	186	9.000	380	331	285	236		●	○
5.2	12.000	204	178	153	127	10.000	300	261	225	186	9.000	380	331	285	236		●	○
5.3	12.000	204	178	153	127	10.000	300	261	225	186	9.000	350	305	263	217		●	○
5.4	8.000	177	154	133	110	7.000	300	261	225	186	6.000	350	305	263	217		●	○
5.5	8.000	106	92	80	66	7.000	200	174	150	124	6.000	220	191	165	136		●	○
5.6	8.000	147	128	110	91	7.000	220	191	165	136	6.000	250	218	188	155		●	○
5.7	8.000	127	111	95	79	7.000	220	191	165	136	6.000	250	218	188	155		●	○
5.8	8.000	127	111	95	79	7.000	220	191	165	136	6.000	250	218	188	155		●	○
5.9	21.000	228	199	171	141	18.000	300	261	225	186	15.000	380	331	285	236		●	○
5.10	21.000	274	238	205	170	18.000	400	348	300	248	15.000	450	392	338	279		●	○
5.11	16.000	237	206	178	147	14.000	300	261	225	186	12.000	380	331	285	236		●	○
6.1	25.000	300	261	225	186	21.000	400	348	300	248	19.000	500	435	375	310		●	
6.2	16.000	173	151	130	107	14.000	200	174	150	124	12.000	240	209	180	149		●	
6.3	12.000	173	151	130	107	10.000	200	174	150	124	9.000	240	209	180	149		●	
6.4	12.000	163	142	122	101	10.000	200	174	150	124	9.000	240	209	180	149		●	
6.5																		

Cutting data standard values – MultiChange – PCR-UNI – 52 871 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	a_p max.	Feedrates for extra short and short holder											
					Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0	Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0
					a_e 0,25 x DC						a_e 1 x DC					
					v_c m/min	f_z mm					v_c m/min	f_z mm				
1.1	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.2	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.3	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.4	0,9	0,7*	0,6*	0,56xDC	405	0,050	0,058	0,072	0,084	0,094	200	0,025	0,029	0,036	0,042	0,047
1.5	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.6	0,9	0,7*	0,6*	0,56xDC	365	0,047	0,054	0,068	0,078	0,087	180	0,023	0,027	0,034	0,039	0,044
1.7	0,9	0,7*	0,6*	0,56xDC	405	0,050	0,058	0,072	0,084	0,094	200	0,025	0,029	0,036	0,042	0,047
1.8	0,9	0,7*	0,6*	0,56xDC	285	0,042	0,048	0,060	0,070	0,078	140	0,021	0,024	0,030	0,035	0,039
1.9	0,9	0,7*	0,6*	0,56xDC	270	0,048	0,056	0,070	0,081	0,090	135	0,024	0,028	0,035	0,041	0,045
1.10	0,9	0,7*	0,6*	0,56xDC	405	0,050	0,058	0,072	0,084	0,094	200	0,025	0,029	0,036	0,042	0,047
1.11	0,9	0,7*	0,6*	0,56xDC	285	0,042	0,048	0,060	0,070	0,078	140	0,021	0,024	0,030	0,035	0,039
1.12	0,9	0,7*	0,6*	0,56xDC	265	0,048	0,055	0,069	0,080	0,089	130	0,024	0,028	0,034	0,040	0,044
1.13	0,9	0,7*	0,6*	0,56xDC	225	0,043	0,050	0,063	0,073	0,081	110	0,022	0,025	0,031	0,036	0,041
1.14	0,9	0,7*	0,6*	0,56xDC	225	0,043	0,050	0,063	0,073	0,081	110	0,022	0,025	0,031	0,036	0,041
1.15	0,9	0,7*	0,6*	0,56xDC	225	0,043	0,050	0,063	0,073	0,081	110	0,022	0,025	0,031	0,036	0,041
1.16	0,9	0,7*	0,6*	0,56xDC	265	0,048	0,055	0,069	0,080	0,089	130	0,024	0,028	0,034	0,040	0,044
2.1	0,9	0,7*	0,6*	0,56xDC	120	0,029	0,034	0,042	0,049	0,055	60	0,015	0,017	0,021	0,024	0,027
2.2	0,9	0,7*	0,6*	0,56xDC	135	0,032	0,037	0,046	0,053	0,059	65	0,016	0,018	0,023	0,027	0,030
2.3	0,9	0,7*	0,6*	0,56xDC	135	0,032	0,037	0,046	0,053	0,059	65	0,016	0,018	0,023	0,027	0,030
2.4	0,9	0,7*	0,6*	0,56xDC	135	0,032	0,037	0,046	0,053	0,059	65	0,016	0,018	0,023	0,027	0,030
2.5	0,9	0,7*	0,6*	0,56xDC	115	0,024	0,028	0,035	0,041	0,045	55	0,012	0,014	0,017	0,020	0,023
2.6	0,9	0,7*	0,6*	0,56xDC	120	0,029	0,034	0,042	0,049	0,055	60	0,015	0,017	0,021	0,024	0,027
2.7	0,9	0,7*	0,6*	0,56xDC	120	0,025	0,029	0,036	0,042	0,047	60	0,013	0,015	0,018	0,021	0,023
3.1	0,9	0,7*	0,6*	0,56xDC	485	0,083	0,097	0,121	0,140	0,156	240	0,042	0,048	0,060	0,070	0,078
3.2	0,9	0,7*	0,6*	0,56xDC	365	0,058	0,068	0,084	0,098	0,109	180	0,029	0,034	0,042	0,049	0,055
3.3	0,9	0,7*	0,6*	0,56xDC	445	0,071	0,082	0,103	0,119	0,132	220	0,035	0,041	0,051	0,059	0,066
3.4	0,9	0,7*	0,6*	0,56xDC	365	0,058	0,068	0,084	0,098	0,109	180	0,029	0,034	0,042	0,049	0,055
3.5	0,9	0,7*	0,6*	0,56xDC	325	0,058	0,068	0,084	0,098	0,109	160	0,029	0,034	0,042	0,049	0,055
3.6	0,9	0,7*	0,6*	0,56xDC	305	0,050	0,058	0,072	0,084	0,094	150	0,025	0,029	0,036	0,042	0,047
3.7	0,9	0,7*	0,6*	0,56xDC	325	0,058	0,068	0,084	0,098	0,109	160	0,029	0,034	0,042	0,049	0,055
3.8	0,9	0,7*	0,6*	0,56xDC	305	0,050	0,058	0,072	0,084	0,094	150	0,025	0,029	0,036	0,042	0,047

* = Trimming and trochoidal slot milling

Cutting data standard values – MultiChange – PCR-ALU – 52 872 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	a_p max.	Feedrates for extra short and short holder											
					Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0	Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0
					a_e 0,25 x DC						a_e 1 x DC					
					v_c m/min	f_z mm					v_c m/min	f_z mm				
4.1	0,9	0,7*	0,6*	0,56xDC	1085	0,142	0,169	0,211	0,245	0,273	605	0,071	0,085	0,106	0,122	0,136
4.2	0,9	0,7*	0,6*	0,56xDC	1085	0,142	0,169	0,211	0,245	0,273	605	0,071	0,085	0,106	0,122	0,136
4.3	0,9	0,7*	0,6*	0,56xDC	720	0,149	0,178	0,222	0,257	0,286	405	0,075	0,089	0,106	0,128	0,143
4.4	0,9	0,7*	0,6*	0,56xDC	575	0,156	0,186	0,232	0,269	0,300	320	0,078	0,093	0,116	0,135	0,150
4.5	0,9	0,7*	0,6*	0,56xDC	415	0,171	0,203	0,253	0,294	0,327	230	0,085	0,102	0,127	0,147	0,164
4.6	0,9	0,7*	0,6*	0,56xDC	415	0,114	0,136	0,169	0,196	0,218	230	0,057	0,068	0,084	0,098	0,109
4.7	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.8	0,9	0,7*	0,6*	0,56xDC	310	0,114	0,136	0,169	0,196	0,218	175	0,057	0,068	0,084	0,098	0,109
4.9	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.10	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.11	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.12	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.13																
4.14																
4.15																
4.16																
4.17																
4.18																
4.19																

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

		Ramping	Drilling	Helical milling			● 1st choice		○ suitable
					Max. plunging angle				
	v_c m/min	Max. angle	f_z factor	$a_{R\,max.}$**	$D_{min.}$ 1,5	$D_{max.}$ 1,8	Emulsion	Compressed air	MMS
	1.1	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.2	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.3	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.4	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.5	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.6	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.7	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.8	**45°**	**0,7**	**0,56xDC**	**20°**	**13°**	●		○
	1.9	**30°**		**0,5xDC**	**18°**	**11°**	●		○
	1.10	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.11	**45°**	**0,7**	**0,56xDC**	**20°**	**13°**	●		○
	1.12	**30°**	**0,8**	**0,5xDC**	**18°**	**11°**	○	●	○
	1.13	**30°**	**0,7**	**0,5xDC**	**18°**	**11°**	●		○
	1.14	**30°**	**0,7**	**0,5xDC**	**18°**	**11°**	●		○
	1.15	**30°**	**0,7**	**0,5xDC**	**18°**	**11°**	●		○
	1.16	**30°**	**0,8**	**0,5xDC**	**18°**	**11°**	○	●	○
	2.1	15°		0,4xDC	14°	9°	●		○
	2.2	15°		0,4xDC	14°	9°	●		○
	2.3	15°		0,4xDC	14°	9°	●		○
	2.4	15°		0,4xDC	14°	9°	●		○
	2.5	15°		0,4xDC	14°	9°	●		
	2.6	15°		0,4xDC	14°	9°	●		○
	2.7	15°		0,4xDC	14°	9°	●		
	3.1	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.2	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.3	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.4	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.5	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.6	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.7	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.8	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○

		Ramping	Drilling	Helical milling			● 1st choice		○ suitable
					Max. plunging angle				
	v_c m/min	Max. angle	f_z factor	$a_{R\,max.}$**	$D_{min.}$ 1,5	$D_{max.}$ 1,8	Emulsion	Compressed air	MMS
	4.1	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.2	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.3	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.4	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.5	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.6	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.7	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.8	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.9	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.10	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.11	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.12	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.13								
	4.14								
	4.15								
	4.16								
	4.17								
	4.18								
	4.19								

14

** Width of cut per helical revolution

Cutting data standard values – MultiChange – PCD milling heads

Index	Correction factor v_c, a_p and f_z Medium Holder	Correction factor v_c, a_p and f_z Long Holder	Correction factor v_c, a_p and f_z Extra Long Holder	$n_{max.}$ rpm	v_c m/min	Feedrates for extra short and short holder Ø DC = 8 mm a_e 0,1–0,4 x DC a_p max. in mm 6 f_z in mm	Ø DC = 8 mm a_e 0,6–1,0 x DC a_p max. in mm 3 f_z in mm	v_c m/min	Ø DC = 10 mm a_e 0,1–0,4 x DC a_p max. in mm 8 f_z in mm	Ø DC = 10 mm a_e 0,6–1,0 x DC a_p max. in mm 4 f_z in mm	● 1st choice Emulsion	○ suitable Compressed air	○ suitable MMS
4.1	0,9	0,7*	0,6*	**18000**	**300–450**	0,08	0,08	**350–550**	0,08	0,08	●	○	○
4.2	0,9	0,7*	0,6*		**300–450**	0,08	0,08	**350–550**	0,08	0,08	●	○	○
4.3	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.4	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.5	0,9	0,7*	0,6*		**300–450**	0,20	0,10	**350–550**	0,20	0,10	●	○	○
4.6	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.7	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.8	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.9	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.10	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.11	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.12	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.13	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.14	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.15	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.16	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○
4.17	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○
4.18	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○
4.19	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○

*= Edge Milling and Trochoidal Milling

Index	Correction factor v_c, a_p and f_z Medium Holder	Correction factor v_c, a_p and f_z Long Holder	Correction factor v_c, a_p and f_z Extra Long Holder	$n_{max.}$ rpm	v_c m/min	Feedrates for extra short and short holder Ø DC = 12 mm a_e 0,1–0,4 x DC a_p max. in mm 8 f_z in mm	Ø DC = 12 mm a_e 0,6–1,0 x DC a_p max. in mm 4 f_z in mm	v_c m/min	Ø DC = 16 mm a_e 0,1–0,4 x DC a_p max. in mm 8 f_z in mm	Ø DC = 16 mm a_e 0,6–1,0 x DC a_p max. in mm 4 f_z in mm	● 1st choice Emulsion	○ suitable Compressed air	○ suitable MMS
4.1	0,9	0,7*	0,6*	**18000**	**400–600**	0,08	0,08	**450–700**	0,08	0,08	●	○	○
4.2	0,9	0,7*	0,6*		**400–600**	0,08	0,08	**450–700**	0,08	0,08	●	○	○
4.3	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.4	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.5	0,9	0,7*	0,6*		**400–600**	0,20	0,10	**450–700**	0,20	0,10	●	○	○
4.6	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.7	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.8	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.9	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.10	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.11	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.12	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.13	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.14	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.15	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.16	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○
4.17	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○
4.18	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○
4.19	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○

*= Edge Milling and Trochoidal Milling

All tools should be mounted using torque wrench.
In unstable applications, the machining parameters can be reduced.

Cutting data standard values – MultiChange – End milling heads – 52 860 ... / 52 861 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder															● 1st choice		○ suitable
					Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm					
				$a_{p\,max.}$	5,2 mm	4,4 mm	3,6 mm	6,5 mm	5,5 mm	4,5 mm	7,8 mm	6,6 mm	5,4 mm	10,4 mm	8,8 mm	7,2 mm	13 mm	11 mm	9 mm			
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			
					f_z mm															Emulsion	Compressed air	MMS
1.1	0,9	0,7*	0,6*	180	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08	○	●	○
1.2	0,9	0,7*	0,6*	200	0,06	0,05	0,03	0,08	0,07	0,05	0,09	0,08	0,06	0,13	0,11	0,08	0,16	0,14	0,10	○	●	○
1.3	0,9	0,7*	0,6*	180	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08	○	●	○
1.4	0,9	0,7*	0,6*	150	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08	○	●	○
1.5	0,9	0,7*	0,6*	160	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09	○	●	○
1.6	0,9	0,7*	0,6*	140	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08	○	●	○
1.7	0,9	0,7*	0,6*	140	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09	○	●	○
1.8	0,9	0,7*	0,6*	100	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.9	0,9	0,7*	0,6*	140	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08	○	●	○
1.10	0,9	0,7*	0,6*	120	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.11	0,9	0,7*	0,6*	100	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	○	●	○
1.12	0,9	0,7*	0,6*	90	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.13	0,9	0,7*	0,6*	70	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.14																						
1.15	0,9	0,7*	0,6*	80	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	○	●	○
1.16	0,9	0,7*	0,6*	80	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	○	●	○
2.1	0,9	0,7*	0,6*	60	0,04	0,04		0,06	0,05		0,07	0,06		0,09	0,08		0,12	0,10		●		
2.2	0,9	0,7*	0,6*	60	0,04	0,03		0,05	0,04		0,06	0,05		0,08	0,07		0,10	0,09		●		
2.3	0,9	0,7*	0,6*	50	0,04	0,03		0,05	0,04		0,06	0,05		0,08	0,07		0,10	0,09		●		
2.4	0,9	0,7*	0,6*	40	0,03	0,02		0,04	0,03		0,04	0,04		0,06	0,05		0,08	0,07		●		
2.5	0,9	0,7*	0,6*	50	0,03	0,03		0,04	0,04		0,05	0,04		0,07	0,06		0,09	0,08		●		
2.6	0,9	0,7*	0,6*	50	0,03	0,03		0,04	0,04		0,05	0,04		0,07	0,06		0,09	0,08		●		
2.7	0,9	0,7*	0,6*	40	0,03	0,02		0,04	0,03		0,04	0,04		0,06	0,05		0,08	0,07		●		
3.1	0,9	0,7*	0,6*	150	0,06	0,05	0,03	0,08	0,07	0,05	0,09	0,08	0,06	0,13	0,11	0,08	0,16	0,14	0,10		●	
3.2	0,9	0,7*	0,6*	120	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08		●	
3.3	0,9	0,7*	0,6*	140	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09		●	
3.4	0,9	0,7*	0,6*	120	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08		●	
3.5	0,9	0,7*	0,6*	120	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09		●	
3.6	0,9	0,7*	0,6*	100	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08		●	
3.7	0,9	0,7*	0,6*	120	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09		●	
3.8	0,9	0,7*	0,6*	100	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08		●	
4.1																						
4.2																						
4.3																						
4.4																						
4.5																						
4.6																						
4.7																						
4.8																						
4.9																						
4.10	0,9	0,7*	0,6*	160	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	●		○
4.11	0,9	0,7*	0,6*	220	0,06	0,05	0,03	0,08	0,07	0,05	0,09	0,08	0,06	0,13	0,11	0,08	0,16	0,14	0,10	●		○
4.12																						
4.13																						
4.14																						
4.15																						
4.16																						
4.17																						
4.18																						
4.19																						
5.1																						
5.2																						
5.3																						
5.4																						
5.5																						
5.6																						
5.7																						
5.8																						
5.9																						
5.10																						
5.11																						
6.1																						
6.2																						
6.3																						
6.4																						
6.5																						

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

14

Cutting Data – MultiChange – Roughing finishing milling heads – 52 862 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder										Emulsion	Compressed air	MMS
					Ø DC = 8 mm		Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		Ø DC = 20 mm		● 1st choice		○ suitable
				$a_{p\,max.}$	7,5 mm		9,4 mm		11,3 mm		15,0 mm		18,8 mm				
					a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC			
					f_z mm		f_z mm		f_z mm		f_z mm		f_z mm				
1.1	**0,9**	**0,7***	**0,6***	**215**	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**240**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	0,12	0,10	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**215**	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**180**	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**190**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**170**	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**170**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**120**	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**170**	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**145**	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**120**	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**110**	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**85**	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.14																	
1.15	**0,9**	**0,7***	**0,6***	**95**	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**95**	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	○	●	○
2.1	0,9	0,7*	0,6*	70	0,03	0,03	0,04	0,04	0,05	0,04	0,07	0,06	0,08	0,07	●		
2.2	0,9	0,7*	0,6*	70	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	●		
2.3	0,9	0,7*	0,6*	60	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	●		
2.4	0,9	0,7*	0,6*	50	0,02	0,02	0,03	0,02	0,03	0,03	0,04	0,04	0,06	0,05	●		
2.5	0,9	0,7*	0,6*	60	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	●		
2.6	0,9	0,7*	0,6*	60	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	●		
2.7	0,9	0,7*	0,6*	50	0,02	0,02	0,03	0,02	0,03	0,03	0,04	0,04	0,06	0,05	●		
3.1	**0,9**	**0,7***	**0,6***	**180**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	0,12	0,10		●	
3.2	**0,9**	**0,7***	**0,6***	**140**	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08		●	
3.3	**0,9**	**0,7***	**0,6***	**170**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09		●	
3.4	**0,9**	**0,7***	**0,6***	**140**	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08		●	
3.5	**0,9**	**0,7***	**0,6***	**140**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09		●	
3.6	**0,9**	**0,7***	**0,6***	**120**	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08		●	
3.7	**0,9**	**0,7***	**0,6***	**140**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09		●	
3.8	**0,9**	**0,7***	**0,6***	**120**	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08		●	
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
4.10	**0,9**	**0,7***	**0,6***	**190**	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	●		○
4.11	**0,9**	**0,7***	**0,6***	**260**	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	0,12	0,10	●		○
4.12																	
4.13																	
4.14																	
4.15																	
4.16																	
4.17																	
4.18																	
4.19																	
5.1																	
5.2																	
5.3																	
5.4																	
5.5																	
5.6																	
5.7																	
5.8																	
5.9																	
5.10																	
5.11																	
6.1																	
6.2																	
6.3																	
6.4																	
6.5																	

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

Cutting data standard values – MultiChange – HFC milling heads – 52 864 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	$a_{p\,max.}$ x DCX	Feedrates for extra short and short holder																	
						Ø DCX = 8 mm			Ø DCX = 10 mm			Ø DCX = 12 mm			Ø DCX = 16 mm			Ø DCX = 20 mm			● 1st choice		○ suitable
						a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	Emulsion	Compressed air	MMS
						f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	**0,9**	**0,7***	**0,6***	**200**	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**220**	0,05	0,43	0,36	0,25	0,64	0,53	0,37	0,71	0,59	0,42	0,99	0,83	0,58	1,28	1,07	0,75	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**200**	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**170**	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**180**	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**150**	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**150**	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**110**	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**150**	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**130**	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**110**	0,05	0,23	0,19	0,14	0,34	0,29	0,20	0,39	0,32	0,23	0,54	0,45	0,31	0,69	0,58	0,41	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**100**	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**80**	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.14																							
1.15	**0,9**	**0,7***	**0,6***	**90**	0,05	0,23	0,19	0,14	0,34	0,29	0,20	0,39	0,32	0,23	0,54	0,45	0,31	0,69	0,58	0,41	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**90**	0,05	0,23	0,19	0,14	0,34	0,29	0,20	0,39	0,32	0,23	0,54	0,45	0,31	0,69	0,58	0,41	○	●	○
2.1	0,9	0,7*	0,6*	70	0,025	0,45	0,37	0,26	0,66	0,55	0,39	0,74	0,62	0,43	1,03	0,86	0,60	1,33	1,11	0,78	●		
2.2	0,9	0,7*	0,6*	70	0,025	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	●		
2.3	0,9	0,7*	0,6*	60	0,025	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	●		
2.4	0,9	0,7*	0,6*	40	0,025	0,30	0,25	0,17	0,45	0,37	0,26	0,49	0,41	0,29	0,69	0,58	0,41	0,88	0,74	0,52	●		
2.5	0,9	0,7*	0,6*	60	0,025	0,34	0,29	0,20	0,52	0,43	0,30	0,57	0,48	0,34	0,81	0,67	0,47	1,03	0,86	0,60	●		
2.6	0,9	0,7*	0,6*	55	0,025	0,34	0,29	0,20	0,52	0,43	0,30	0,57	0,48	0,34	0,81	0,67	0,47	1,03	0,86	0,60	●		
2.7	0,9	0,7*	0,6*	40	0,025	0,30	0,25	0,17	0,45	0,37	0,26	0,49	0,41	0,29	0,69	0,58	0,41	0,88	0,74	0,52	●		
3.1	**0,9**	**0,7***	**0,6***	**170**	0,05	0,43	0,36	0,25	0,64	0,53	0,37	0,71	0,59	0,42	0,99	0,83	0,58	1,28	1,07	0,75		●	
3.2	**0,9**	**0,7***	**0,6***	**130**	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63		●	
3.3	**0,9**	**0,7***	**0,6***	**150**	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69		●	
3.4	**0,9**	**0,7***	**0,6***	**130**	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58		●	
3.5	**0,9**	**0,7***	**0,6***	**130**	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69		●	
3.6	**0,9**	**0,7***	**0,6***	**110**	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63		●	
3.7	**0,9**	**0,7***	**0,6***	**130**	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69		●	
3.8	**0,9**	**0,7***	**0,6***	**110**	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58		●	
4.1																							
4.2																							
4.3																							
4.4																							
4.5																							
4.6																							
4.7																							
4.8																							
4.9																							
4.10																							
4.11																							
4.12																							
4.13																							
4.14																							
4.15																							
4.16																							
4.17																							
4.18																							
4.19																							
5.1																							
5.2																							
5.3																							
5.4																							
5.5																							
5.6																							
5.7																							
5.8																							
5.9																							
5.10																							
5.11																							
6.1	0,9	0,7*	0,6*	70	0,025	0,20			0,30			0,33			0,46			0,49				●	
6.2	0,9	0,7*	0,6*	60	0,025	0,17			0,25			0,28			0,38			0,41				●	
6.3																							
6.4																							
6.5																							

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

14

Cutting Data – MultiChange – Finish milling heads – 52 863 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder		Feedrates for extra short and short holder							
					Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm	●		○
				$a_{p\,max.}$	7,5 mm	9,4 mm	11,3 mm	15,0 mm	18,8 mm	1st choice		suitable
					a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	Emulsion	Compressed air	MMS
				v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.1	**0,9**	**0,7***	**0,6***	**250**	0,05	0,06	0,08	0,10	0,13	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**280**	0,06	0,07	0,09	0,11	0,15	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**250**	0,05	0,06	0,08	0,10	0,13	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**210**	0,05	0,06	0,07	0,09	0,12	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**220**	0,06	0,07	0,08	0,11	0,14	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**200**	0,05	0,06	0,07	0,09	0,12	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**200**	0,06	0,07	0,08	0,11	0,14	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**140**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**200**	0,05	0,06	0,08	0,10	0,13	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**170**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**140**	0,03	0,04	0,05	0,06	0,08	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**130**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**100**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.14												
1.15	**0,9**	**0,7***	**0,6***	**110**	0,03	0,04	0,05	0,06	0,08	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**110**	0,03	0,04	0,05	0,06	0,08	○	●	○
2.1	0,9	0,7*	0,6*	80	0,04	0,05	0,06	0,08	0,10	●		
2.2	0,9	0,7*	0,6*	80	0,04	0,05	0,06	0,07	0,09	●		
2.3	0,9	0,7*	0,6*	70	0,04	0,05	0,06	0,07	0,09	●		
2.4	0,9	0,7*	0,6*	60	0,03	0,04	0,04	0,05	0,07	●		
2.5	0,9	0,7*	0,6*	70	0,03	0,04	0,05	0,06	0,08	●		
2.6	0,9	0,7*	0,6*	70	0,03	0,04	0,05	0,06	0,08	●		
2.7	0,9	0,7*	0,6*	60	0,03	0,04	0,04	0,05	0,07	●		
3.1	**0,9**	**0,7***	**0,6***	**210**	0,06	0,07	0,09	0,11	0,15		●	
3.2	**0,9**	**0,7***	**0,6***	**170**	0,05	0,06	0,08	0,10	0,13		●	
3.3	**0,9**	**0,7***	**0,6***	**200**	0,06	0,07	0,08	0,11	0,14		●	
3.4	**0,9**	**0,7***	**0,6***	**170**	0,05	0,06	0,07	0,09	0,12		●	
3.5	**0,9**	**0,7***	**0,6***	**170**	0,06	0,07	0,08	0,11	0,14		●	
3.6	**0,9**	**0,7***	**0,6***	**140**	0,05	0,06	0,08	0,10	0,13		●	
3.7	**0,9**	**0,7***	**0,6***	**170**	0,06	0,07	0,08	0,11	0,14		●	
3.8	**0,9**	**0,7***	**0,6***	**140**	0,05	0,06	0,07	0,09	0,12		●	
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10	**0,9**	**0,7***	**0,6***	220	0,03	0,04	0,05	0,06	0,08	●		○
4.11	**0,9**	**0,7***	**0,6***	310	0,06	0,07	0,09	0,11	0,15	●		○
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

Cutting Data – MultiChange – Ball nosed and torus milling heads – 52 866 ... / 52 865 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder															● 1st choice		○ suitable
					Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm					
				$a_{p\,max.}$	4,8 mm	1,6 mm	0,8 mm	5,6 mm	2,0 mm	1,0 mm	6,8 mm	2,4 mm	1,2 mm	9,0 mm	3,2 mm	1,6 mm	11,3 mm	4,0 mm	2,0 mm			
					a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	Emulsion	Compressed air	MMS
					f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,9	0,7*	0,6*	180	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	○	●	○
1.2	0,9	0,7*	0,6*	200	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14	○	●	○
1.3	0,9	0,7*	0,6*	180	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	○	●	○
1.4	0,9	0,7*	0,6*	150	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11	○	●	○
1.5	0,9	0,7*	0,6*	160	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13	○	●	○
1.6	0,9	0,7*	0,6*	140	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11	○	●	○
1.7	0,9	0,7*	0,6*	140	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13	○	●	○
1.8	0,9	0,7*	0,6*	100	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.9	0,9	0,7*	0,6*	140	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	○	●	○
1.10	0,9	0,7*	0,6*	120	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.11	0,9	0,7*	0,6*	100	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	○	●	○
1.12	0,9	0,7*	0,6*	90	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.13	0,9	0,7*	0,6*	70	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.14																						
1.15	0,9	0,7*	0,6*	80	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	○	●	○
1.16	0,9	0,7*	0,6*	80	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	○	●	○
2.1	0,9	0,7*	0,6*	60	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,08	0,07	0,12	0,10	0,08	0,15	0,12	0,10	●		
2.2	0,9	0,7*	0,6*	60	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	●		
2.3	0,9	0,7*	0,6*	50	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	●		
2.4	0,9	0,7*	0,6*	40	0,04	0,03	0,03	0,04	0,03	0,03	0,06	0,05	0,04	0,08	0,07	0,05	0,10	0,08	0,07	●		
2.5	0,9	0,7*	0,6*	50	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		
2.6	0,9	0,7*	0,6*	50	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		
2.7	0,9	0,7*	0,6*	40	0,04	0,03	0,03	0,04	0,03	0,03	0,06	0,05	0,04	0,08	0,07	0,05	0,10	0,08	0,07	●		
3.1	0,9	0,7*	0,6*	150	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14		●	
3.2	0,9	0,7*	0,6*	120	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12		●	
3.3	0,9	0,7*	0,6*	140	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13		●	
3.4	0,9	0,7*	0,6*	120	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11		●	
3.5	0,9	0,7*	0,6*	120	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13		●	
3.6	0,9	0,7*	0,6*	100	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12		●	
3.7	0,9	0,7*	0,6*	120	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13		●	
3.8	0,9	0,7*	0,6*	100	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11		●	
4.1	0,9	0,7*	0,6*	500	0,12	0,10	0,08	0,12	0,10	0,08	0,20	0,17	0,13	0,25	0,21	0,17	0,30	0,25	0,20	●		○
4.2	0,9	0,7*	0,6*	450	0,12	0,10	0,08	0,12	0,10	0,08	0,20	0,17	0,13	0,25	0,21	0,17	0,30	0,25	0,20	●		○
4.3	0,9	0,7*	0,6*	380	0,11	0,09	0,07	0,11	0,09	0,07	0,19	0,16	0,13	0,24	0,20	0,16	0,28	0,24	0,19	●		○
4.4	0,9	0,7*	0,6*	300	0,10	0,09	0,07	0,10	0,09	0,07	0,18	0,15	0,12	0,22	0,19	0,15	0,27	0,23	0,18	●		○
4.5	0,9	0,7*	0,6*	150	0,09	0,08	0,06	0,09	0,08	0,06	0,16	0,13	0,11	0,20	0,17	0,13	0,24	0,20	0,16	●		○
4.6	0,9	0,7*	0,6*	250	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13	●		○
4.7	0,9	0,7*	0,6*	200	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	●		○
4.8	0,9	0,7*	0,6*	220	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,08	0,07	0,12	0,10	0,08	0,15	0,12	0,10	●		○
4.9	0,9	0,7*	0,6*	200	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		○
4.10	0,9	0,7*	0,6*	160	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		○
4.11	0,9	0,7*	0,6*	220	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14	●		○
4.12	0,9	0,7*	0,6*	190	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14	●		○
4.13																						
4.14																						
4.15																						
4.16																						
4.17																						
4.18																						
4.19																						
5.1																						
5.2																						
5.3																						
5.4																						
5.5																						
5.6																						
5.7																						
5.8																						
5.9																						
5.10																						
5.11																						
6.1																						
6.2																						
6.3																						
6.4																						
6.5																						

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

14

Cutting Data – MultiChange – HSC Ball nosed and torus milling heads – 52 866 ... / 52 865 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder		Feedrates for extra short and short holder							
					Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm	● 1st choice		○ suitable
					a_e/a_p = 0,04	a_e/a_p = 0,05	a_e/a_p = 0,06	a_e/a_p = 0,08	a_e/a_p = 0,10	Emulsion	Compressed air	MMS
				v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.1	**0,9**	**0,7***	**0,6***	**540**	0,08	0,09	0,08	0,11	0,13	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**600**	0,10	0,11	0,10	0,13	0,16	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**540**	0,08	0,09	0,08	0,11	0,13	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**450**	0,08	0,08	0,08	0,10	0,12	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**480**	0,09	0,10	0,09	0,12	0,14	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**420**	0,08	0,08	0,08	0,10	0,12	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**420**	0,09	0,10	0,09	0,12	0,14	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**300**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**420**	0,08	0,09	0,08	0,11	0,13	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**360**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**300**	0,05	0,06	0,05	0,07	0,09	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**270**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**210**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.14												
1.15	**0,9**	**0,7***	**0,6***	**240**	0,05	0,06	0,05	0,07	0,09	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**240**	0,05	0,06	0,05	0,07	0,09	○	●	○
2.1	0,9	0,7*	0,6*	180	0,07	0,08	0,07	0,09	0,11	●		
2.2	0,9	0,7*	0,6*	180	0,06	0,07	0,06	0,08	0,10	●		
2.3	0,9	0,7*	0,6*	150	0,06	0,07	0,06	0,08	0,10	●		
2.4	0,9	0,7*	0,6*	120	0,05	0,05	0,05	0,06	0,07	●		
2.5	0,9	0,7*	0,6*	150	0,05	0,06	0,05	0,07	0,09	●		
2.6	0,9	0,7*	0,6*	150	0,05	0,06	0,05	0,07	0,09	●		
2.7	0,9	0,7*	0,6*	120	0,05	0,05	0,05	0,06	0,07	●		
3.1	**0,9**	**0,7***	**0,6***	**450**	0,10	0,11	0,10	0,13	0,16		●	
3.2	**0,9**	**0,7***	**0,6***	**360**	0,08	0,09	0,08	0,11	0,13		●	
3.3	**0,9**	**0,7***	**0,6***	**420**	0,09	0,10	0,09	0,12	0,14		●	
3.4	**0,9**	**0,7***	**0,6***	**360**	0,08	0,08	0,08	0,10	0,12		●	
3.5	**0,9**	**0,7***	**0,6***	**360**	0,09	0,10	0,09	0,12	0,14		●	
3.6	**0,9**	**0,7***	**0,6***	**300**	0,08	0,09	0,08	0,11	0,13		●	
3.7	**0,9**	**0,7***	**0,6***	**360**	0,09	0,10	0,09	0,12	0,14		●	
3.8	**0,9**	**0,7***	**0,6***	**300**	0,08	0,08	0,08	0,10	0,12		●	
4.1	0,9	0,7*	0,6*	1500	0,14	0,16	0,14	0,19	0,23	●		○
4.2	0,9	0,7*	0,6*	1350	0,14	0,16	0,14	0,19	0,23	●		○
4.3	0,9	0,7*	0,6*	1140	0,13	0,15	0,13	0,18	0,22	●		○
4.4	0,9	0,7*	0,6*	900	0,13	0,14	0,13	0,17	0,20	●		○
4.5	0,9	0,7*	0,6*	450	0,11	0,13	0,11	0,15	0,18	●		○
4.6	0,9	0,7*	0,6*	750	0,09	0,10	0,09	0,12	0,14	●		○
4.7	0,9	0,7*	0,6*	600	0,08	0,09	0,08	0,11	0,13	●		○
4.8	0,9	0,7*	0,6*	660	0,07	0,08	0,07	0,09	0,11	●		○
4.9	0,9	0,7*	0,6*	600	0,05	0,06	0,05	0,07	0,09	●		○
4.10	0,9	0,7*	0,6*	480	0,05	0,06	0,05	0,07	0,09	●		○
4.11	0,9	0,7*	0,6*	660	0,10	0,11	0,10	0,13	0,16	●		○
4.12	0,9	0,7*	0,6*	570	0,10	0,11	0,10	0,13	0,16	●		○
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

Cutting data standard values – MultiChange – Torus milling heads – 52 870 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder								Emulsion	Compressed air	MMS
					Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		Ø DC = 20 mm		●		○
				$a_{p\,max.}$	5,0 mm	3,0 mm	6,0 mm	3,6 mm	8,0 mm	4,8 mm	10,0 mm	6,0 mm	1st choice		suitable
					a_e = DC		a_e = DC		a_e = DC		a_e = DC				
					f_z mm		f_z mm		f_z mm		f_z mm				
1.1															
1.2															
1.3															
1.4															
1.5															
1.6															
1.7															
1.8															
1.9															
1.10															
1.11															
1.12															
1.13															
1.14															
1.15															
1.16															
2.1															
2.2															
2.3															
2.4															
2.5															
2.6															
2.7															
3.1															
3.2															
3.3															
3.4															
3.5															
3.6															
3.7															
3.8															
4.1	0,9	0,7	0,6	290–650	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.2	0,9	0,7	0,6	290–650	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.3	0,9	0,7	0,6	250–550	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.4	0,9	0,7	0,6	210–500	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.5	0,9	0,7	0,6	280–450	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.6															
4.7															
4.8															
4.9															
4.10															
4.11															
4.12															
4.13															
4.14															
4.15															
4.16															
4.17															
4.18															
4.19															
5.1															
5.2															
5.3															
5.4															
5.5															
5.6															
5.7															
5.8															
5.9															
5.10															
5.11															
6.1															
6.2															
6.3															
6.4															
6.5															

14

For unstable applications, the cutting data can be reduced.

Cutting Data – MultiChange – Quarter round milling heads – 52 869 ...

		Ø DCX = 8 mm		Ø DCX = 10 mm		Ø DCX = 12 mm			Ø DCX = 16 mm			Ø DCX = 20 mm		● 1st choice		○ suitable
		PRFRAD = 0,5	PRFRAD = 1,0	PRFRAD = 1,5	PRFRAD = 2,0	PRFRAD = 2,5	PRFRAD = 3,0	PRFRAD = 3,5	PRFRAD = 4,0	PRFRAD = 4,5	PRFRAD = 5,0	PRFRAD = 5,0	PRFRAD = 6,0			
Index	v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.1	150	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	○	●	○
1.2	170	0,03	0,03	0,04	0,04	0,06	0,05	0,05	0,08	0,08	0,07	0,09	0,09	○	●	○
1.3	150	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	○	●	○
1.4	130	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07	○	●	○
1.5	140	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08	○	●	○
1.6	120	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07	○	●	○
1.7	120	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08	○	●	○
1.8	90	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.9	120	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	○	●	○
1.10	100	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.11	90	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	○	●	○
1.12	80	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.13	60	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.14																
1.15	70	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	○	●	○
1.16	70	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	○	●	○
2.1	50	0,03	0,02	0,03	0,02	0,04	0,04	0,03	0,06	0,05	0,05	0,07	0,06	●		
2.2	50	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	●		
2.3	40	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	●		
2.4	30	0,02	0,01	0,02	0,02	0,03	0,02	0,02	0,04	0,04	0,03	0,05	0,04	●		
2.5	40	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	●		
2.6	40	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	●		
2.7	30	0,02	0,01	0,02	0,02	0,03	0,02	0,02	0,04	0,04	0,03	0,05	0,04	●		
3.1	130	0,03	0,03	0,04	0,04	0,06	0,05	0,05	0,08	0,08	0,07	0,09	0,09		●	
3.2	100	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08		●	
3.3	120	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08		●	
3.4	100	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07		●	
3.5	100	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08		●	
3.6	90	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08		●	
3.7	100	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08		●	
3.8	90	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07		●	
4.1	430	0,05	0,04	0,06	0,05	0,09	0,08	0,07	0,12	0,11	0,10	0,14	0,13	●		○
4.2	380	0,05	0,04	0,06	0,05	0,09	0,08	0,07	0,12	0,11	0,10	0,14	0,13	●		○
4.3	320	0,05	0,04	0,06	0,05	0,08	0,07	0,07	0,11	0,11	0,10	0,13	0,12	●		○
4.4	260	0,05	0,04	0,05	0,05	0,08	0,07	0,06	0,11	0,10	0,09	0,12	0,12	●		○
4.5	130	0,04	0,03	0,05	0,04	0,07	0,06	0,05	0,10	0,09	0,08	0,11	0,10	●		○
4.6	210	0,03	0,03	0,04	0,03	0,06	0,05	0,04	0,08	0,07	0,07	0,09	0,08	●		○
4.7	170	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	●		○
4.8	190	0,02	0,02	0,03	0,02	0,04	0,04	0,03	0,06	0,05	0,05	0,07	0,06	●		○
4.9	170	0,02	0,02	0,02	0,02	0,03	0,03	0,03	0,04	0,04	0,04	0,05	0,05	●		○
4.10	140	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	●		○
4.11	190	0,03	0,03	0,04	0,04	0,06	0,05	0,05	0,08	0,08	0,07	0,09	0,09	●		○
4.12																
4.13																
4.14																
4.15																
4.16																
4.17																
4.18																
4.19																
5.1																
5.2																
5.3																
5.4																
5.5																
5.6																
5.7																
5.8																
5.9																
5.10																
5.11																
6.1																
6.2																
6.3																
6.4																
6.5																

Cutting Data – MultiChange – Deburring heads – 52 867 ... / 52 868 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder		Feedrates for extra short and short holder						
					Ø DCX = 10 mm	Ø DCX = 12 mm	Ø DCX = 16 mm	Ø DCX = 20 mm	● 1st choice		○ suitable
				$a_{p\,max.}$ 52 867 ...	5,0 mm	6,0 mm	4,8 mm	6,0 mm			
				$a_{p\,max.}$ 52 868 ...	1,25 mm	1,5 mm	2,0 mm	2,5 mm			
					a_e 0,1–0,2 x DCX	a_e 0,1–0,2 x DCX	a_e 0,1–0,2 x DCX	a_e 0,1–0,2 x DCX	Emulsion	Compressed air	MMS
				v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm			
1.1	**0,9**	**0,7**	**0,6**	**200**	0,07	0,09	0,12	0,14	○	●	○
1.2	**0,9**	**0,7**	**0,6**	**220**	0,09	0,11	0,14	0,17	○	●	○
1.3	**0,9**	**0,7**	**0,6**	**200**	0,07	0,09	0,12	0,17	○	●	○
1.4	**0,9**	**0,7**	**0,6**	**170**	0,07	0,08	0,11	0,15	○	●	○
1.5	**0,9**	**0,7**	**0,6**	**180**	0,08	0,10	0,13	0,17	○	●	○
1.6	**0,9**	**0,7**	**0,6**	**150**	0,07	0,08	0,11	0,15	○	●	○
1.7	**0,9**	**0,7**	**0,6**	**150**	0,08	0,10	0,13	0,17	○	●	○
1.8	**0,9**	**0,7**	**0,6**	**110**	0,05	0,07	0,09	0,12	○	●	○
1.9	**0,9**	**0,7**	**0,6**	**150**	0,07	0,09	0,12	0,12	○	●	○
1.10	**0,9**	**0,7**	**0,6**	**130**	0,05	0,07	0,09	0,09	○	●	○
1.11	**0,9**	**0,7**	**0,6**	**110**	0,05	0,06	0,08	0,06	○	●	○
1.12	**0,9**	**0,7**	**0,6**	**100**	0,05	0,07	0,09	0,04	○	●	○
1.13	**0,9**	**0,7**	**0,6**	**80**	0,05	0,07	0,09	0,03	○	●	○
1.14											
1.15	**0,9**	**0,7**	**0,6**	**90**	0,05	0,06	0,08	0,09	○	●	○
1.16	**0,9**	**0,7**	**0,6**	**90**	0,05	0,06	0,08	0,09	○	●	○
2.1	0,9	0,7	0,6	70	0,06	0,08	0,10	0,12	●		
2.2	0,9	0,7	0,6	70	0,05	0,07	0,09	0,11	●		
2.3	0,9	0,7	0,6	60	0,05	0,07	0,09	0,11	●		
2.4	0,9	0,7	0,6	40	0,04	0,05	0,07	0,08	●		
2.5	0,9	0,7	0,6	60	0,05	0,06	0,08	0,09	●		
2.6	0,9	0,7	0,6	60	0,05	0,06	0,08	0,09	●		
2.7	0,9	0,7	0,6	40	0,04	0,05	0,07	0,08	●		
3.1	**0,9**	**0,7**	**0,6**	**170**	0,09	0,11	0,14	0,17		●	
3.2	**0,9**	**0,7**	**0,6**	**130**	0,07	0,09	0,12	0,15		●	
3.3	**0,9**	**0,7**	**0,6**	**150**	0,08	0,10	0,13	0,16		●	
3.4	**0,9**	**0,7**	**0,6**	**130**	0,07	0,08	0,11	0,13		●	
3.5	**0,9**	**0,7**	**0,6**	**130**	0,08	0,10	0,13	0,16		●	
3.6	**0,9**	**0,7**	**0,6**	**110**	0,07	0,09	0,12	0,15		●	
3.7	**0,9**	**0,7**	**0,6**	**130**	0,08	0,10	0,13	0,16		●	
3.8	**0,9**	**0,7**	**0,6**	**110**	0,07	0,08	0,11	0,13		●	
4.1	**0,9**	**0,7**	**0,6**	**550**	0,12	0,16	0,21	0,25	●		○
4.2	**0,9**	**0,7**	**0,6**	**500**	0,12	0,16	0,21	0,25	●		○
4.3	**0,9**	**0,7**	**0,6**	**420**	0,12	0,15	0,20	0,24	●		○
4.4	**0,9**	**0,7**	**0,6**	**330**	0,11	0,14	0,19	0,23	●		○
4.5	**0,9**	**0,7**	**0,6**	**170**	0,10	0,13	0,17	0,20	●		○
4.6	**0,9**	**0,7**	**0,6**	**280**	0,08	0,10	0,13	0,16	●		○
4.7	**0,9**	**0,7**	**0,6**	**220**	0,07	0,09	0,12	0,15	●		○
4.8	**0,9**	**0,7**	**0,6**	**240**	0,06	0,08	0,10	0,12	●		○
4.9	**0,9**	**0,7**	**0,6**	**220**	0,05	0,06	0,08	0,09	●		○
4.10	**0,9**	**0,7**	**0,6**	**180**	0,05	0,06	0,08	0,09	●		○
4.11	**0,9**	**0,7**	**0,6**	**240**	0,09	0,11	0,14	0,17	●		○
4.12	**0,9**	**0,7**	**0,6**	**210**	0,09	0,11	0,14	0,17	●		○
4.13											
4.14											
4.15											
4.16											
4.17											
4.18											
4.19											
5.1											
5.2											
5.3											
5.4											
5.5											
5.6											
5.7											
5.8											
5.9											
5.10											
5.11											
6.1											
6.2											
6.3											
6.4											
6.5											

For unstable applications the machining parameters must be reduced.

14

Cutting data – End Mills – W/HPC, short

	Emulsion	MMS		Ø DC = 2,7–3,0 mm			Ø DC = 3,7–4,0 mm			Ø DC = 4,7–5,0 mm			Ø DC = 5,7–7,0 mm			Ø DC = 7,7–9,0 mm			Ø DC = 9,7–11,0 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm																		
4.1	700	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.2	700	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.3	420	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.4	420	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.5	280	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.6	200	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.7	180	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.8	175	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.9	175	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.10	175	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.11	280	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.12	210	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10

* = use a_p 1.5 x DC only in a_e range 0.1–0.4 x DC

Cutting data – End Mills – W/HPC, long

	Emulsion	MMS		Ø DC = 2,7–3,0 mm			Ø DC = 3,7–4,0 mm			Ø DC = 4,7–5,0 mm			Ø DC = 5,7–7,0 mm			Ø DC = 7,7–9,0 mm			Ø DC = 9,7–11,0 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm																		
4.1	400	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.2	400	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.3	240	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.4	240	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.5	160	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.6	115	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.7	120	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.8	100	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.9	100	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.10	100	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.11	160	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.12	120	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09

* = use a_p 1.5 x DC only in a_e range 0.1–0.4 x DC

Cutting data – End Mills – W and WR/HPC, extra long

	Emulsion	MMS		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6–7 mm			Ø DC = 8–9 mm			Ø DC = 10–11 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm																		
4.1	300	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.2	300	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.3	180	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.4	180	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.5	125	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.6	90	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.7	90	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.8	75	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.9	75	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.10	75	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.11	125	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.12	90	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03

* = use a_p 1.25 x DC only in a_e range 0.1–0.4 x DC

Cooling lubrication with emulsion

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

	Ø DC = 11,7–13,0 mm			Ø DC = 13,7–15,0 mm			Ø DC = 15,7–16,0 mm			Ø DC = 18,0 mm			Ø DC = 19,7–20,0 mm			Ø DC = 24,7–25,0 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.2	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.3	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.4	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.5	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.6	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.7	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.8	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.9	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.10	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.11	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.12	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20

	Ø DC = 11,7–13,0 mm			Ø DC = 13,7–15,0 mm			Ø DC = 15,7–16,0 mm			Ø DC = 18,0 mm			Ø DC = 19,7–20,0 mm			Ø DC = 24,7–25,0 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.2	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.3	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.4	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.5	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.6	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.7	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.8	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.9	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.10	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.11	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.12	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18

	Ø DC = 12–13 mm			Ø DC = 14–15 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			Ø DC = 25 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.2	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.3	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.4	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.5	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.6	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.7	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.8	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.9	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.10	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.11	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.12	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09

Cutting data standard values – End mills – 54 001 ... – 54 003 ... / 54 050 ... – 54 054 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max.}$ x DC	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**210**	**170**	1,0	0,5	0,027	0,021	0,015	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.2	**220**	**180**	1,0	0,5	0,027	0,021	0,015	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.3	**190**	**150**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.4	**170**	**140**	1,0	0,5	0,014	0,011	0,008	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.5	**180**	**145**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.6	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.7	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.8	**150**	**125**	1,0	0,5	0,014	0,011	0,008	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.9	**150**	**120**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.10	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.11	**150**	**125**	1,0	0,5	0,014	0,011	0,008	0,024	0,019	0,014	0,036	0,027	0,018	0,045	0,034	0,023	0,05	0,04	0,03
1.12	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.13																			
1.14																			
1.15	**160**	**130**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.16	**140**	**110**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
2.1																			
2.2																			
2.3																			
2.4																			
2.5																			
2.6																			
2.7																			
3.1	**180**	**145**	1,0	0,5	0,027	0,021	0,015	0,04	0,031	0,023	0,058	0,043	0,029	0,068	0,051	0,034	0,08	0,06	0,04
3.2	**160**	**130**	1,0	0,5	0,021	0,016	0,011	0,04	0,031	0,023	0,058	0,043	0,029	0,068	0,051	0,034	0,08	0,06	0,04
3.3	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.4	**155**	**125**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.5	**160**	**130**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.6	**150**	**120**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.7	**160**	**130**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.8	**145**	**120**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6																			
4.7																			
4.8																			
4.9																			
4.10																			
4.11																			
4.12																			
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3																			
5.4																			
5.5																			
5.6																			
5.7																			
5.8																			
5.9																			
5.10																			
5.11																			
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Plunging angle for ramping and helical milling: 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.2	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.3	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.4	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.5	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.6	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.7	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.8	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.9	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.10	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.11	0,07	0,05	0,04	0,09	0,07	0,05	0,09	0,07	0,05	0,11	0,09	0,07	●	○	○
1.12	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.13															
1.14															
1.15	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	○
1.16	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	○
2.1															
2.2															
2.3															
2.4															
2.5															
2.6															
2.7															
3.1	0,1	0,08	0,05	0,13	0,09	0,06	0,15	0,12	0,09	0,17	0,14	0,11	●	●	●
3.2	0,1	0,08	0,05	0,13	0,09	0,06	0,15	0,12	0,09	0,17	0,14	0,11	●	●	●
3.3	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.4	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.5	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.6	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.7	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.8	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
4.1															
4.2															
4.3															
4.4															
4.5															
4.6															
4.7															
4.8															
4.9															
4.10															
4.11															
4.12															
4.13															
4.14															
4.15															
4.16															
4.17															
4.18															
4.19															
5.1															
5.2															
5.3															
5.4															
5.5															
5.6															
5.7															
5.8															
5.9															
5.10															
5.11															
6.1															
6.2															
6.3															
6.4															
6.5															

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

14

Cutting data standard values – End mills – 54 004 ... – 54 006 ... / 54 060 ... – 54 064 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max.}$ x DC	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**200**	**160**	1,0	0,5	0,024	0,019	0,014	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.2	**210**	**170**	1,0	0,5	0,024	0,019	0,014	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.3	**180**	**140**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.4	**160**	**130**	1,0	0,5	0,012	0,009	0,007	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.5	**170**	**135**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.6	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.7	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.8	**140**	**115**	1,0	0,5	0,012	0,009	0,007	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.9	**140**	**110**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.10	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.11	**140**	**115**	1,0	0,5	0,012	0,009	0,007	0,022	0,017	0,012	0,032	0,024	0,016	0,04	0,03	0,02	0,05	0,04	0,02
1.12	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.13																			
1.14																			
1.15	**150**	**120**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.16	**130**	**100**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
2.1	**110**	**90**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.2	**100**	**80**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.3	**85**	**70**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.4	**85**	**70**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.5	**100**	**80**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.6	**100**	**80**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.7	**25**	**20**	1,0	0,5	0,009	0,007	0,005	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
3.1	170	135	1,0	0,5	0,024	0,019	0,014	0,036	0,028	0,02	0,051	0,038	0,026	0,061	0,045	0,03	0,07	0,05	0,04
3.2	140	110	1,0	0,5	0,018	0,014	0,01	0,036	0,028	0,02	0,051	0,038	0,026	0,061	0,045	0,03	0,07	0,05	0,04
3.3	160	130	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.4	130	100	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.5	150	120	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.6	140	110	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.7	150	120	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.8	135	110	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	240	190	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.7	260	200	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.8	140	110	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.9	120	95	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.10	100	80	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.11	300	240	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.12	260	200	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.4	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.5	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.6	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.7	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.8	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.9	**100**	**70**	0,5	0,25	0,021	0,017	0,012	0,031	0,024	0,017	0,046	0,034	0,023	0,056	0,042	0,028	0,07	0,05	0,03
5.10	**80**	**60**	0,5	0,25	0,015	0,012	0,009	0,023	0,018	0,013	0,034	0,025	0,017	0,043	0,032	0,021	0,05	0,04	0,03
5.11	**60**	**50**	0,5	0,25	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

„Extra-long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Plunging angle for ramping and helical milling: 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.2	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.3	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.4	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.5	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.6	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.7	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.8	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.9	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.10	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.11	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,1	0,08	0,06	●	○	○
1.12	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.13															
1.14															
1.15	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.16	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
2.1	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.2	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.3	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.4	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.5	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.6	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.7	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,04	0,03	0,07	0,05	0,04	●		
3.1	0,09	0,07	0,05	0,11	0,08	0,06	0,14	0,1	0,08	0,15	0,12	0,1	●	●	●
3.2	0,09	0,07	0,05	0,11	0,08	0,06	0,14	0,1	0,08	0,15	0,12	0,1	●	●	●
3.3	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.4	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.5	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.6	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.7	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.8	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
4.1															
4.2															
4.3															
4.4															
4.5															
4.6	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.7	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.8	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.9	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.10	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.11	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,16	0,13	0,1	●		
4.12	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,16	0,13	0,1	●		
4.13															
4.14															
4.15															
4.16															
4.17															
4.18															
4.19															
5.1															
5.2															
5.3	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.4	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.5	0,04	0,03	0,02	0,06	0,02	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.6	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.7	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.8	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.9	0,09	0,06	0,04	0,12	0,09	0,06	0,13	0,1	0,08	0,15	0,12	0,09	●		
5.10	0,07	0,05	0,03	0,09	0,07	0,05	0,1	0,08	0,06	0,12	0,1	0,08	●		
5.11	0,05	0,04	0,03	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,07	●		
6.1															
6.2															
6.3															
6.4															
6.5															

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

14

Cutting data – Roughing Cutters – 52 338 ... – 52 343 ...

Index	Full slot milling v_c m/min	Contour milling v_c m/min	Ti1000 Ø DC = 6 mm f_z in mm		Ø DC = 8 mm f_z in mm		Ø DC = 10 mm f_z in mm		Ø DC = 12 mm f_z in mm	
1.1	150–170	170–200	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.2	170–190	190–220	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.3	140–170	170–190	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.4	100–140	140–180	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.5	140–170	170–190	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.6	120–140	140–160	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.7	100–140	140–170	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.8	100–120	120–160	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.9	150–170	170–200	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.10										
1.11										
1.12	140–170	170–190	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.13										
1.14										
1.15	80–120	120–150	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.16	80–120	120–150	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
2.1	45-65	65-85	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.2	45-65	65-85	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.3	30-50	45-60	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.4	25-40	40-50	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.5	40-60	60-85	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.6	50-70	70-90	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.7										
3.1	100–130	130–150	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.2	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.3	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.4	80–100	100–120	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.5	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.6	80–100	100–120	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.7	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.8	80–100	100–120	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12										
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1	30-40	40-50	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10	35-50	50-60	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
5.11	30-40	40-50	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
6.1										
6.2										
6.3										
6.4										
6.5										

For **Full slot milling** the values indicated in the table are based on:

a_e = 1,0 x DC / a_p = 1,0 x DC

For **Contour milling** the values indicated in the table are based on:

a_e = 0,4 x DC / a_p = 1,0 x DC

	Ti1000										● 1st choice		○ suitable
	Ø DC = 14 mm f_z in mm		Ø DC = 16 mm f_z in mm		Ø DC = 18 mm f_z in mm		Ø DC = 20 mm f_z in mm		Ø DC = 25 mm f_z in mm				
Index											Emulsion	Compressed air	MMS
1.1	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.2	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.3	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.4	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.5	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.6	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.7	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.8	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.9	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.10													
1.11													
1.12	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.13													
1.14													
1.15	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.16	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
2.1	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.2	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.3	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.4	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.5	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.6	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.7													
3.1	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.2	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.3	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.4	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.5	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.6	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.7	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.8	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
4.1													
4.2													
4.3													
4.4													
4.5													
4.6													
4.7													
4.8													
4.9													
4.10													
4.11													
4.12													
4.13													
4.14													
4.15													
4.16													
4.17													
4.18													
4.19													
5.1	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9													
5.10	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
5.11	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
6.1													
6.2													
6.3													
6.4													
6.5													

With tools with internal cooling (52 338.../52 339...) the cutting speed (v_c) can be increased by 20–30 %!

14

Cutting data – High Feed Cutters 56 900 ... / 56 902 ... / 56 904 ...

			TiAlN							
			Medium	Roughing	Medium	Roughing	Medium	Roughing	Medium	Roughing
	Medium machining	Rough machining	**Ø DCX = 6 mm**	**Ø DCX = 6 mm**	**Ø DCX = 8 mm**	**Ø DCX = 8 mm**	**Ø DCX = 10 mm**	**Ø DCX = 10 mm**	**Ø DCX = 12 mm**	**Ø DCX = 12 mm**
			a_p = 0,1–0,2	a_p = 0,2–0,3	a_p = 0,1–0,2	a_p = 0,2–0,3	a_p = 0,1–0,2	a_p = 0,2–0,3	a_p = 0,1–0,2	a_p = 0,2–0,3
Index	v_c m/min	v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.1	**250–300**	**150–250**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
1.2	**250–300**	**150–250**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
1.3	**250–300**	**150–250**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
1.4	**200–250**	**180–200**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.5	**220–250**	**200–220**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.6	**220–250**	**200–220**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.7	**170–190**	**170–190**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.8	**160–180**	**160–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.9	**220–250**	**200–220**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.10	**170–190**	**170–190**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.11	**160–180**	**160–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.12	**170–190**	**170–190**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.13	**100–120**	**100–120**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.14	**80–100**	**80–100**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.15	**140–180**	**140–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.16	**140–180**	**140–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.1	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.2	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.3	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.4	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.5	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.6	80–110	60–90	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.7	80–110	60–90	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.1	300–350	250–300	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
3.2	180–250	180–250	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
3.3	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.4	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.5	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.6	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.7	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.8	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
4.1	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.2	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.3	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.4	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.5	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.6	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.7	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.8	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.9	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.10	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.11	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.12	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4	50–80	30–50	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
5.5										
5.6										
5.7	50–80	30–50	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
5.8										
5.9										
5.10	60–80	60–80	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
5.11	40–80	40–80	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
6.1	**160–190**	**160–190**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
6.2	**150–180**	**80–120**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
6.3	**120–150**	**80–100**	0,1–0,22	0,2–0,3	0,1–0,25	0,2–0,3	0,1–0,25	0,25–0,35	0,1–0,35	0,3–0,4
6.4	**80–110**	**60–90**	0,1–0,22	0,2–0,3	0,1–0,25	0,2–0,3	0,1–0,25	0,25–0,35	0,1–0,35	0,3–0,4
6.5										

The width of cut (a_e) in steel should be 60–95 % of the cutter diameter (Ø DC), with high-grade steels and for sticking materials 40 % of Ø DC maximum!

	TiAlN		● 1st choice		○ suitable
	Medium	Roughing			
	Ø DCX = 16 mm	Ø DCX = 16 mm			
	a_p = 0,1–0,25	a_p = 0,2–0,4			
Index	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.1	0,1–0,45	0,45–0,8		○	●
1.2	0,1–0,45	0,45–0,8		○	●
1.3	0,1–0,45	0,45–0,8		○	●
1.4	0,1–0,35	0,35–0,6		○	●
1.5	0,1–0,35	0,35–0,6		○	●
1.6	0,1–0,35	0,35–0,6		○	●
1.7	0,1–0,35	0,35–0,6		○	●
1.8	0,1–0,35	0,35–0,6		○	●
1.9	0,1–0,35	0,35–0,6		○	●
1.10	0,1–0,35	0,35–0,6		○	●
1.11	0,1–0,35	0,35–0,6		○	●
1.12	0,1–0,35	0,35–0,6		○	●
1.13	0,1–0,35	0,35–0,6		○	●
1.14	0,1–0,35	0,35–0,6		○	●
1.15	0,1–0,35	0,35–0,6		○	●
1.16	0,1–0,35	0,35–0,6		○	●
2.1	0,1–0,35	0,35–0,6	●		○
2.2	0,1–0,35	0,35–0,6	●		○
2.3	0,1–0,35	0,35–0,6	●		○
2.4	0,1–0,35	0,35–0,6	●		○
2.5	0,1–0,35	0,35–0,6	●		○
2.6	0,1–0,35	0,35–0,6	●		○
2.7	0,1–0,35	0,35–0,6	●		○
3.1	0,1–0,45	0,45–0,8		●	○
3.2	0,1–0,45	0,45–0,8		●	○
3.3	0,1–0,35	0,35–0,6		●	○
3.4	0,1–0,35	0,35–0,6		●	○
3.5	0,1–0,35	0,35–0,6		●	○
3.6	0,1–0,35	0,35–0,6		●	○
3.7	0,1–0,35	0,35–0,6		●	○
3.8	0,1–0,35	0,35–0,6		●	○
4.1	0,1–0,45	0,45–0,8	●		○
4.2	0,1–0,45	0,45–0,8	●		○
4.3	0,1–0,45	0,45–0,8	●		○
4.4	0,1–0,45	0,45–0,8	●		○
4.5	0,1–0,45	0,45–0,8	●		○
4.6	0,1–0,45	0,45–0,8	●		○
4.7	0,1–0,45	0,45–0,8	●		○
4.8	0,1–0,45	0,45–0,8	●		○
4.9	0,1–0,45	0,45–0,8	●		○
4.10	0,1–0,45	0,45–0,8	●		○
4.11	0,1–0,45	0,45–0,8	●		○
4.12	0,1–0,45	0,45–0,8	●		○
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4	0,1–0,45	0,45–0,8	○		●
5.5					
5.6					
5.7	0,1–0,45	0,45–0,8	○		●
5.8					
5.9					
5.10	0,1–0,45	0,45–0,8	○		●
5.11	0,1–0,45	0,45–0,8	○		●
6.1	0,1–0,45	0,45–0,8		●	○
6.2	0,1–0,35	0,35–0,6		●	○
6.3	0,1–0,35	0,35–0,45		●	○
6.4	0,1–0,35	0,35–0,45		●	○
6.5					

Cutting data – Cutters for plastic machining

	Suitable for:	Strength N/mm² – HB	50 981 ...	50 982 ...	50 983 ...	50 984 ...	50 985 ...	50 986 ...	50 987 ...	50 988 ...	50 932 ...	50 937 ...	50 936 ...	50 938 ...	50 610 ...	50 611 ...	52 76. ...	50 91. ...	50 946 ...	50 948 ...	50 947 ...
4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²													400–450			400–450			
4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²													400–450			400–450			
4.3	Aluminium alloys 0.5–10 % Si	< 400 N/mm²													350–400			350–400			
4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²												300–400					300–400	300–400	300–400
4.5	Aluminum alloys > 15 % Si	< 400 N/mm²												300–400					250–300	250–300	250–300
4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²													400–450			400–450			
4.7	Wrought Copper Alloys	< 700 N/mm²												200–250					200–250	200–250	200–250
4.8	Special copper alloys	< 200 HB												200–250					200–250	200–250	200–250
4.9	Special copper alloys	< 300 HB												200–250					200–250	200–250	200–250
4.10	Special copper alloys	> 300 HB												200–250					200–250	200–250	200–250
4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²													350–400			350–400			
4.12	Long-chipping brass	< 600 N/mm²													350–400			350–400			
4.13	Thermoplastics														500–550			500–550			
4.14	Duroplastics					300–350						300–350			500–550			500–550			
4.15	Fibre-reinforced plastics					150–200						150–200	500–600	150–200					150–200	150–200	150–200
4.16	Magnesium and magnesium alloys	< 850 N/mm²												250					250	250	250
4.17	Graphite					300–400						500–600	500–600	300–400				300	300–400		300–400
4.18	Tungsten and tungsten alloys																			200–250	250–300
4.19	Molybdenum and molybdenum alloys																			200–250	250–300

	Plastics, Thermoset, Hardwood, Pressed Cardboard					Plastic, Thermoplast, Polycarbonate, Non-ferrous metal, Hard rubber				
	End milling cutter Type W			Ball nosed cutter Type W		End milling cutter Type W			Ball nosed cutter Type W	
	Shoulder milling, trimming		Slot milling	Copy milling – Line milling		Shoulder milling, trimming		Slot milling	Copy milling – Line milling	
	Roughing	Finishing		Roughing	Finishing	Roughing	Finishing		Roughing	Finishing
	a_p = 1,0 x DC a_e = 0,4 x DC	a_p = 1,0 x DC a_e = 0,1 x DC		a_p = 0,5 x DC a_e = 0,5 x DC	a_p = 0,03 x DC a_e = 0,02 x DC	a_p = 1,5 x DC a_e = 0,8 x DC	a_p = 1,0 x DC a_e = 0,1 x DC		a_p = 0,5 x DC a_e = 0,5 x DC	a_p = 0,03 x DC a_e = 0,02 x DC
DC in mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2	0,024	0,018	0,016	0,028	0,024	0,024	0,022	0,017	0,037	0,03
3	0,036	0,027	0,024	0,042	0,036	0,036	0,033	0,026	0,056	0,045
4	0,048	0,036	0,032	0,056	0,048	0,048	0,044	0,034	0,074	0,06
5	0,060	0,045	0,04	0,07	0,06	0,060	0,055	0,043	0,093	0,075
6	0,072	0,054	0,048	0,084	0,072	0,072	0,066	0,051	0,111	0,09
8	0,10	0,07	0,06	0,11	0,10	0,10	0,09	0,07	0,15	0,12
10	0,12	0,09	0,08	0,14	0,12	0,12	0,11	0,09	0,19	0,15
12	0,14	0,11	0,10	0,17	0,14	0,14	0,13	0,10	0,22	0,18
14	0,17	0,13	0,11	0,20	0,17	0,17	0,15	0,12	0,26	0,21
16	0,19	0,14	0,13	0,22	0,19	0,19	0,18	0,14	0,30	0,24
18	0,22	0,16	0,14	0,25	0,22	0,22	0,20	0,15	0,33	0,27
20	0,24	0,18	0,16	0,28	0,24	0,24	0,22	0,17	0,37	0,30

	Fiber reinforced plastics AFK, CFK, GFK			
	End mill staggered teeth			
	Shoulder milling, trimming		Copy milling – Line milling	
	a_p = 1,0 x DC a_e = 0,05 x DC	a_p = 1,0 x DC a_e = 0,05 x DC	a_p = 0,35 x DC	a_p = 0,35 x DC
	fine	Medium	fine	Medium
DC in mm	f	f	f	f
2	0,16	0,14	0,14	0,12
3	0,24	0,21	0,21	0,18
4	0,32	0,28	0,28	0,24
5	0,40	0,35	0,35	0,30
6	0,48	0,42	0,42	0,36
8	0,64	0,56	0,56	0,48
10	0,80	0,70	0,70	0,60
12	0,96	0,84	0,84	0,72
16	1,28	1,12	1,12	0,96
20	1,60	1,40	1,40	1,20

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

Cutting data standard values – Circular saw blades

	Circular saws Solid carbide Fine	
Index	v_c m/min	f_z mm
1.1	100–160	0,005–0,01
1.2	100–160	0,005–0,01
1.3	100–160	0,005–0,01
1.4	80–130	0,003–0,007
1.5	80–130	0,003–0,007
1.6	80–130	0,003–0,007
1.7	100–160	0,005–0,01
1.8	50–100	0,003–0,007
1.9	80–130	0,003–0,007
1.10	80–130	0,003–0,007
1.11	50–100	0,003–0,007
1.12	50–100	0,003–0,007
1.13	50–100	0,003–0,007
1.14	50–100	0,003–0,007
1.15	50–100	0,003–0,007
1.16	50–100	0,003–0,007
2.1	80–130	0,003–0,007
2.2	80–130	0,003–0,007
2.3	80–130	0,003–0,007
2.4	50–100	0,003–0,007
2.5	80–130	0,003–0,007
2.6	100–160	0,003–0,007
2.7	50–100	0,003–0,007
3.1	80–130	0,003–0,007
3.2	50–100	0,003–0,007
3.3	50–100	0,003–0,007
3.4	50–100	0,003–0,007
3.5	80–130	0,003–0,007
3.6	80–130	0,003–0,007
3.7	80–130	0,003–0,007
3.8	50–100	0,003–0,007
4.1	200–500	0,005–0,01
4.2	200–500	0,005–0,01
4.3	200–500	0,005–0,01
4.4	200–450	0,005–0,01
4.5	200–450	0,005–0,01
4.6	200–450	0,005–0,01
4.7	150–300	0,005–0,01
4.8	150–300	0,005–0,01
4.9	150–300	0,005–0,01
4.10	150–300	0,005–0,01
4.11	200–400	0,005–0,01
4.12		
4.13	150–300	0,005–0,01
4.14	80–250	0,005–0,01
4.15		
4.16		
4.17		
4.18		
4.19		
5.1		
5.2	50–100	0,003–0,007
5.3	50–100	0,003–0,007
5.4	20–30	0,003–0,007
5.5	20–30	0,003–0,007
5.6	20–30	0,003–0,007
5.7	20–30	0,003–0,007
5.8	20–30	0,003–0,007
5.9	30–70	0,003–0,007
5.10	30–70	0,003–0,007
5.11	30–70	0,003–0,007
6.1	50–100	0,003–0,007
6.2		
6.3		
6.4		
6.5		

14

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting Speeds – Depending upon Coating

			TiCN		Ti400		● 1st choice		○ suitable	Ti1000 / Ti1002		● 1st choice		○ suitable
							Emulsion	Compressed air	MMS			Emulsion	Compressed air	MMS
Index	v_c m/min		v_c m/min		v_c m/min					v_c m/min				
1.1	90–110	130–160	110–130	160–200	90–130	140–200	●	○	○	150–170	220–240	○	●	○
1.2	90–110	130–160	110–130	160–200	90–130	140–200	●	○	○	150–170	220–240	○	●	○
1.3	90–110	130–160	110–130	160–200	90–130	140–200	●	○	○	150–170	220–240	○	●	○
1.4	70–90	100–130	90–110	120–160	80–100	100–150	●	○	○	120–140	170–200	○	●	○
1.5	80–100	120–140	100–120	150–170	90–110	100–160	●	○	○	130–150	180–220	○	●	○
1.6	50–60	70–90	60–80	80–110	60–70	80–110	●	○	○	70–100	100–140	○	●	○
1.7	70–90	100–130	90–110	120–160	80–100	140–160	●	○	○	120–140	170–200	○	●	○
1.8	40–60	60–80	50–70	70–100	50–70	70–100	●	○	○	60–80	90–120	○	●	○
1.9	60–70	80–100	70–80	100–120	70–90	100–140	●	○	○	80–100	120–150	○	●	○
1.10	50–60	70–90	60–80	80–110	60–80	70–110	●	○	○	70–100	100–140	○	●	○
1.11	40–50	60–70	50–60	70–85	50–70	70–90	●	○	○	60–80	90–120	○	●	○
1.12	50–60		60–80	80–110	60–70	70–100	●	○	○	70–100	100–140	○	●	○
1.13	30–40	40–60	30–50	50–70	40–50	60–80	●	○	○	60–70	80–100	○	●	○
1.14	10–20	15–30	15–30	20–40	20–40	30–40	●	○	○	25–35	40–50	○	●	○
1.15	30–50	40–70	30–60	50–80	40–60	70–100	●	○	○	60–80	80–120	○	●	○
1.16	25–40	40–60	30–50	50–70	40–60	70–100	●	○	○	50–80	70–110	○	●	○
2.1	40–50	60–70	50–60	70–80	50–60	70–100	●	○	○	60–80	90–120	●		○
2.2	40–50	60–70	50–60	70–80	40–50	60–80	●	○	○	60–80	90–120	●		○
2.3	30–40	40–50	30–40	50–60	40–50	50–90	●	○	○	50–70	80–100	●		○
2.4	20–30	30–40	25–35	40–50	25–35	40–70	●	○	○	40–60	60–80	●		○
2.5	30–40	40–50	30–40	50–60	40–50	70–100	●	○	○	50–70	80–100	●		○
2.6	40–50	60–70	50–60	70–80	50–60	80–110	●	○	○	70–80	100–120	●		○
2.7	20–30	30–40	25–35	40–50	20–30	50–90	●	○	○	40–60	60–80	●		○
3.1	60–80	90–120	70–100	110–140	70–90	100–130	●	○	○	100–110	140–160	○	●	○
3.2	60–70	80–100	70–90	100–120	60–80	90–120	●	○	○	80–100	120–140	○	●	○
3.3	60–70	80–100	70–90	100–120	70–90	100–130	●	○	○	80–100	120–140	○	●	○
3.4	50–60	70–90	60–80	80–110	60–80	90–120	●	○	○	70–80	100–120	○	●	○
3.5	60–80	90–120	80–100	110–150	70–90	100–130	●	○	○	100–110	140–160	○	●	○
3.6	60–80	90–120	80–100	110–150	60–80	90–120	●	○	○	100–110	140–160	○	●	○
3.7	60–70	80–100	70–90	100–120	70–90	100–130	●	○	○	80–100	120–140	○	●	○
3.8	50–60	70–90	60–80	90–110	60–80	90–120	●	○	○	70–80	100–120	○	●	○
4.1	<300	<400	<300	<450	280–320	250–350	●	○	○	180–350	250–500	●		○
4.2	<300	<400	<300	<450	280–320	220–320	●	○	○	180–350	250–500	●		○
4.3	130–180	200–250	170–210	240–300	220–270	200–300	●	○	○	140–200	200–300	●		○
4.4	100–120	140–170	120–140	170–200	170–200	200–250	●	○	○	110–130	160–180	●		○
4.5	40–60	60–80	50–70	70–90	120–180	150–200	●	○	○	50–70	80–100	●		○
4.6	150–180	210–260	180–210	250–310	100–130	120–180	●	○	○	180–210	250–300	●		○
4.7	110–150	160–200	130–170	190–240	100–130	140–200	●	○	○	130–170	180–240	●		○
4.8	140–180	200–250	170–210	240–300	120–160	160–220	●	○	○	160–200	220–280	●		○
4.9	120–160	170–230	140–180	210–270	120–160	160–220	●	○	○	140–180	200–250	●		○
4.10	80–120	120–150	100–140	150–180	120–160	160–220	●	○	○	100–140	150–200	●		○
4.11	160–200	230–280	180–210	280–330	100–130	120–200	●	○	○	180–210	250–300	●	○	○
4.12	120–160	170–230	140–180	210–270	100–130	120–200	●	○	○	140–180	200–250	●	○	○
4.13	40–60	60–90	40–70	70–100	70–90	90–120	●	○	○	40–70	60–100	○	●	○
4.14	50–70	70–100	60–80	80–120	120–180	150–220	●	○	○	60–80	80–120	○	●	○
4.15	30–50	40–70	40–60	50–80	50–70	70–110	●	○	○	40–60	60–80	○	●	○
4.16	150–180	220–260	180–210	270–310	170–200	170–250		●	○	180–210	250–300		●	○
4.17	70–100	100–140	80–120	120–170	100–120	130–180		●	○	80–120	120–180		●	○
4.18	50–60	60–80	60–70	70–100	60–80	80–100	●	○	○	60–70	80–100	○	●	○
4.19	50–70	70–90	60–80	80–110	60–80	80–100	●	○	○	60–80	90–120	○	●	○
5.1	15–25	20–35	35–50	50–70	30–50	50–70	●	○	○	40–60	60–80	●	○	○
5.2	10–20	15–30	25–35	40–50	25–40	40–60	●	○	○	30–40	40–60	●	○	○
5.3	15–25	20–35	30–40	40–60	40–60	50–80	●	○	○	35–50	50–70	●	○	○
5.4			30–50	50–60	30–50	50–70	●	○	○	40–60	60–80	●	○	○
5.5			25–35	40–50	30–40	40–60	●	○	○	30–40	40–60	●	○	○
5.6			10–20	30–40	30–40	40–60	●	○	○	20–30	30–40	●	○	○
5.7			20–30	40–50	25–35	30–50	●	○	○	30–40	40–60	●	○	○
5.8			20–30	40–50	30–40	40–60	●	○	○	30–40	40–60	●	○	○
5.9	30–50	40–70	50–60	60–80	40–50	70–100	●	○	○	50–70	80–100	●	○	○
5.10	30–40	40–50	40–50	60–70	50–60	80–120	●	○	○	50–60	70–90	●	○	○
5.11			15–20	30–40	30–40	40–60	●	○	○	20–30	30–40	●	○	○
6.1							●	○	○	70–80	100–120		●	○
6.2							●	○	○	60–70	80–100		●	○
6.3							●	○	○	40–60	60–80		●	○
6.4							●	○	○	30–40	40–60		●	○
6.5							●	○	○	20–30	30–40		●	○

Index	Ti1001 v_c m/min		● 1st choice / ○ suitable: Emulsion	Compressed air	MMS	Ti10 / Ti20 v_c m/min		● 1st choice / ○ suitable: Emulsion	Compressed air	MMS
1.1										
1.2										
1.3										
1.4										
1.5										
1.6										
1.7										
1.8										
1.9										
1.10										
1.11										
1.12										
1.13										
1.14										
1.15										
1.16										
2.1										
2.2										
2.3										
2.4										
2.5										
2.6										
2.7										
3.1										
3.2										
3.3										
3.4										
3.5										
3.6										
3.7										
3.8										
4.1	300–400	300–500	●		○	150–350	250–500	●		○
4.2	300–400	300–500	●		○	120–220	150–300	●		○
4.3	250–300	300–450	●		○	150–180	220–250	●		○
4.4	200–250	250–350	●		○	100–130	150–180	●		○
4.5	150–200	200–250	●		○					
4.6	220–280	250–330	●		○	120–150	170–220	●		○
4.7	180–220	200–280	●		○	140–150	200–220	●		○
4.8	160–200	180–250	●		○					
4.9	150–200	160–250	●		○					
4.10	140–200	150–250	●		○					
4.11						170–180	240–260	●		○
4.12						180–200	260–280	●		○
4.13						140–170	200–240	●		○
4.14						220–280	300–400	●		○
4.15						70–100	100–140	●		○
4.16						140–170	200–250		●	
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9							80–100	●		○
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

Depths of Cut Reference Values – Milling Cutters – extra short – long

Index	$a_{p\,max.}$ x DC		Ø DC = 2,5 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 2,5 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 2,5 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 3 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 3 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 3 mm a_e 0,6–1,0 x DC f_z mm	$a_{p\,max.}$ x DC		Ø DC = 4 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 4 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 4 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 5 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 5 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 5 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 6 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 6 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 6 mm a_e 0,6–1,0 x DC f_z mm
1.1	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
1.2	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
1.3	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,041	0,027	0,020	0,054	0,035	0,026
1.4	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.5	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.6	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.7	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.8	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.9	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.10	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.11	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.12	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.13	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.14	1,0	0,4	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.15	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.16	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
2.1	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.2	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.3	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.4	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.5	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.6	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.7	1,0	0,5	0,011	0,007	0,005	0,016	0,010	0,008	1,5	1	0,021	0,014	0,010	0,028	0,018	0,014	0,035	0,023	0,017
3.1	1,0	0,5	0,020	0,013	0,010	0,029	0,019	0,014	1,5	1	0,039	0,026	0,019	0,052	0,034	0,025	0,064	0,042	0,031
3.2	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.3	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.4	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.5	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.6	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.7	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.8	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
4.1	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.2	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.3	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.4	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.5	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.6	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.7	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.8	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.9	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.10	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.11	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.12	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.13	1,0	0,5	0,040	0,026	0,019	0,058	0,038	0,028	1,5	1	0,078	0,051	0,038	0,103	0,068	0,050	0,128	0,084	0,062
4.14	1,0	0,5	0,044	0,029	0,021	0,064	0,042	0,031	1,5	1	0,086	0,057	0,042	0,114	0,074	0,055	0,141	0,092	0,068
4.15	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.16	1,0	0,5	0,026	0,017	0,012	0,038	0,025	0,018	1,5	1	0,051	0,033	0,025	0,067	0,044	0,033	0,083	0,054	0,040
4.17	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.18	1,0	0,5	0,016	0,010	0,008	0,023	0,015	0,011	1,5	1	0,031	0,021	0,015	0,041	0,027	0,020	0,051	0,034	0,025
4.19	1,0	0,5	0,012	0,008	0,006	0,017	0,011	0,008	1,5	1	0,024	0,015	0,011	0,031	0,020	0,015	0,038	0,025	0,019
5.1	0,7	0,3	0,017	0,011	0,008	0,024	0,016	0,012	1,0	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
5.2	0,7	0,3	0,017	0,011	0,008	0,024	0,016	0,012	1,0	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
5.3	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.4	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.5	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.6	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.7	0,7	0,3	0,014	0,009	0,007	0,020	0,013	0,010	1,0	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
5.8	0,7	0,3	0,014	0,009	0,007	0,020	0,013	0,010	1,0	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
5.9	0,7	0,3	0,017	0,011	0,008	0,024	0,016	0,012	1,0	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
5.10	0,7	0,3	0,018	0,012	0,009	0,026	0,017	0,013	1,0	1	0,035	0,023	0,017	0,046	0,030	0,023	0,058	0,038	0,028
5.11	0,7	0,3	0,018	0,012	0,009	0,026	0,017	0,013	1,0	1	0,035	0,023	0,017	0,046	0,030	0,023	0,058	0,038	0,028

Index	$a_{p\,max.}$	a_e : 0,1 x DC	a_e : 0,1 x DC	$a_{p\,max.}$	a_e : 0,1 x DC	a_e : 0,1 x DC	a_e : 0,1 x DC
6.1	0,5[1]	0,021	0,030	1,0[1]	0,041	0,054	0,067
6.2	0,5[1]	0,019	0,027	1,0[1]	0,037	0,049	0,061
6.3	0,5[1]	0,017	0,025	1,0[1]	0,034	0,045	0,056
6.4	0,5[1]	0,015	0,022	1,0[1]	0,030	0,040	0,050
6.5	0,5[1]	0,013	0,020	1,0[1]	0,026	0,035	0,043

Finishing cutter

$a_{p\,max.}$			$a_{p\,max.}$	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm
0,7			1,5	0,08*	0,09*	0,1*

[1] = Trimming and trochoidal slot milling

* = To improve the surface quality reduce the f_z

Cutting data for Micro-Mini cutters for milling with diameter < 2.5 mm → v_c/f_z Page 318–325

Index	Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20–25 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
1.2	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
1.3	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.4	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.5	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.6	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.7	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.8	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.9	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.10	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.11	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.12	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.13	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.14	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.15	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.16	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
2.1	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.2	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.3	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.4	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.5	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.6	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.7	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,04	0,03	0,09	0,06	0,04	0,09	0,06	0,04	0,11	0,07	0,05
3.1	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,06	0,14	0,08	0,06	0,16	0,10	0,07	0,17	0,11	0,08	0,20	0,13	0,08
3.2	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.3	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.4	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.5	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.6	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.7	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.8	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
4.1	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.2	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.3	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.4	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.5	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.6	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.7	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.8	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.9	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.10	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.11	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.12	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.13	0,17	0,11	0,08	0,21	0,14	0,10	0,23	0,15	0,11	0,28	0,16	0,12	0,32	0,21	0,14	0,35	0,23	0,15	0,39	0,26	0,17
4.14	0,18	0,12	0,09	0,23	0,15	0,11	0,25	0,16	0,12	0,31	0,18	0,13	0,35	0,23	0,15	0,38	0,25	0,17	0,43	0,28	0,19
4.15	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.16	0,11	0,07	0,05	0,13	0,09	0,07	0,15	0,10	0,07	0,18	0,11	0,08	0,21	0,13	0,09	0,23	0,15	0,10	0,25	0,17	0,11
4.17	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.18	0,07	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,07	0,05	0,13	0,08	0,05	0,14	0,09	0,06	0,16	0,10	0,07
4.19	0,05	0,03	0,02	0,06	0,04	0,03	0,07	0,05	0,03	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05
5.1	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
5.2	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
5.3	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.4	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.5	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.6	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.7	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
5.8	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
5.9	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
5.10	0,07	0,05	0,04	0,09	0,06	0,05	0,10	0,07	0,05	0,13	0,07	0,05	0,14	0,09	0,06	0,16	0,10	0,07	0,18	0,12	0,08
5.11	0,07	0,05	0,04	0,09	0,06	0,05	0,10	0,07	0,05	0,13	0,07	0,05	0,14	0,09	0,06	0,16	0,10	0,07	0,18	0,12	0,08
	a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC		
6.1	0,09			0,11			0,12			0,13			0,15			0,16			0,18		
6.2	0,08			0,10			0,11			0,12			0,13			0,15			0,17		
6.3	0,07			0,09			0,10			0,11			0,12			0,14			0,15		
6.4	0,06			0,08			0,09			0,10			0,11			0,12			0,13		
6.5	0,06			0,07			0,08			0,08			0,10			0,11			0,12		
	Finishing cutter																				
	a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm		
	0,11*			0,13*			0,15*			0,17*			0,19*			0,21*			0,23*		

Plunging angle for ramping and helical milling: 3°

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

14

Depths of Cut Reference Values – Milling Cutters – extra long

Index	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 2,5 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 3 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 3 mm a_e 0,3–0,4 x DC f_z mm	$a_{p\,max.}$ x DC	Ø DC = 4 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 4 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 5 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 5 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 6 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 6 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 8 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 8 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 10 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 10 mm a_e 0,3–0,4 x DC f_z mm
1.1	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
1.2	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
1.3	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,052	0,034	0,049	0,032	0,07	0,04	0,08	0,05
1.4	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.5	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.6	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.7	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.8	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.9	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.10	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.11	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.12	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.13	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.14	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.15	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.16	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
2.1	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.2	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.3	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.4	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.5	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.6	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.7	0,6	0,008	0,005	0,016	0,010	1,0	0,021	0,014	0,026	0,017	0,031	0,021	0,04	0,03	0,05	0,03
3.1	0,6	0,015	0,010	0,029	0,019	1,0	0,039	0,025	0,048	0,032	0,058	0,038	0,08	0,05	0,10	0,06
3.2	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.3	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.4	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.5	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.6	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.7	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.8	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
4.1	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.2	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.3	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.4	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.5	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.6	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.7	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.8	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.9	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.10	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.11	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.12	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.13	0,6	0,031	0,020	0,058	0,038	1,0	0,077	0,051	0,097	0,063	0,116	0,076	0,16	0,10	0,19	0,13
4.14	0,6	0,034	0,022	0,064	0,042	1,0	0,085	0,056	0,107	0,070	0,128	0,084	0,17	0,11	0,21	0,14
4.15	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.16	0,6	0,020	0,013	0,038	0,025	1,0	0,050	0,033	0,063	0,041	0,076	0,049	0,10	0,07	0,13	0,08
4.17	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.18	0,6	0,012	0,008	0,023	0,015	1,0	0,031	0,020	0,039	0,025	0,046	0,030	0,06	0,04	0,08	0,05
4.19	0,6	0,009	0,006	0,017	0,011	1,0	0,023	0,015	0,029	0,019	0,035	0,023	0,05	0,03	0,06	0,04
5.1	0,3	0,013	0,009	0,024	0,016	0,5	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
5.2	0,3	0,013	0,009	0,024	0,016	0,5	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
5.3	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.4	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.5	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.6	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.7	0,3	0,011	0,007	0,020	0,013	0,5	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
5.8	0,3	0,011	0,007	0,020	0,013	0,5	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
5.9	0,3	0,013	0,009	0,024	0,016	0,5	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
5.10	0,3	0,014	0,009	0,026	0,017	0,5	0,035	0,023	0,044	0,029	0,052	0,034	0,07	0,05	0,09	0,06
5.11	0,3	0,014	0,009	0,026	0,017	0,5	0,035	0,023	0,044	0,029	0,052	0,034	0,07	0,05	0,09	0,06
	$a_{p\,max.}$	a_e : 0,1 x DC		a_e : 0,1 x DC		$a_{p\,max.}$	a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC	
6.1	0,3[1]	0,013		0,024		0,5[1]	0,033		0,041		0,049		0,07		0,08	
6.2	0,3[1]	0,012		0,022		0,5[1]	0,029		0,037		0,044		0,06		0,07	
6.3	0,3[1]	0,011		0,020		0,5[1]	0,027		0,034		0,041		0,05		0,07	
6.4	0,3[1]	0,010		0,018		0,5[1]	0,024		0,030		0,036		0,05		0,06	
6.5	0,3[1]	0,008		0,016		0,5[1]	0,021		0,026		0,031		0,04		0,05	

Finishing cutter

$a_{p\,max.}$	$a_{p\,max.}$	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm
0,6	1,5	0,08*	0,09*	0,1*	0,11*	0,13*

[1] = Trimming and trochoidal slot milling

* = With an a_p of 1.5 x DC the f_z should be multiplied by 0.75

Cutting data for Micro-Mini cutters for milling with diameter < 2.5 mm

→ v_c/f_z Page 318–325

Index	Ø DC = 12 mm		Ø DC = 14 mm		Ø DC = 16 mm		Ø DC = 18 mm		Ø DC = 20–25 mm	
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC
	f_z mm		f_z mm		f_z mm		f_z mm		f_z mm	
1.1	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
1.2	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
1.3	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.4	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.5	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.6	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.7	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.8	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.9	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.10	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.11	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.12	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.13	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.14	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.15	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.16	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
2.1	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.2	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.3	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.4	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.5	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.6	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.7	0,06	0,04	0,06	0,04	0,07	0,05	0,08	0,05	0,09	0,06
3.1	0,11	0,07	0,12	0,08	0,13	0,09	0,15	0,10	0,16	0,11
3.2	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.3	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.4	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.5	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.6	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.7	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.8	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
4.1	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.2	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.3	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.4	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.5	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.6	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.7	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.8	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.9	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.10	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.11	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.12	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.13	0,21	0,14	0,23	0,15	0,26	0,17	0,29	0,19	0,33	0,21
4.14	0,23	0,15	0,26	0,17	0,29	0,19	0,32	0,21	0,36	0,23
4.15	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.16	0,14	0,09	0,15	0,10	0,17	0,11	0,19	0,12	0,21	0,14
4.17	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.18	0,09	0,06	0,09	0,06	0,11	0,07	0,12	0,08	0,13	0,09
4.19	0,06	0,04	0,07	0,05	0,08	0,05	0,09	0,06	0,10	0,06
5.1	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
5.2	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
5.3	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.4	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.5	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.6	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.7	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
5.8	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
5.9	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
5.10	0,10	0,06	0,11	0,07	0,12	0,08	0,13	0,09	0,15	0,10
5.11	0,10	0,06	0,11	0,07	0,12	0,08	0,13	0,09	0,15	0,10
	a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC	
6.1	0,09		0,10		0,11		0,12		0,14	
6.2	0,08		0,09		0,10		0,11		0,12	
6.3	0,08		0,08		0,09		0,10		0,11	
6.4	0,07		0,07		0,08		0,09		0,10	
6.5	0,06		0,06		0,07		0,08		0,09	
	Finishing cutter									
	a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm	
	0,15*		0,17*		0,19*		0,21*		0,23*	

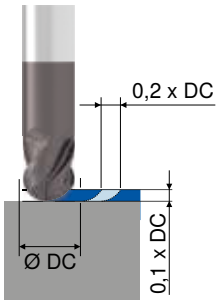
Plunging angle for ramping and helical milling: 3°

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

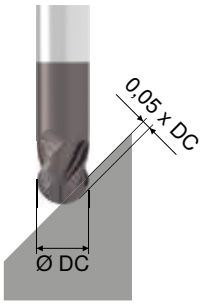
14

Feedrate for machining in steel, iron and non-ferrous materials with torus and ball nosed end mills

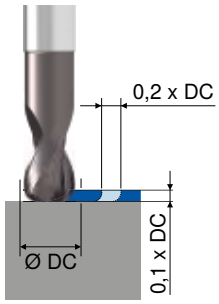
Ball nose end milling cutters



Ball nosed and torus cutters



Torus end milling cutters



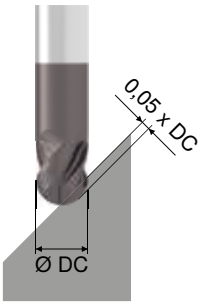
Ø DC mm	f_z mm	f_z mm	f_z mm
2	0,015	0,010	0,010
3	0,030	0,020	0,015
4	0,040	0,030	0,020
5	0,060	0,050	0,030
6	0,070	0,060	0,050
8	0,100	0,080	0,070
10	0,120	0,100	0,080
12	0,150	0,120	0,100
16	0,180	0,150	0,120
18	0,200	0,180	0,140
20	0,220	0,200	0,150

The feed should be reduced by 10–20 % for uncoated tools.

Feedrates for the machining of hardened materials with Ti1000 coated torus and ball nosed cutters

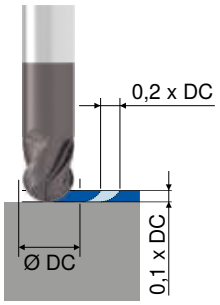
Ball nosed and torus cutters

Hardness = 40–60 HRC
v_c = 80–120 m/min



Ball nosed and torus cutters

Hardness = 40–60 HRC
v_c = 80–120 m/min



Ø DC mm	f_z mm	f_z mm
2	0,005	0,005
3	0,015	0,010
4	0,030	0,015
5	0,050	0,020
6	0,060	0,030
8	0,070	0,035
10	0,080	0,040
12	0,080	0,050
16	0,100	0,080

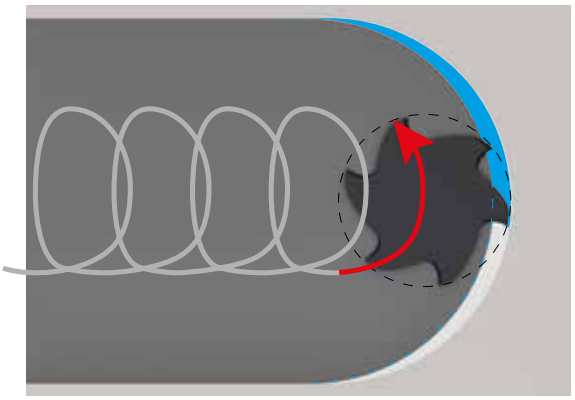
Trochoidal milling

The trochoidal milling process means that large depths of cut with unstable or lower powered machines are possible.

Depending on the strength of the material, radial step over of between 5–20 % of the cutting diameter should be used. Since the trochoidal milling is only peripheral milling, the cutting forces are far less.

Advantages/Benefits

- Reduced tool wear
- Reduced cycle time
- Protection of the machine tool components
- Exploiting the full length of the cutting edge
- Reduced cutting pressure



Most CAM providers offer an application for trochoidal milling. Our recommendations for this application are as follows:

Material	Depth of Cut	Radial Infeed	Feed rate Correction Factor	v_c Correction Factor
Steel	2xD	0,05xD	3,5	1,6
	2xD	0,10xD	2,5	1,3
Stainless steel	2xD	0,05xD	3,5	1,4
	2xD	0,10xD	2,5	1,2
Cast iron	2xD	0,05xD	3,5	1,6
	2xD	0,10xD	2,5	1,3
Non-ferrous metals	2xD	0,05xD	3,5	1,8
	2xD	0,10xD	2,5	1,4
	2xD	0,20xD	1,5	1,2

Please note that the indicated values may require reducing due to the component design, machine rigidity and machine dynamics. In optimal conditions, the values can also be increased.

14

Technical references

Feedrate Adjustment

If the rpm indicated in the tables cannot be obtained by the machine spindle, the feed rate is to be reduced proportionally to the max rpm.

Example:
according to table = n 50000 1/min. and v_f 1000 mm/min.,
maximum machine rpm = 40000 1/min.

Calculation of feed rate which can be applied:
40000 = 80 % of 50000 1/min. accordingly 80 % of 1000 = 800 mm/min.

Feed rate which can be applied = **800 mm/min.**

Cutting data for tapered milling cutters

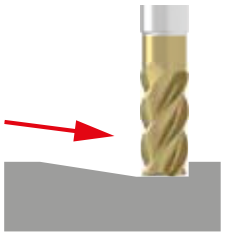
Using tapered milling cutters in various positions of the cutting edge different effective diameters cut into the material, the following has to be observed when calculating the cutting parameters:

- To determine the rpm, the largest diameter must be used in line with the cutting data table
- To determine the feedrate, the smallest diameter must be used in line with the cutting data table



Angled ramping with solid carbide cutters

Angled ramping with solid carbide cutters is possible at an angle of 3° to 6° depending on the cutter type.
A protective edge chamfer or corner radius is an advantage.

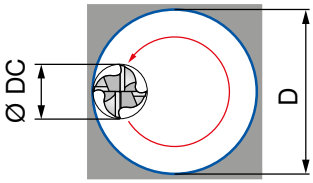
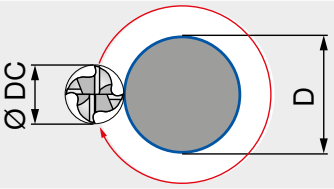
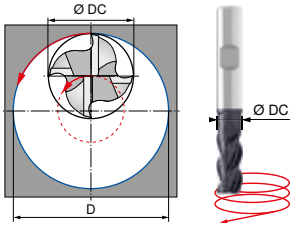


General formula for calculating the cutting parameters

Designation	Abbreviation	Unit	Formula	Example	
Number of revolutions	**n**	**min^{-1}**	$n = \frac{v_c \times 1000}{DC \times \pi}$	v_c = 25 m/min DC = 20 mm	$n = \frac{25 \times 1000}{20 \times \pi}$ = 398 min^{-1}
Cutting speed	**v_c**	**m/min**	$v_c = \frac{DC \times \pi \times n}{1000}$	n = 400 min^{-1} DC = 20 mm	$v_c = \frac{20 \times \pi \times 400}{1000}$ = 25 m/min
Feed per tooth	**f_z**	**mm**	$f_z = \frac{v_f}{ZEFP \times n}$	v_f = 320 mm/min. n = 400 min^{-1} ZEFP = 4	$f_z = \frac{320}{4 \times 400}$ = 0,2 mm
Feed per revolution	**f**	**mm**	$f = f_z \times ZEFP$	f_z = 0,2 mm ZEFP = 4	f = 0,2 x 4 = 0,8 mm
Feed rate	**v_f**	**mm/min.**	$v_f = f_z \times ZEFP \times n$	f_z = 0,2 mm ZEFP = 4 n = 400 min^{-1}	v_f = 0,2 x 4 x 400 = 320 mm/min.
Average chip thickness	**h_m**	**mm**	$h_m = f_z \times \sqrt{\frac{a_e}{DC}}$	f_z = 0,2 mm a_e = 0,3 mm DC = 20 mm	h_m = 0,2 x $\sqrt{\frac{0,3}{20}}$ = 0,024 mm

ZEFP = Number of teeth
a_e = cutting width

Calculation of the feed rate on the midpoint path of the milling cutter (v_{fM})

Designation	Abbreviation	Unit	Formula	Example
Internal contour	**v_{fM}**	**mm/min.**	$V_{fM} = \frac{v_f \times (D - DC)}{D}$	
Outside profile	**v_{fM}**	**mm/min.**	$V_{fM} = \frac{v_f \times (D + DC)}{D}$	
Helical ramping	**v_{fM}**	**mm/min.**	$V_{fM} = \frac{n \times f_z \times ZEFP \times (D - D_C)}{D}$	

14

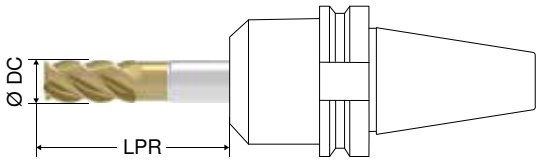
Tips for Tool Selection

Rake and helix angles combined with the coating are decisive factors for the operational area.

Characteristics	Benefits
Helix angle with slow spiral	
▲ For soft steels, non ferrous metals, etc.	▲ High edge stability
▲ For high material removal rates	▲ Low tendency to edge chipping
▲ For slot milling, pocket milling, rough milling	
Helix angle with quick spiral	
▲ For materials with high tensile strength	▲ Soft cut
▲ For low material removal rates	▲ Low cutting forces
▲ Typical for finishing processes	
Small rake angles are applied	
▲ For hard, brittle materials	▲ High edge stability
▲ For high material removal rates	▲ Low tendency to edge chipping
▲ For rough machining	
Large rake angles are applied	
▲ For soft materials	▲ Soft cut
▲ For low material removal rates	▲ Low cutting forces
▲ For finishing	▲ Favorable chip flow
	▲ Low tendency to stick

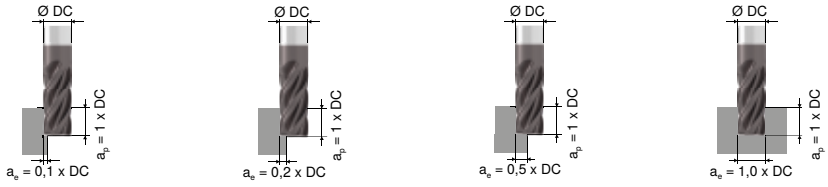
Correction factor for solid carbide milling cutters

Factors for cutting speed (v_c) and feed rate (f_z) in relation to the overhang length (LPR)



Length					
Overhang length (LPR)	1,5 x DC	4 x DC	8 x DC	12 x DC	> 12 x DC
Factor for v_c (Kf v_c)	1,0	1,0	0,9	0,85	0,7
Factor for f_z (Kf f_z)	1,2	1,0	0,8	0,7	0,5

Factors for cutting speed (v_c) and feed rate (f_z) in relation to the cutting depth (a_p) and cutting width (a_e)



Factor for v_c (Kf v_c)	1,3	1,1	1,0	0,85
Factor for f_z (Kf f_z)	1,5	1,3	1,0	0,8

Calculation aid for copy milling

Theoretical surface roughness (R_{th}) and step over (b_r)

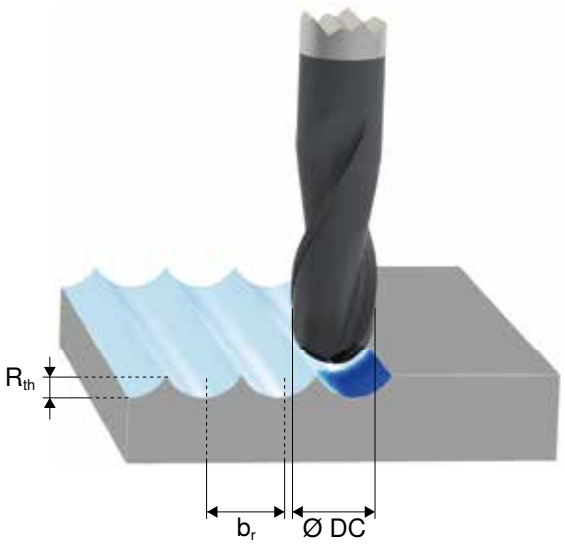
$$R_{th} = r - \sqrt{\frac{(r \times 2)^2 - b_r^2}{4}}$$

$$b_r = 2 \times \sqrt{R_{th} \times (r \times 2 - R_{th})}$$

$$R_{th} \simeq R_a / 0{,}1$$

$$R_a \simeq 0{,}1 \times R_{th}$$

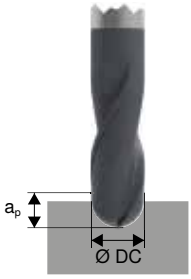
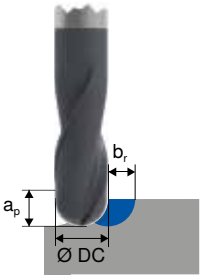
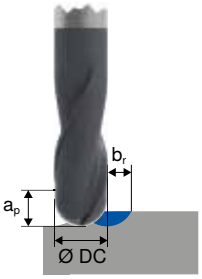
When copy milling, in order to achieve as smooth a surface as possible, the step over b_r should be adapted to the cutter diameter DC. The smaller the cutter diameter DC is, the smaller the step over b_r must be.



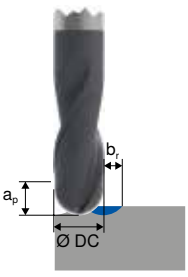
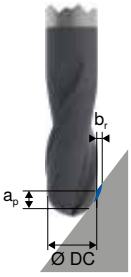
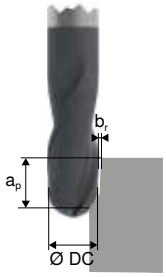
RPM correction factor (Kf n) for copy milling

$$n = \frac{v_c \times 1000}{DC \times \pi} \times Kf\,n$$

Rough machining

	Peripheral and ball nose copy milling	Ball nose copy milling	
			
Axial milling depth a_p	0,5 x DC	> 0,5 x DC	0,2 x DC – 0,5 x DC
Step over b_r	1 x DC	0,2 x DC – 0,5 x DC	0,2 x DC – 0,5 x DC
Correction factor (Kf n)	1	1	1,1

Finish milling

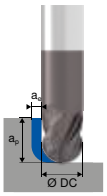
	Ball nose copy milling		
			
Axial milling depth a_p	< 0,2 x DC	0,2 x DC – 0,5 x DC	> 0,5 x DC
Step over b_r	< 0,2 x DC	< 0,2 x DC	< 0,2 x DC
Correction factor (Kf n)	2	1,3	1

14

Calculation aid for copy milling

For peripheral milling or ball nosed copy milling at cutting depths of $\mathbf{a_p} \geq 0.5 \times DC$ and $\mathbf{a_e} = 0.2$ to $0.5 \times DC$ the rpm can be calculated with the following fomula:

$$n = \frac{v_C \times 1000}{DC \times \pi}$$



When ball milling the effective milling diameter $\mathbf{d_{eff.}}$ must be determined using the following formula:

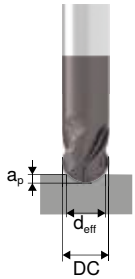
Ball nose milling cutters

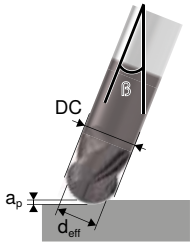
$$d_{eff.} = 2 \times \sqrt{a_p \times (DC - a_p)}$$

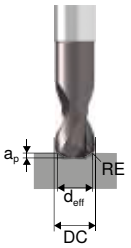
$$d_{eff.} = DC \times \sin\left(\beta \pm \arccos\left(\frac{DC - 2a_p}{DC}\right)\right)$$

Torus end milling cutters

$$d_{eff.} = (DC - 2RE) + 2 \times \sqrt{a_p \times (2RE - a_p)}$$





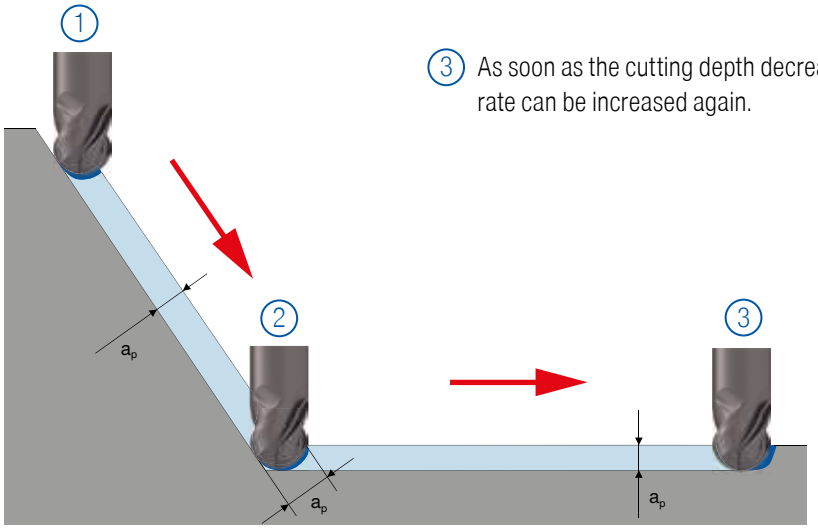


Information concerning plunge and draw milling

(1) When machining the profile flanks relatively high feed rates are possible as the cutting depth is relatively low (area highlighted in blue).

(2) A large increase in cutting depth occurs when the base of the profile is reached. Here the feed rate must be reduced as othwerwise tool breakage can occur due to vibrations, misalignment or chattering.

(3) As soon as the cutting depth decreases during the machining of the profile base, the feed rate can be increased again.



Rule:
The steeper the angle, the lower the feed rate.
The shallower the angle, the larger the feed rate.

When plunge or draw milling dies, the feed rate has to be adapted to the various milling positions. Otherwise the cutting edge can be damaged due to overload (vibrations, misalignment or chattering).

Coatings

APA72S
- AlCrN multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.35
- Maximum application temperature: 1100 °C

APB72S
- Special nanolayer coating
- HV0.05 = 3300
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 900 °C

APX72S
- Special nanolayer coating
- HV0.05 = 3800
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 1100 °C

DIA-MOND
- Diamond monolayer coating
- HV0.025 = 10,000
- Coefficient of friction (against steel) = 0.2
- Maximum application temperature: 700 °C

DLC
- Diamond-like carbon coating
- Specially for machining non-ferrous metals
- Maximum application temperature: 400 °C

DPX52S
- TiSiN multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 1000 °C

DPX62S
- TiAlN multilayer coating
- HV0.05 = 3800
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 800 °C

DPX62U
- Special TiAlN coating
- HV0.05 = 4000
- Coefficient of friction (against steel) = 0.5
- Maximum application temperature: 1150 °C

DPA72S
- Special nanolayer coating
- HV0.05 = 3200
- Coefficient of friction (against steel) = 0.5
- Maximum application temperature: 1000 °C

DPX72S
- Special multilayer coating
- HV0.05 = 3400
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 900 °C

TiAlN
- TiAlN multilayer coating
- Maximum application temperature: 900 °C

TiCN
- TiCN multilayer coating
- Maximum application temperature: 450 °C

Ti28
- Ti multilayer coating
- HV0.05 = 2800
- Coefficient of friction (against steel) = 0.1
- Maximum application temperature: 500 °C

Ti40
- Ti monolayer coating
- HV0.05 = 4000
- Maximum application temperature: 900 °C

Ti400
- Ti multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 400 °C

Ti1000
- Ti monolayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.3
- Maximum application temperature: 800 °C

Ti1001
- Ti monolayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 800 °C

Ti1002
- Ti monolayer coating
- HV0.05 = 3300
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 900 °C

Ti1005
- Ti multilayer coating
- HV0.05 = 2800
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 600 °C

Ti1010
- Ti multilayer coating
- HV0.05 = 3600
- Coefficient of friction (against steel) = 0.2
- Maximum application temperature: 800 °C

Ti1050
- Ti multilayer coating
- HV0.005 = 3300
- Coefficient of friction (against steel) = 0.3-0.5
- Maximum application temperature: 900 °C

Ti1100
- Ti multilayer coating
- HV0.05 = 3200
- Coefficient of friction (against steel) = 0.35
- Maximum application temperature: 1100 °C

Ti1200
- Ti nanolayer coating
- Maximum application temperature: 1100–1200 °C

Ti1500
- Ti nanolayer coating
- HV0.05 = 3400
- Coefficient of friction (against steel) = 0.7
- Maximum application temperature: 900 °C

Ti2000
- Ti multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.5
- Maximum application temperature: 900 °C

New products for machining technicians

NEW DHFC



Double-sided high-feed milling system

NEW HPC-04



PCD and CBN milling system Ø 20–40 mm

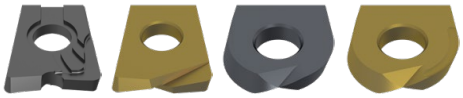
NEW CTCS245



New Dragonskin high-performance coating for the ISO S application range

---

NEW K2000 system grade update



New high-performance grades for mold & die production

NEW MaxiMill 270-19 addition



New system size with a 19 mm indexable insert for heavy machining

---

NEW MaxiMill 273 addition



Adjustable milling cutter with length adjustment

NEW MaxiMill 491 addition



Indexable insert range expansion to include the sizes SNHU 09.. RE 1.2 and RE 1.6 as well as additional grades for the ISO M and S application range



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder	3–14
Product programme	15–136
Cutting data appoximate values	137–139
Technical Information	
Application parameters – Face milling	140–149
Application parameters – End milling	150–168
Application parameters – Form milling	170–185
Application parameters – Other milling systems	186–189
Correction of the tooth load f_z	157
Average chip thickness	169
Power Screw	190
Abbreviations & dimensions	191
Engagement conditions	192
Cutting Edge Wear Conditions	193
ISO Designation System	194+195
Chip Breakers Overview	196–208
Grade description	209+210

CERATIZIT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

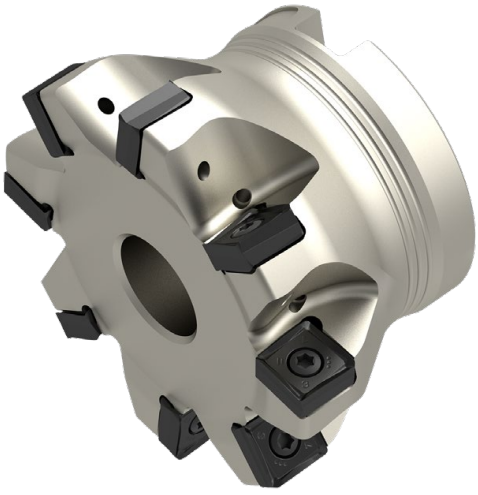
Symbol explanation



central internal coolant



lateral internal coolant



ZNF = Number of teeth

● = **Main Application**

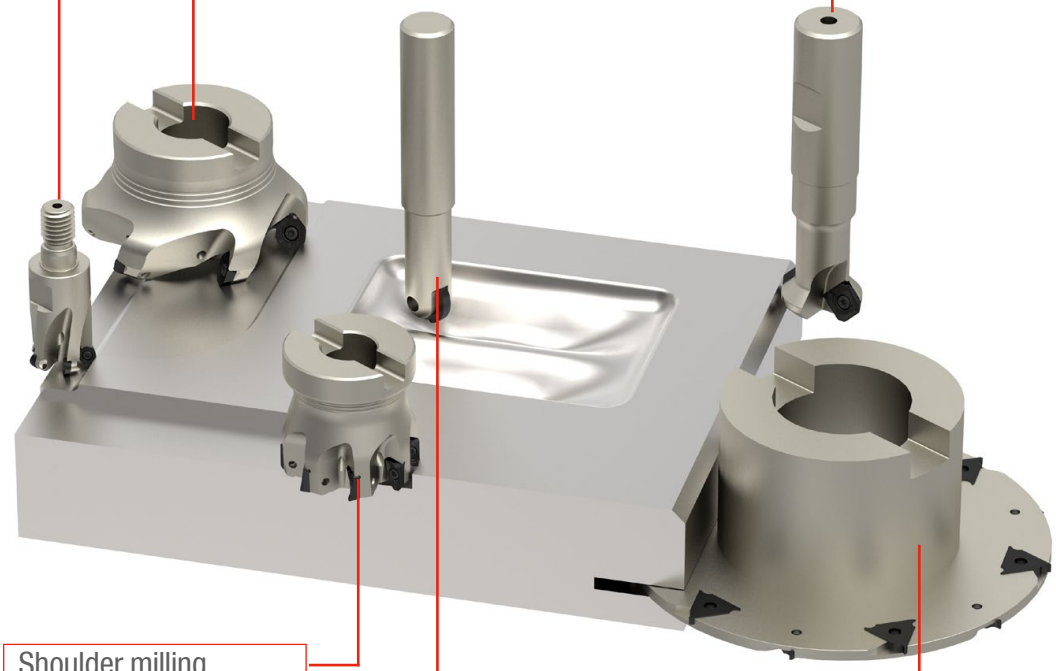
○ = Extended application

Toolfinder – Application Selection Guide

Form milling
→ System Selection:
8+9

Face milling
→ System Selection:
4+5

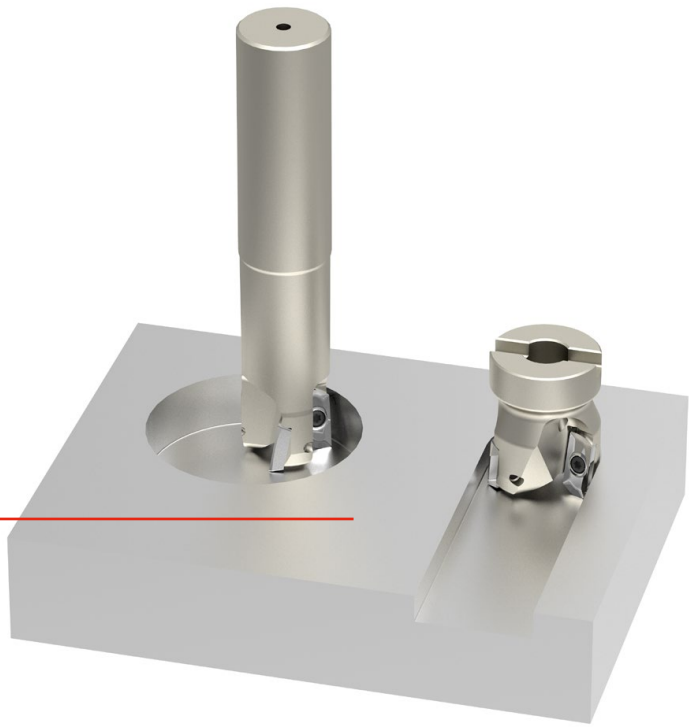
Chamfer/Angle milling cutters
→ System Selection:
10



Shoulder milling
→ System Selection:
6+7

Slot milling and saws
→ System Selection:
10

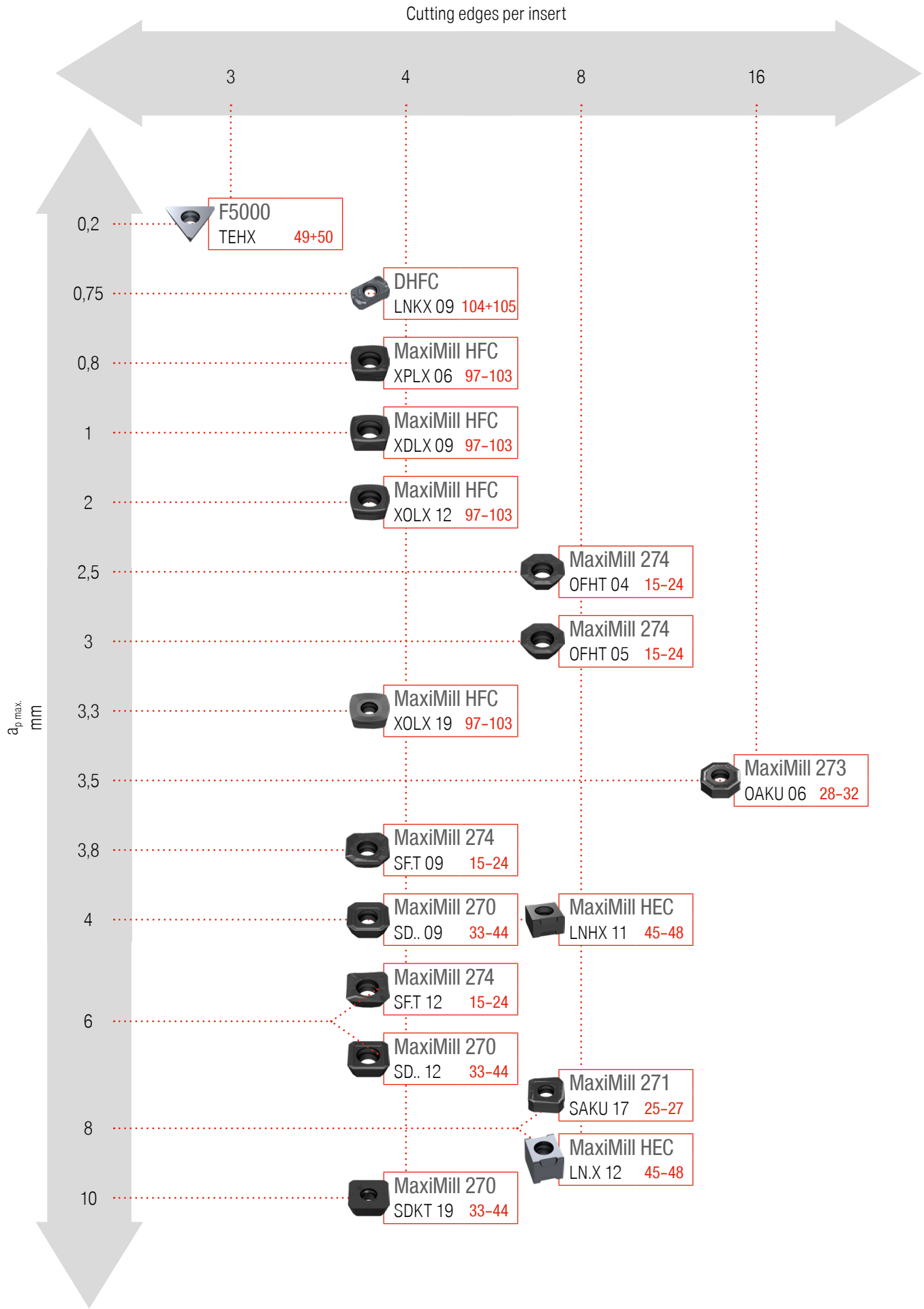
Form milling
→ System Selection:
8+9



HSC-/HPC-milling
→ System Selection:
6+7

15

Toolfinder – Face Milling Cutters



Overview – Face Milling Cutters

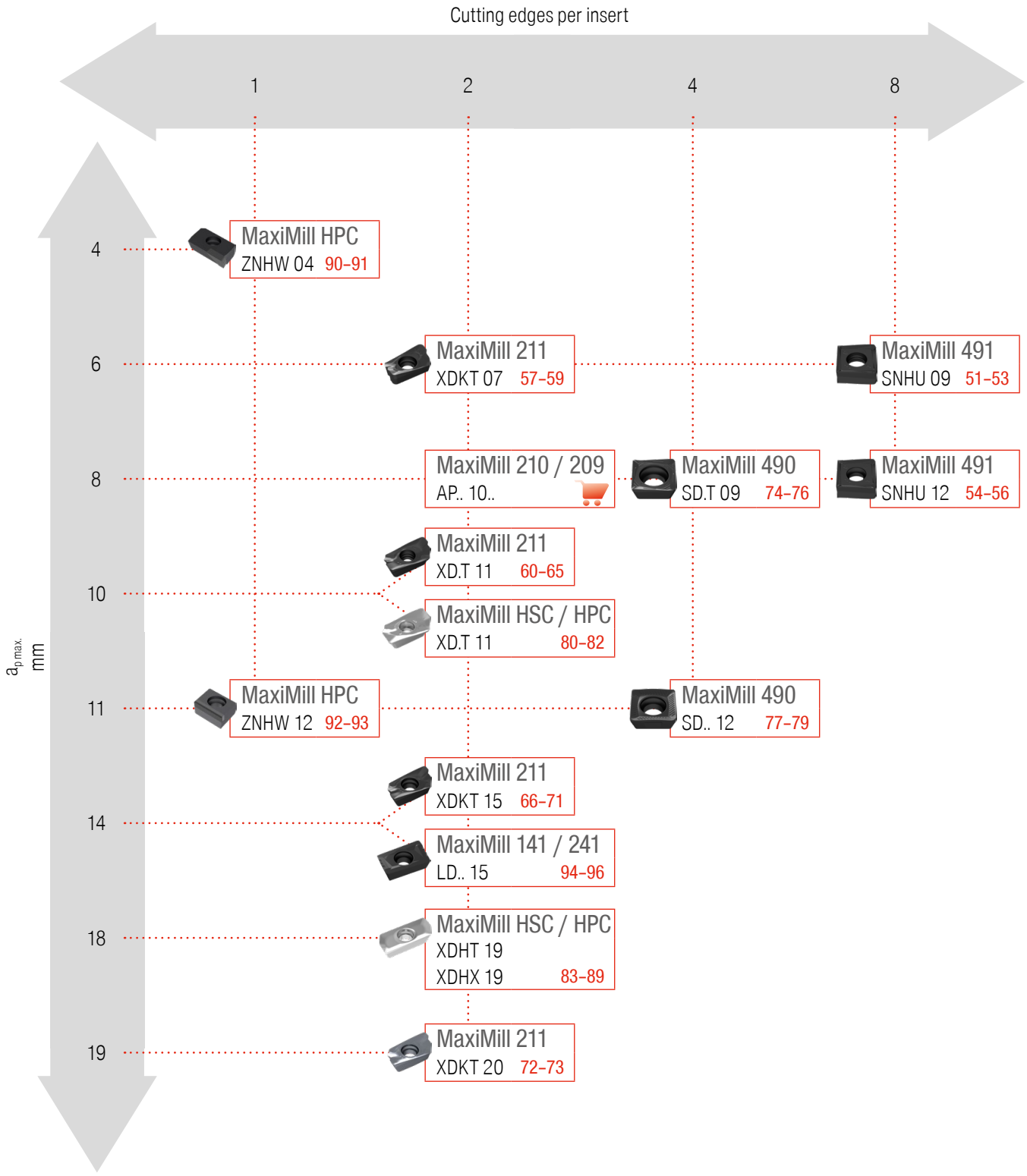
System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm			Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill 274	OFH. 04.. / 05.. | SF.T 09.. / 12..	8 / 4	2,5–6	Ø 20–32	Ø 20–32	Ø 32–160	●	●	●	●	●		15–24
MaxiMill 271	SAKU 1706..	8	8,4			Ø 50–250	●	●	●		●		25–27
MaxiMill 273	OAKU 0605..	16	3,5		Ø 32–40	Ø 40–250	●	●	●		●		28–32
MaxiMill 270	SD.. 0903.. / 1204.. / 19..	4	4–10	Ø 16–32	Ø 6–32	Ø 32–315	●	●	●	●	●		33–44
MaxiMill HEC	LNHX 1106.. | LN.X 1210..	8	4–8			Ø 50–160	●	○	●				45–48
F 5000	TEHX 16T3..	3	0,2			Ø 42–100	●	○	●	○		●	49–50
MaxiMill HFC	X..X 06.. / 09.. / 12.. / 19..	4	0,8–3,3	Ø 16–42	Ø 16–35	Ø 32–160	●	●	●		●		97–103
DHFC	LNKX 09..	4	0,75	Ø 16–42	Ø 16–20		●	●	●		●	●	104–105

Additional diameters are available upon request

Indexable inserts for systems that are no longer listed here can be found in our online shop at cuttingtools.ceratizit.com

15

Toolfinder – shoulder milling



Overview – Shoulder Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm				Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill 491	SNHU 09T3.. / 1204..	8	6–8	Ø 25–32	Ø 25–32	Ø 40–160		●	●	●	●	●		51–56
MaxiMill 211	XD.T 0703.. / 11T3.. / 1505.. / 2007..	2	6–19	Ø 16–40	Ø 10–40	Ø 32–160		●	●	●	●	●	○	57–73
MaxiMill 211 K	XD.T 11T3.. / 1505.. / 2007..	2	27–75,5		Ø 25–50	Ø 40–50		●	●	●	●	●		57–73
MaxiMill 490	SD.. 09T3.. / 1205..	4	8–11	Ø 25–40	Ø 25–32	Ø 40–160		●	●	●	●	●		74–79
MaxiMill 490 K	SD.. 09T3..	4	41			Ø 40–63		●	●	●	●	●		74–79
MaxiMill HSC / HPC	XD.. 11T3.. / 1904..	2	10–18	Ø 16–40	Ø 16–32	Ø 40–125	Ø 25–50			○	●			80–89
MaxiMill HPC	ZNHW 04T3.. / 1205..	1	4–11	Ø 20–40	Ø 20–40	Ø 40–315	Ø 40–160			●	●		○	90–93
MaxiMill 141 / 241	LD.. 1504..	2	14	Ø 25–40	Ø 20–32	Ø 40–100		●	●	●	●			94–96
MaxiMill 210 / 209	AP.. 1003..	2	8	Ø 16,0–31,7	Ø 9,7–32	Ø 40–125		●	●	●	●	●	●	

Additional diameters are available upon request

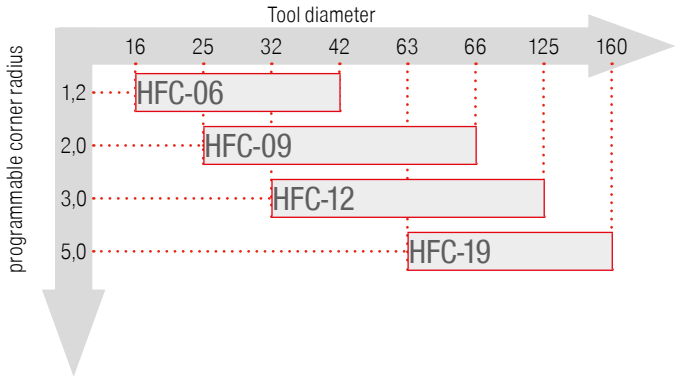
Indexable inserts for systems that are no longer listed here can be found in our online shop at cuttingtools.ceratizit.com

This article can be found in our online shop at cuttingtools.ceratizit.com

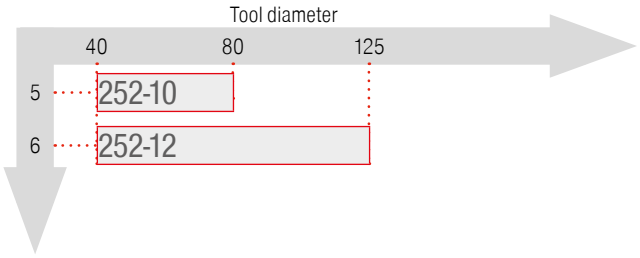
15

Toolfinder – form milling

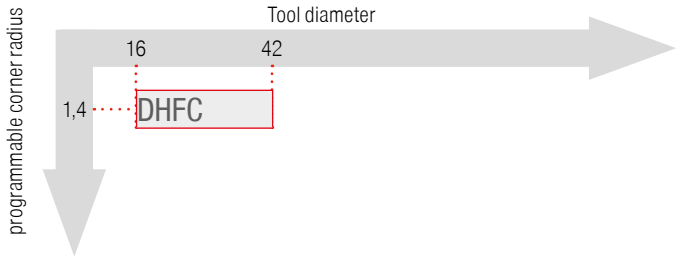
MaxiMill HFC 97–103



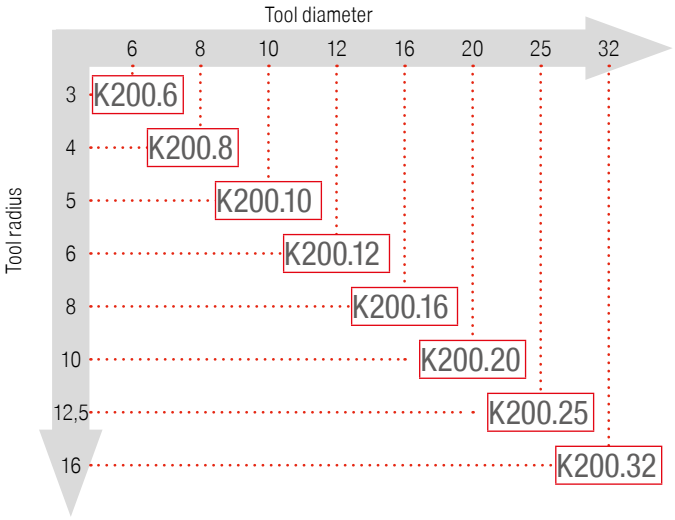
MaxiMill 252 119+120



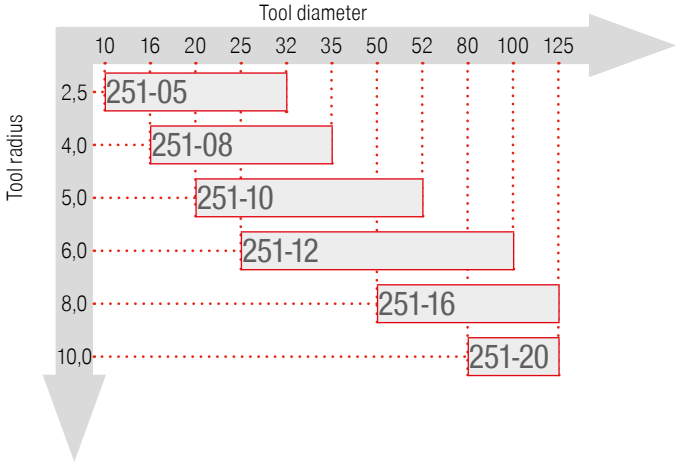
DHFC 104+105



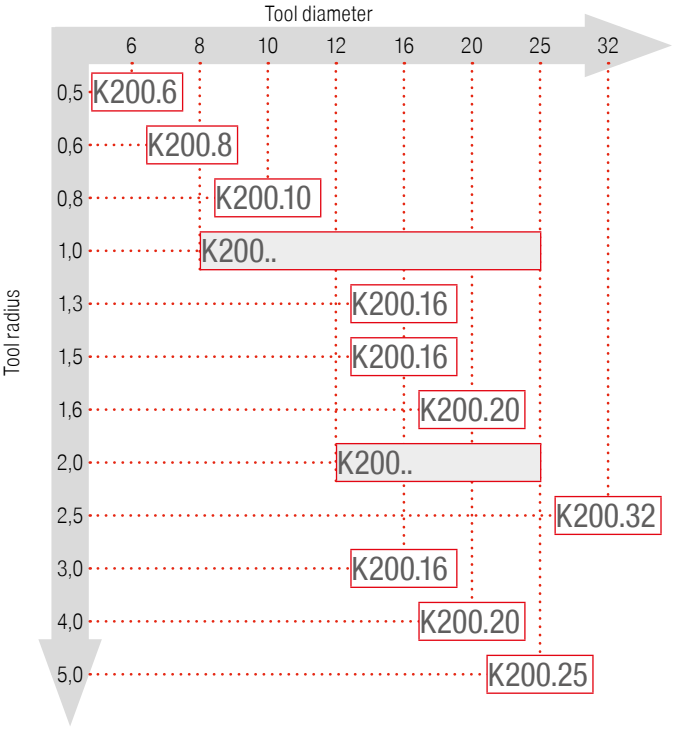
K200. Ball Nosed 121–125



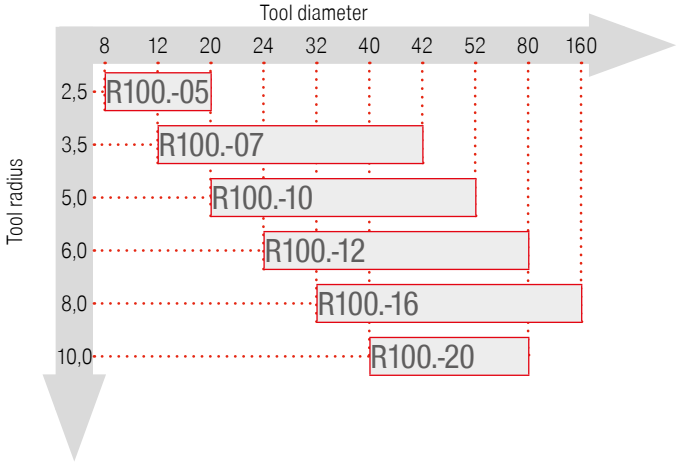
MaxiMill 251 106–113



K200. Torus 126–129



R100. 114–118



Application range

Tool diameter

Overview – form milling

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm			Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill HFC	X.LX 06.. / 09.. / 12.. / 19..	4	0,8–3,3	Ø 16–42	Ø 16–35	Ø 32–160	●	●	●		●		97–103
DHFC	LNKX 09..	4	0,75	Ø 16–42	Ø 16–20		●	●	●		○	○	104+105
MaxiMill 251	R..X 05.. / 08.. / 10.. / 12.. / 16.. / 20..	8	2,5–10	Ø 10–42	Ø 10–32	Ø 40–125	●	●	●	●	●		106–113
R100.	RD.X 05.. / 07.. / 10.. / 12.. / 16.. / 20..	8	5	Ø 12–42	Ø 8–20	Ø 42–160	●	●	●	●	○	●	114–118
MaxiMill 252	RNHU 10.. / 12..	8	3			Ø 40–125	●	●	○		●		119+120
K200. Ball Nosed	RO.X .... / XOHX	1	0,4–8	Ø 8–32	Ø 6–32		●	●	●	●	●	●	121–125
K200. Torus	XO.X	1	0,5–8	Ø 8–32	Ø 8–32		●	●	●	●	●	●	126–129

Additional diameters are available upon request

Indexable inserts for systems that are no longer listed here can be found in our online shop at cuttingtools.ceratizit.com

15

Overview – Chamfer / Angle Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill 272	SD.. 0903..	4	4	Ø 6–25		●	●	○	●	●		35+36
4500	SD.. 09T3..	4	4	Ø 16–25		●	●	●	●	●		75+76
4500	SD.. 1205..	4	4	Ø 20–32	Ø 20–32	●	●	●	●	●		78+79
MaxiMill 242	LD.. 1504..	2			Ø 50–92	○	●			●		95+96

Additional diameters are available upon request.

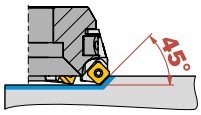
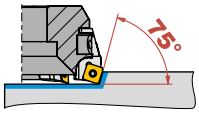
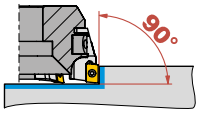
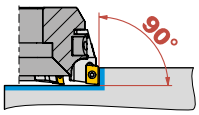
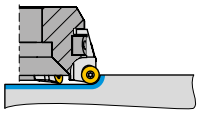
Overview – Slot / Multipurpose Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
FM	FM..	1	49	Ø 100–160		●	●	●	●			130+131
TX	TX.. R/L	3	64	Ø 80–160	Ø 100–200	●	●	●	●	●		132–134

Additional diameters are available upon request.

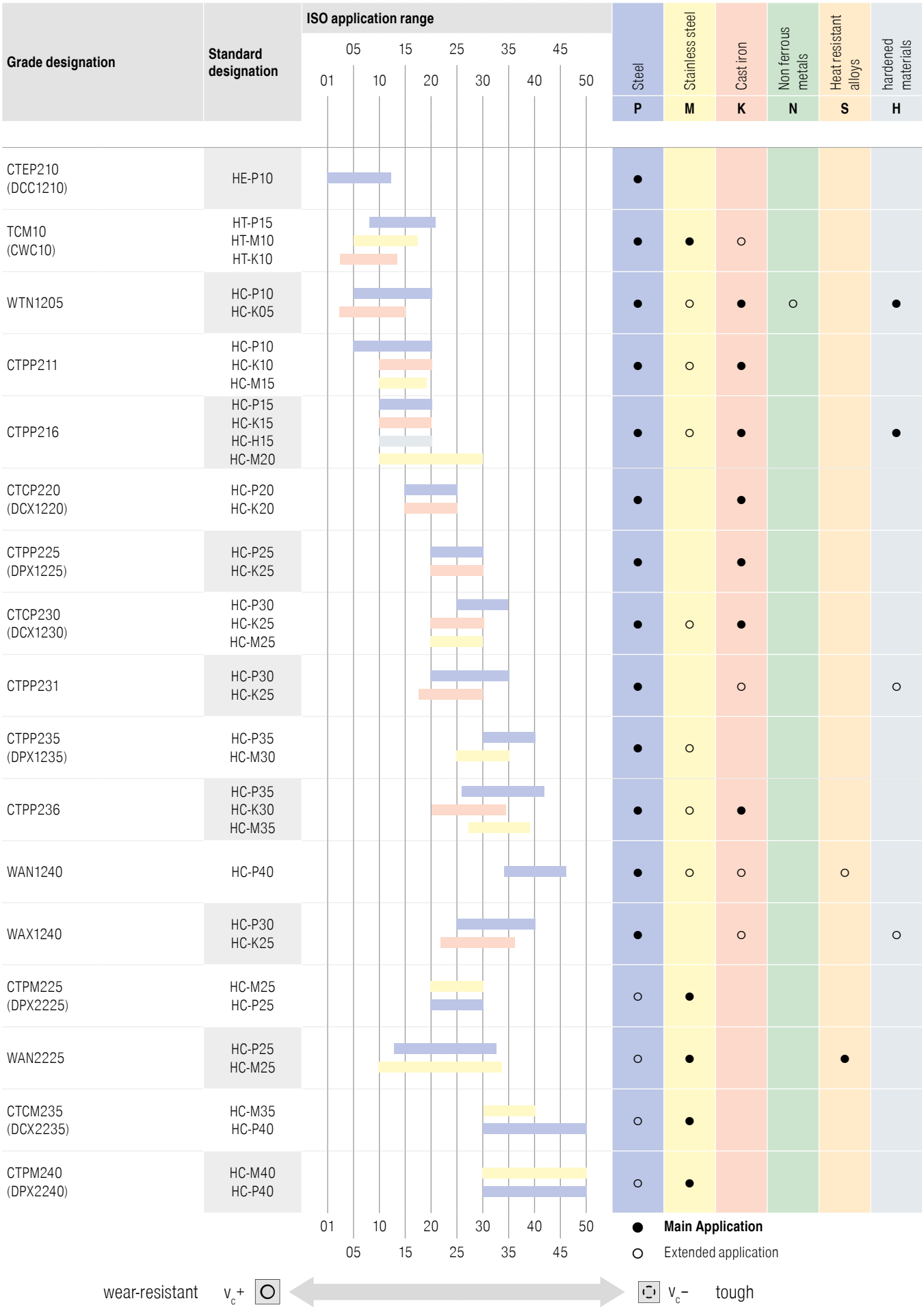
Overview – Combi Milling Cutters

System	Ø-range mm	Pages
		
MaxiMill 260	80–400	135

													Pages
	Cartridge no.	041	031			029		032		057			
													136
		SD.. 0903..		SD.. 1204.. XD.. 1204..		SE.. 1204..		SD.. 1504..		OA.. 0605.. XA.. 0605..			
	Cartridge no.	018											
													136
			SP.. 1204..										
	Cartridge no.	042		039		051		025					
													136
			AP.. 1003..		SD.. 1205..		LD.. 1504..		TP.. 2204..				
	Cartridge no.	055		054		056							
													136
			SD.. 09T3		XD.. 11T3		XD.. 1505						
	Cartridge no.	052		053									
													136
			RP.X 1204..		RP.X 1604..								

15

Toolfinder – Grade Selection



Toolfinder – Grade Selection

Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	hardened materials H
CTPM241	HC-M40 HC-P40		○	●			●	
CTPM245 (DPX2245)	HC-M45 HC-P50		○	●				
CTN3105 (CTS3105)	CN-K05				●			
CTL3215 (CWB3215)	BC-K10 BC-H10				●			
CTCK215 (DCX3215)	HC-K15				●			
CTPK220 (DPX3220)	HC-K20				●			
CTPK221	HC-K10 HC-M15			○	●		○	○
CTPK226	HC-K15 HC-H15 HC-P15		○		●			●
CTPK231	HC-P30 HC-K30		●		●			
CTD4205 (CWD4205)	DP-N05					●		
AMZ (AMZ)	HC-N10 HC-P10 HC-K10		○		○	●		
WUN4210	HT-N10 HT-M15			○		●		
CTCN211	HC-N10					●		
H216T	HW-N15 HW-K15 HW-S15				●	●	○	
CTC5240 (HCF5240)	HC-S35 HC-M35			●			●	
CTCS245	HC-S40						●	
CTP6215 (CCN6215)	HC-K15 HC-H15		○		●			●

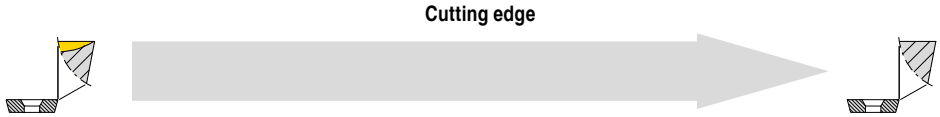
ISO application range: 01 05 10 15 20 25 30 35 40 45 50

● Main Application
○ Extended application

wear-resistant v_c+ ⟷ v_c– tough

15

Toolfinder – Chip Former Type



			sharp ●		medium ● ●		stable ● ● ●	
			10	20	30	40	50	60
increasing wedge angle	fine	F	**-F10**	**-F20**		**-F40**	**-F50**	**-33**
	medium	M			**-M31** **-M30** **-M32**		**-M50** **-31**	**-29**
	rough	R			**-R30**		**-R50**	**-R60**

A detailed overview of chip breakers can be found on → **Page 196–208**

Chip breaker code

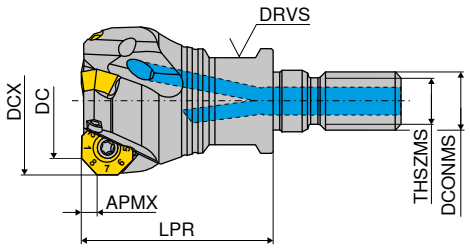
			Cutting edge		
			sharp 10–20	medium 30–40	stable 50–60
Application type	light	F	●	● ●	● ● ●
	universal	M	●	● ●	● ● ●
	difficult	R	●	● ●	● ● ●

Example: Chip breaker -M50



MaxiMill – Screw in cutter G 274-04/-09



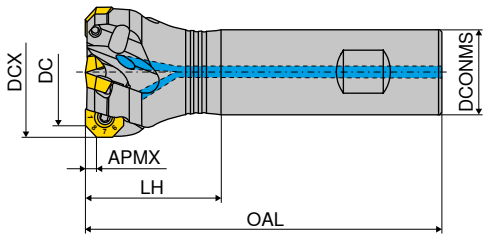




Designation	DC	DCX	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 742 ...	
	mm	mm		mm	mm		mm	mm	Nm		EUR	
G274.20.R.03-09	20	25,5	3	3,8	35	M12	12,5	17	1,2	OF.. 0403 / SF.. 0903	268,10	**020**
G274.25.R.04-09	25	30,6	4	3,8	35	M12	12,5	17	1,2	OF.. 0403 / SF.. 0903	305,30	**025**
G274.32.R.05-09	32	37,6	5	3,8	35	M16	17,0	24	1,2	OF.. 0403 / SF.. 0903	342,70	**032**

MaxiMill – End milling cutter C 274-04/-09





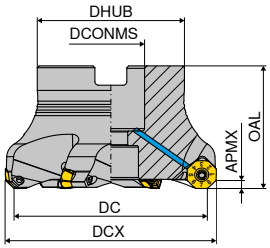


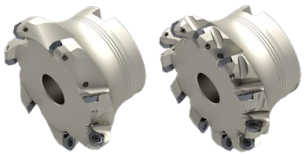


Designation	DC	DCX	ZNF	APMX	OAL	LH	DCONMS	torque moment	Insert	A 2B/40 Article no. 50 743 ...		B 2B/40 Article no. 50 743 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR		EUR	
C274.20.R.03-09-A/B20-25	20	25,5	3	3,8	77	25	20	1,2	OF.. 0403 / SF.. 0903	268,10	**020**	268,10	**120**
C274.25.R.04-09-A/B20-32	25	30,6	4	3,8	84	32	20	1,2	OF.. 0403 / SF.. 0903	305,30	**025**	305,30	**125**
C274.32.R.05-09-A/B25-40	32	37,6	5	3,8	98	40	25	1,2	OF.. 0403 / SF.. 0903	342,70	**032**	342,70	**132**

MaxiMill – Shell mill A 274-04/-09







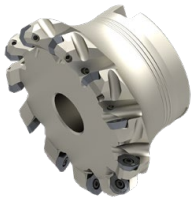
Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	torque moment	Insert	2B/40 Article no. 50 744 ... EUR		2B/40 Article no. 50 744 ... EUR	
	mm	mm		mm	mm	mm	mm	Nm					
A274.32.R.05-09	32	37,7	5	3,8	40	38	16	1,2	OF.. 0403 / SF.. 0903			342,70	**032**
A274.40.R.04-09	40	45,7	4	3,8	40	38	16	1,2	OF.. 0403 / SF.. 0903	342,70	**040**		
A274.40.R.06-09	40	45,7	6	3,8	40	38	16	1,2	OF.. 0403 / SF.. 0903			379,90	**140**
A274.50.R.05-09	50	55,7	5	3,8	40	48	22	1,2	OF.. 0403 / SF.. 0903	398,60	**050**		
A274.50.R.07-09	50	55,7	7	3,8	40	48	22	1,2	OF.. 0403 / SF.. 0903			417,40	**150**
A274.63.R.06-09	63	68,7	6	3,8	40	48	22	1,2	OF.. 0403 / SF.. 0903	454,70	**063**		
A274.63.R.09-09	63	68,7	9	3,8	40	48	22	1,2	OF.. 0403 / SF.. 0903			510,70	**163**
A274.80.R.07-09	80	85,7	7	3,8	50	58	27	1,2	OF.. 0403 / SF.. 0903	510,70	**080**		
A274.80.R.11-09	80	85,7	11	3,8	50	58	27	1,2	OF.. 0403 / SF.. 0903			585,30	**180**
A274.100.R.09-09	100	105,7	9	3,8	50	78	32	1,2	OF.. 0403 / SF.. 0903	629,80	**100**		
A274.100.R.13-09	100	105,7	13	3,8	50	78	32	1,2	OF.. 0403 / SF.. 0903			704,50	**200**
A274.125.R.12-09	125	130,7	12	3,8	63	88	40	1,2	OF.. 0403 / SF.. 0903	767,40	**125**		

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Power Screw Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
20 - 25	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**133**	118,90	**191**
32 - 40	4,76	**043**	3,91	**040**	10,20	**125**	12,48	**151**	4,38	**303**	4,09	**133**	118,90	**191**
50 - 125	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**133**	118,90	**191**

Two insert types – ONE Cutter



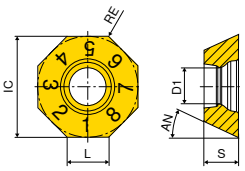




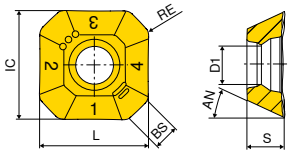


OFHT / OFHW / SFHT / SFKT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
OFH. 0403..	9,52	3,35	3,94	-	3,18	25
SF.T 0903..	9,80	3,35	9,00	2,25	3,50	25



OF..

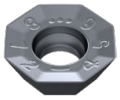
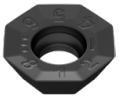
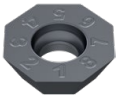


SF.T

OFHT

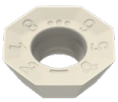
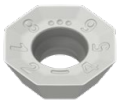
	-F50 CTCP220	-F50 CTPP225	-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
	-F50 DCX1220	-F50 DPX1225	-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	OFHT	OFHT	OFHT	OFHT	OFHT	OFHT
	1B/61	1B/61	1B/61	1B/61	1B/61	1B/61
ISO RE	**Article no.** 51 002 ...	**Article no.** 51 002 ...	**Article no.** 51 002 ...	**Article no.** 51 003 ...	**Article no.** 51 002 ...	**Article no.** 51 003 ...
mm	EUR	EUR	EUR	EUR	EUR	EUR
040305SN 0,5	15,76 **255**	15,76 **055**	15,76 **005**	15,76 **005**	15,76 **105**	15,76 **105**
Steel	●	●	●	●	●	●
Stainless steel			○	○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

OFHT / OFHW

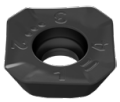
	-F50 CTPM225	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245	CTPM245
	-F50 DPX2225	-F50 DCX2235	-F50 DPX2240	-M50 DPX2240	-F50 DPX2245	DPX2245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	OFHT	OFHT	OFHT	OFHT	OFHT	OFHW
	1B/61	1B/61	1B/61	1B/61	1H/17	1H/17
ISO RE	**Article no.** 51 002 ...	**Article no.** 51 002 ...	**Article no.** 51 002 ...	**Article no.** 51 003 ...	**Article no.** 51 002 ...	**Article no.** 51 105 ...
mm	EUR	EUR	EUR	EUR	EUR	EUR
040302EN 0,2						17,37 **452**
040305SN 0,5	15,76 **205**	15,76 **305**	15,76 **405**	15,76 **405**	17,37 **455**	
Steel	○	○	○	○	●	●
Stainless steel	●	●	●	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

15

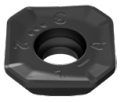
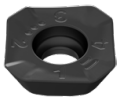
OFHT / OFHW

		-M50 CTCK215		-F10 CTWN215		-F50 CTC5240		CTC5240		-F50 CTCS245	
		-M50 DCX3215		-F10 CWK4615				HCF5240			
		DRAGONSKIN				DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
											
		OFHT		OFHT		OFHT		OFHW		OFHT	
		1B/61		1B/61		NEW 1H/D4		1H/D4		NEW 1H/D4	
ISO	RE	Article no. 51 003 ...		Article no. 50 459 ...		Article no. 51 002 ...		Article no. 50 457 ...		Article no. 51 002 ...	
	mm	EUR		EUR		EUR		EUR		EUR	
040302EN	0,2							17,37	504		
040305FN	0,5			16,71	505						
040305SN	0,5	15,76	505			17,37	15500			17,37	555
Steel		○									
Stainless steel											
Cast iron		●		○							
Non ferrous metals				●							
Heat resistant alloys						●		●		●	
hardened materials											

SFHT / SFKT

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SFHT	SFKT	SFHT	SFKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...
	mm	EUR	EUR	EUR	EUR
0903AFSR	1,0	15,76 270	11,61 270	15,76 070	11,61 070
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

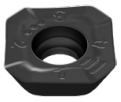
SFHT / SFKT

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SFHT	SFKT	SFHT	SFKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...
	mm	EUR	EUR	EUR	EUR
0903AFSR	1,0	15,76 020	11,61 020	15,76 120	11,61 120
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SFHT / SFKT

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-F50 DPX2240		-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		SFHT	SFKT	SFHT	SFHT	SFKT	SFHT
		1B/61	1B/61	1B/61	1B/61	NEW 1B/61	1H/17
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR
0903AFSR	1,0	15,76 220	11,61 220	15,76 320	15,76 420	11,61 42000	19,60 470
Steel		○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

SFKT / SFHT

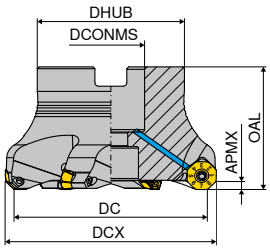
		-R50 CTCK215	-R50 CTPK220	-F10 CTWN215	-F40 CTC5240
		-R50 DCX3215	-R50 DPX3220	-F10 CWK4615	-F40 HCF5240
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
					
		SFKT	SFKT	SFHT	SFHT
		1B/61	1B/61	1B/61	1H/D4
ISO	RE	Article no. 51 065 ...	Article no. 51 065 ...	Article no. 50 514 ...	Article no. 50 514 ...
	mm	EUR	EUR	EUR	EUR
0903AFFR	1,0			18,90 505	
0903AFSR	1,0	11,61 520	11,61 620		19,60 504
Steel		○	○		
Stainless steel					
Cast iron		●	●	○	
Non ferrous metals				●	
Heat resistant alloys					●
hardened materials					

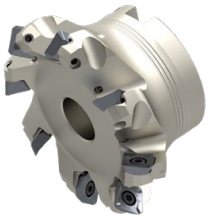
Milling guide

Machining strategy	→ 140	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 140
Starting Parameter	→ 141		

MaxiMill – Shell mill A 274-05/-12







Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	torque moment	Insert	2B/40 Article no. 50 772 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR	
A274.40.R.03-12	40	48,0	3	6	40	38	16	3,2	OFHT 0504 / SFKT 1204	258,00	**24000**
A274.40.R.04-12	40	48,0	4	6	40	38	16	3,2	OFHT 0504 / SFKT 1204	338,50	**04000**
A274.50.R.05-12	50	58,0	5	6	40	43	22	3,2	OFHT 0504 / SFKT 1204	429,90	**050**
A274.50.R.04-12	50	58,1	4	6	40	43	22	3,2	OFHT 0504 / SFKT 1204	343,90	**25000**
A274.63.R.06-12	63	71,0	6	6	40	48	22	3,2	OFHT 0504 / SFKT 1204	515,90	**063**
A274.63.R.05-12	63	71,1	5	6	40	48	22	3,2	OFHT 0504 / SFKT 1204	440,40	**26300**
A274.80.R.06-12	80	88,0	6	6	50	58	27	3,2	OFHT 0504 / SFKT 1204	537,30	**28000**
A274.80.R.08-12	80	88,0	8	6	50	58	27	3,2	OFHT 0504 / SFKT 1204	687,90	**080**
A274.100.R.10-12	100	107,9	10	6	50	78	32	3,2	OFHT 0504 / SFKT 1204	849,00	**100**
A274.100.R.08-12	100	108,0	8	6	50	78	32	3,2	OFHT 0504 / SFKT 1204	709,40	**30000**
A274.125.R.12-12	125	132,9	12	6	63	88	40	3,2	OFHT 0504 / SFKT 1204	1.037,00	**125**
A274.125.R.09-12	125	133,0	9	6	63	88	40	3,2	OFHT 0504 / SFKT 1204	889,20	**32500**
A274.160.R.11-12	160	133,0	11	6	63	88	40	3,2	OFHT 0504 / SFKT 1204	1.081,00	**36000** [1]
A274.160.R.14-12	160	167,9	14	6	63	98	40	3,2	OFHT 0504 / SFKT 1204	1.376,00	**16000** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28  Molykote Article no. 70 950 ...		2A/28  Clamping screw Article no. 70 950 ...		Y7  Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR	
40 - 160	5,26	**054**	11,89	**128**	4,38	**303**	4,61	**340**	131,90	**193**

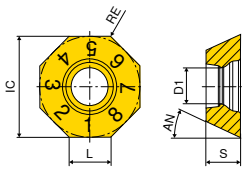
Two insert types – ONE Cutter



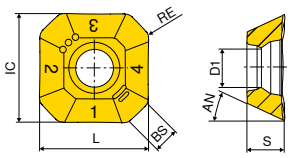


OFHT / SFHT / SFKT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
OFHT 0504..	12,7	4,8	4,5	-	4,76	25
SF.T 1204..	12,7	4,8	12,7	1,42	4,76	25



OF..

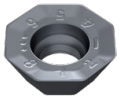
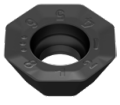
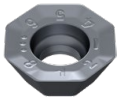
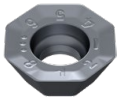


SF.T

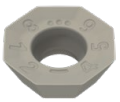
OFHT

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230		-F50 DPX1235	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		OFHT	OFHT	OFHT	OFHT
		1B/61	NEW 1B/61	1B/61	NEW 1B/61
ISO	RE	**Article no. 51 002 ...**	**Article no. 51 003 ...**	**Article no. 51 002 ...**	**Article no. 51 003 ...**
	mm	EUR	EUR	EUR	EUR
050410SN	1,0	17,33 **010**	17,33 **01000**	17,33 **110**	17,33 **11000**
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

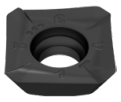
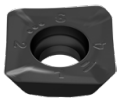
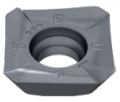
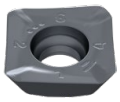
OFHT

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-F50 DPX2240		-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		OFHT	OFHT	OFHT	OFHT	OFHT	OFHT
		1B/61	1B/61	1B/61	1B/61	NEW 1B/61	1H/17
ISO	RE	**Article no. 51 002 ...**	**Article no. 51 003 ...**	**Article no. 51 002 ...**	**Article no. 51 002 ...**	**Article no. 51 003 ...**	**Article no. 51 002 ...**
	mm	EUR	EUR	EUR	EUR	EUR	EUR
050410SN	1,0	17,33 **210**	17,33 **210**	17,33 **310**	17,33 **410**	17,33 **41000**	19,10 **460**
Steel		○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

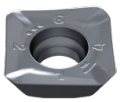
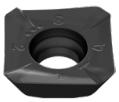
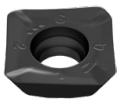
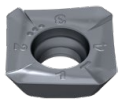
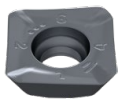
OFHT

		-F10 CTWN215	-F50 CTC5240
			DRAGONSKIN
			
		OFHT	OFHT
		NEW 1B/61	NEW 1H/D4
ISO	RE	Article no. 51 122 ...	Article no. 51 002 ...
	mm	EUR	EUR
050410FN	1,0	20,79 36000	
050410SN	1,0		19,10 16000
Steel			
Stainless steel			
Cast iron		○	
Non ferrous metals		●	
Heat resistant alloys			●
hardened materials			

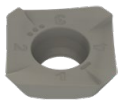
SFHT / SFKT

		-F50 CTCP230	-M50 CTCP230 -M50 DCX1230	-F50 CTPP235	-M50 CTPP235 -M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SFHT	SFKT	SFHT	SFKT
		NEW 1B/61	1B/61	NEW 1B/61	1B/61
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...
	mm	EUR	EUR	EUR	EUR
1204AFSR	1,0	17,33 02500	12,77 025	17,33 12500	12,77 125
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SFHT / SFKT

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-M50 DCX2235		-M50 DPX2240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		SFHT	SFKT	SFHT	SFKT	SFHT	SFKT	SFHT
		1B/61	1B/61	1B/61	1B/61	NEW 1B/61	1B/61	NEW 1H/17
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
1204AFSR	1,0	17,33 225	12,77 225	17,33 325	12,77 325	17,33 42500	12,77 425	21,15 47500
Steel		○	○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●	●
Cast iron								
Non ferrous metals								
Heat resistant alloys								
hardened materials								

SFHT

		-F10 CTWN215	-F40 CTC5240
			DRAGONSKIN
			
		SFHT	SFHT
		NEW 1B/61	NEW 1H/D4
ISO	RE	Article no. 51 123 ...	Article no. 50 514 ...
	mm	EUR	EUR
1204AFER	1,0		21,58 50900
1204AFFR	1,0	20,79 37000	
Steel			
Stainless steel			
Cast iron		○	
Non ferrous metals		●	
Heat resistant alloys			●
hardened materials			

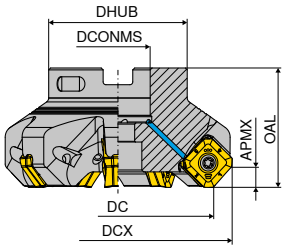
Milling guide

Machining strategy	→ 142	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 142
Starting Parameter	→ 143		

MaxiMill – A 271 Face mill

▲ 8 cutting edges per insert







Designation	DC	DCX	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	2B/40 Article no. 50 767 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR	
A271.50.R.04-17	50	66,1	4	8,4	40	22	43	5	SAKU 1706	397,70	**050**
A271.63.R.06-17	63	79,1	6	8,4	40	22	48	5	SAKU 1706	558,90	**063**
A271.80.R.07-17	80	96,1	7	8,4	50	27	58	5	SAKU 1706	639,50	**080**
A271.100.R.08-17	100	116,1	8	8,4	50	32	78	5	SAKU 1706	736,30	**100**
A271.125.R.10-17	125	141,1	10	8,4	63	40	88	5	SAKU 1706	849,00	**125**
A271.160.R.12-17	160	176,1	12	8,4	63	40	104	5	SAKU 1706	999,60	**16000** [1]
A271.200.R.13-17	200	216,1	13	8,4	63	60	134	5	SAKU 1706	1.236,00	**20000** [2]
A271.250.R.15-17	250	266,1	15	8,4	63	60	134	5	SAKU 1706	1.494,00	**25000** [2]

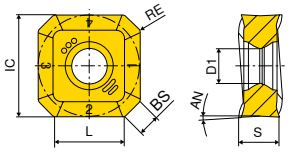
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
50 - 250	4,76	**037**	9,95	**114**	4,38	**303**	4,09	**302**	131,90	**193**

15

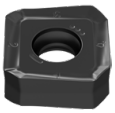
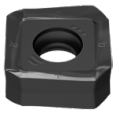
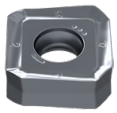
SAKU

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
SAKU 1706..	17	5,8	11,85	3,7	6,35	3

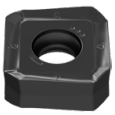
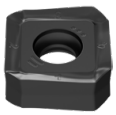
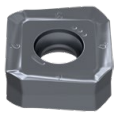
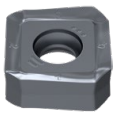


SAKU

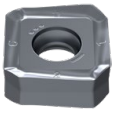
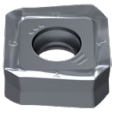
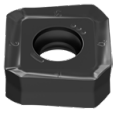
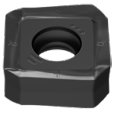
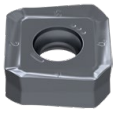
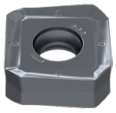
SAKU

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SAKU 1B/61	SAKU 1B/61	SAKU 1B/61	SAKU 1B/61
ISO	RE	**Article no. 51 004 ...**	**Article no. 51 005 ...**	**Article no. 51 004 ...**	**Article no. 51 005 ...**
	mm	EUR	EUR	EUR	EUR
1706ABSR	0,8	29,13 **270**	29,13 **270**	29,13 **070**	29,13 **070**
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

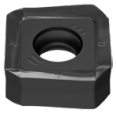
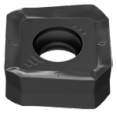
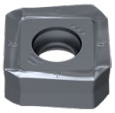
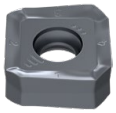
SAKU

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SAKU 1B/61	SAKU 1B/61	SAKU 1B/61	SAKU 1B/61
ISO	RE	**Article no. 51 004 ...**	**Article no. 51 005 ...**	**Article no. 51 004 ...**	**Article no. 51 005 ...**
	mm	EUR	EUR	EUR	EUR
1706ABSR	0,8	29,13 **020**	29,13 **020**	29,13 **120**	29,13 **120**
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SAKU

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-M50 DCX2235	-F50 DPX2240	-M50 DPX2240	-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		SAKU	SAKU	SAKU	SAKU	SAKU	SAKU	SAKU
		1B/61	1B/61	1B/61	1B/61	1B/61	1B/61	1H/17
ISO	RE	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
1706ABSR	0,8	29,13 220	29,13 220	29,13 320	29,13 320	29,13 420	29,13 420	35,84 470
Steel		○	○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●	●
Cast iron								
Non ferrous metals								
Heat resistant alloys								
hardened materials								

SAKU

		-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F50 CTC5240	-F50 CTCS245
		-M50 DCX3215	-R50 DCX3215	-M50 DPX3220	-R50 DPX3220	-F50 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		SAKU	SAKU	SAKU	SAKU	SAKU	SAKU
		1B/61	1B/61	1B/61	1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 005 ...	Article no. 51 058 ...	Article no. 51 005 ...	Article no. 51 058 ...	Article no. 50 306 ...	Article no. 51 004 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR
1706ABSR	0,8	29,13 520	29,13 520	29,13 620	29,13 620	35,84 520	35,84 570
Steel		○	○	○	○		
Stainless steel							
Cast iron		●	●	●	●		
Non ferrous metals							
Heat resistant alloys						●	●
hardened materials							

Milling guide

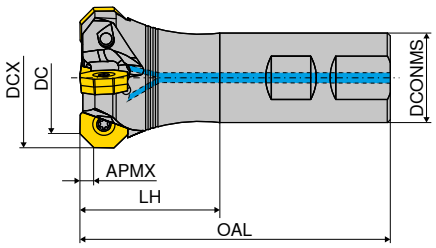
Starting Parameter	→ 144	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 144

15

MaxiMill – End milling cutter C 273

▲ 16 cutting edges per insert







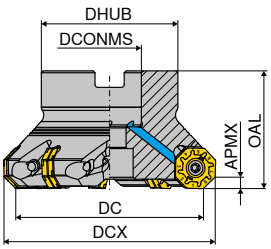
B

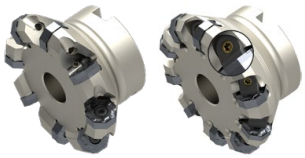
Designation	DC	DCX	ZNF	APMX	DCONMS h6	LH	OAL	torque moment	Insert	2B/40 Article no. 50 762 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR	
C273.32.R.03-06-B-40	32	42,1	3	3,5	32	40	101	5	OAKU / XAHT 0605	387,10	032
C273.40.R.04-06-B32-50	40	50,1	4	3,5	32	50	111	5	OAKU / XAHT 0605	400,00	040

MaxiMill – Shell mill A 273

▲ 16 cutting edges per insert







Designation	DC	DCX	ZNF	APMX	OAL	DCONMS H6	DHUB	torque moment	Insert	2B/40 Article no. 50 741 ...		2B/40 Article no. 50 741 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR		EUR	
A273.40.R.04-06	40	50,2	3	3,5	40	16	38	5	OAKU / XAHT 0605	381,40	040		
A273.40.R.04-06	40	50,2	4	3,5	40	16	38	5	OAKU / XAHT 0605	400,00	140 5)		
A273.50.R.05-06	50	60,2	5	3,5	40	22	43	5	OAKU / XAHT 0605	448,50	050		
A273.63.R.07-06	63	73,2	7	3,5	40	22	48	5	OAKU / XAHT 0605	538,40	063		
A273.80.R.08-06	80	90,2	8	3,5	50	27	58	5	OAKU / XAHT 0605	628,10	080		
A273.80.R.10-06	80	90,2	10	3,5	50	27	58	5	OAKU / XAHT 0605			957,10	180 1)
A273.100.R.10-06	100	110,2	10	3,5	50	32	78	5	OAKU / XAHT 0605	740,30	100		
A273.100.R.14-06	100	110,2	14	3,5	50	32	78	5	OAKU / XAHT 0605			1.223,00	200 1)
A273.125.R.12-06	125	135,2	12	3,5	63	40	88	5	OAKU / XAHT 0605	830,00	125		
A273.125.R.17-06	125	135,2	17	3,5	63	40	88	5	OAKU / XAHT 0605			1.419,00	225 1)
A273.160.R.14-06	160	170,2	14	3,5	63	40	104	5	OAKU / XAHT 0605	983,90	160 4)		
A273.160.R.20-06	160	170,2	20	3,5	63	40	104	5	OAKU / XAHT 0605			1.679,00	260 2)
A273.200.R.25-06	200	210,2	25	3,5	63	60	153	5	OAKU / XAHT 0605			2.099,00	300 3)
A273.250.R.31-06	250	260,2	31	3,5	63	60	153	5	OAKU / XAHT 0605			2.567,00	25031 3)

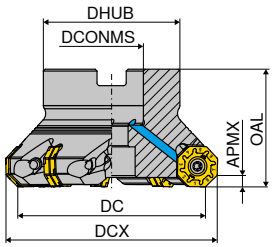
1) Version with Wedge, without internal coolant supply
2) Version with Wedge, without internal coolant supply / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) Version with Wedge, without internal coolant supply / With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm
4) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant
5) Without Through Coolant

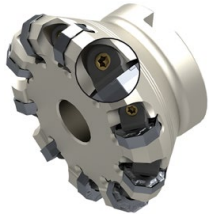
Spare parts IDNR	Y7  TORX® blade Article no. 80 950 ...		Y7  Clamping key – T Article no. 80 397 ...		2A/28  Clamping wedge screw Article no. 70 950 ...		2A/28  Clamping wedge Face mill Article no. 70 950 ...		Y7  Key D Article no. 80 950 ...		2A/28  Power Screw Article no. 70 950 ...		2A/28  Clamping screw Article no. 70 950 ...		Y7  Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR		EUR	
50741040	4,76	037	3,91	040					9,95	114	12,48	151	4,09	302	131,90	193
50741050	4,76	037	4,24	050					9,95	114	17,14	154	4,09	302	131,90	193
50741063 - 50741125	4,76	037							9,95	114			4,09	302	131,90	193
50741140	4,76	037	3,91	040					9,95	114	12,48	151	4,09	302	131,90	193
50741160	4,76	037							9,95	114			4,09	302	131,90	193
50741180 - 50741300	4,76	036			5,90	844	23,55	845	9,28	113					131,90	193
50762032 - 50762040	4,76	037							9,95	114			4,09	302	131,90	193
5074125031	4,76	036			5,90	844	23,55	845	9,28	113					131,90	193

MaxiMill – Shell mill A 273

- 16 cutting edges per indexable insert
- Axially adjustable







Designation	DC	DCX	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	NEW 2B/40 Article no. 50 777 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR	
A273.80.R.10A10-06	80	90,2	10	3,5	50	27	58	5	OAKU / XAHT 0605	1.258,00	**08010** [1]
A273.100.R.14A14-06	100	110,2	14	3,5	50	32	78	5	OAKU / XAHT 0605	1.713,00	**10014** [1]
A273.125.R.17A17-06	125	135,2	17	3,5	63	40	88	5	OAKU / XAHT 0605	2.014,00	**12517** [1]
A273.160.R.20A20-06	160	170,2	20	3,5	63	40	104	5	OAKU / XAHT 0605	2.378,00	**16020** [2]
A273.200.R.25A25-06	200	210,2	25	3,5	63	60	153	5	OAKU / XAHT 0605	2.974,00	**20025** [3]
A273.250.R.31A31-06	250	260,2	31	3,5	63	60	153	5	OAKU / XAHT 0605	3.652,00	**25031** [3]

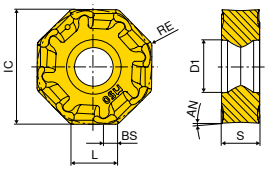
1) Version with Wedge, without internal coolant supply
2) Version with Wedge, without internal coolant supply / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) Version with Wedge, without internal coolant supply / With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

Spare parts DC	Y7 TORX® blade		2A/28 Clamping wedge screw		2A/28 Clamping wedge Face mill		Y7 Key D		2A/28 Molykote		2A/28 Wedge		Y7 Torque screwdriver	
	Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
80 - 250	4,76	**036**	5,90	**844**	23,55	**845**	9,28	**113**	4,38	**303**	36,80	**199**	131,90	**193**

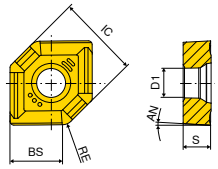
15

OAKU / XAHT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
XAHT 0605..	17,08	6,0	-	11,95	5,56	3
OAKU 0605..	17,10	5,8	6	2,00	5,66	3

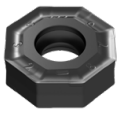
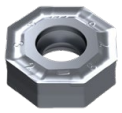


OAKU

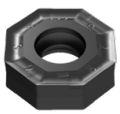
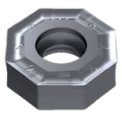


XAHT

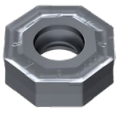
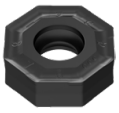
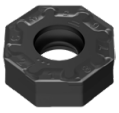
OAKU

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		OAKU	OAKU	OAKU	OAKU
		1B/61	1B/61	1B/61	1B/61
ISO	RE	**Article no. 51 000 ...**	**Article no. 51 001 ...**	**Article no. 51 000 ...**	**Article no. 51 001 ...**
	mm	EUR	EUR	EUR	EUR
060508SR	0,8	24,56 **258**	24,56 **258**	24,56 **058**	24,56 **058**
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

OAKU

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		OAKU	OAKU	OAKU	OAKU
		1B/61	1B/61	1B/61	1B/61
ISO	RE	**Article no. 51 000 ...**	**Article no. 51 001 ...**	**Article no. 51 000 ...**	**Article no. 51 001 ...**
	mm	EUR	EUR	EUR	EUR
060508SL	0,8				24,56 **10900**
060508SR	0,8	24,56 **008**	24,56 **008**	24,56 **108**	24,56 **108**
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

OAKU

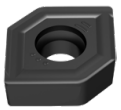
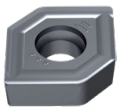
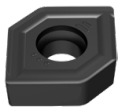
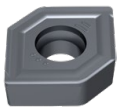
		-F50 CTPM225		-M50 CTPM225		-F50 CTCM235		-M50 CTCM235		-F50 CTPM240		-M50 CTPM240		-F40 CTPM245	
		-F50 DPX2225		-M50 DPX2225		-F50 DCX2235		-M50 DCX2235		-F50 DPX2240		-M50 DPX2240		-F40 DPX2245	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		OAKU		OAKU		OAKU		OAKU		OAKU		OAKU		OAKU	
		1B/61		1B/61		1B/61		1B/61		1B/61		1B/61		1H/17	
ISO	RE	Article no. 51 000 ...		Article no. 51 001 ...		Article no. 51 000 ...		Article no. 51 001 ...		Article no. 51 000 ...		Article no. 51 001 ...		Article no. 51 104 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
060508ER	0,8													30,71	458
060508SR	0,8	24,56	208	24,56	208	24,56	308	24,56	308	24,56	408	24,56	408		
Steel		○		○		○		○		○		○		●	
Stainless steel		●		●		●		●		●		●		●	
Cast iron															
Non ferrous metals															
Heat resistant alloys															
hardened materials															

OAKU

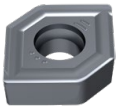
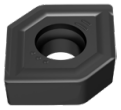
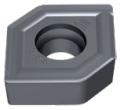
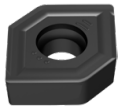
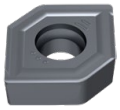
		-M50 CTCK215		-R50 CTCK215		-M50 CTPK220		-R50 CTPK220		-F40 CTC5240	
		-M50 DCX3215		-R50 DCX3215		-M50 DPX3220		-R50 DPX3220		-F40 HCF5240	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
											
		OAKU		OAKU		OAKU		OAKU		OAKU	
		1B/61		1B/61		1B/61		1B/61		1H/D4	
ISO	RE	Article no. 51 001 ...		Article no. 51 027 ...		Article no. 51 001 ...		Article no. 51 027 ...		Article no. 50 446 ...	
	mm	EUR		EUR		EUR		EUR		EUR	
060508ER	0,8									30,71	550
060508SL	0,8	24,56	50900			24,56	60900				
060508SR	0,8	24,56	508	24,56	508	24,56	608	24,56	608		
Steel		○		○		○		○			
Stainless steel											
Cast iron		●		●		●		●			
Non ferrous metals											
Heat resistant alloys										●	
hardened materials											

15

XAHT

		-M50 CTCP220	-M50 CTPP225	-M50 CTCP230	-M50 CTPP235
		-M50 DCX1220	-M50 DPX1225	-M50 DCX1230	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XAHT	XAHT	XAHT	XAHT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...
	mm	EUR	EUR	EUR	EUR
060525SR	2,5	30,41 275	30,41 075	30,41 025	30,41 125
Steel		●	●	●	●
Stainless steel				○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

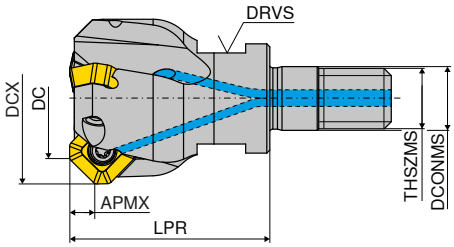
XAHT

		-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-M50 CTCK215	-M50 CTPK220
		-M50 DPX2225	-M50 DCX2235	-M50 DPX2240	-M50 DCX3215	-M50 DPX3220
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		XAHT	XAHT	XAHT	XAHT	XAHT
		1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...
	mm	EUR	EUR	EUR	EUR	EUR
060525SL	2,5				30,41 52600	
060525SR	2,5	30,41 225	30,41 325	30,41 425	30,41 525	30,41 625
Steel		○	○	○	○	○
Stainless steel		●	●	●		
Cast iron					●	●
Non ferrous metals						
Heat resistant alloys						
hardened materials						

Milling guide

Starting Parameter	→ 145	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 145

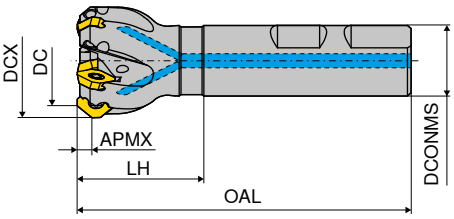
MaxiMill – Screw in cutter 45° G 270-09





Designation	DC	DCX	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B Article no. 55 202 ...	
	mm	mm		mm	mm		mm	mm	Nm		EUR	
G270.ESF.16.R.02-09	16	24,4	2	4	27	M8	8,5	10	1,8	SD.. 0903..	157,30	016
G270.ESF.20.R.03-09	20	28,4	3	4	33	M10	10,5	15	1,8	SD.. 0903..	184,50	020
G270.ESF.25.R.04-09	25	33,4	4	4	35	M12	12,5	17	1,8	SD.. 0903..	207,70	025
G270.ESF.32.R.05-09	32	40,4	5	4	35	M16	17,0	17	1,8	SD.. 0903..	228,50	032

MaxiMill – End milling cutter 45° C 270-09



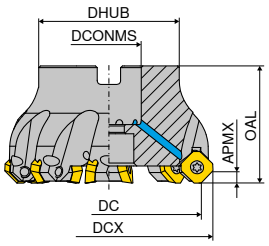




Designation	DC	DCX	ZNF	APMX	OAL	LH	DCONMS	torque moment	Insert	2B/40 Article no. 50 666 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR	
C270.06.R.01-09	6	14,4	1	4	80	32	16	1,2	SD.. 0903..	135,80	006
C270.12.R.01-09	12	20,4	1	4	80	32	16	1,2	SD.. 0903..	150,00	012
C270.16.R.02-09	16	24,4	2	4	90	40	20	1,8	SD.. 0903..	170,80	016
C270.20.R.03-09	20	28,4	3	4	90	40	20	1,8	SD.. 0903..	217,30	020
C270.25.R.04-09	25	33,4	4	4	100	44	25	1,8	SD.. 0903..	307,90	025
C270.32.R.05-09	32	40,4	5	4	95	36	25	1,8	SD.. 0903..	362,20	032

MaxiMill – Shell mill 45° A 270-09










Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	torque moment	right 2B/40 Article no. 50 704 ...		right 2B/40 Article no. 50 705 ...		right 2B/40 Article no. 50 706 ...		left 2B Article no. 50 707 ...	
	mm	mm		mm	mm	mm	mm	Nm	EUR		EUR		EUR		EUR	
A270.32.R.05-09	32	40,4	5	4	40	34	16	1,8					346,60	**532**		
A270.40.R.04-09	40	48,4	4	4	40	38	16	1,8			355,70	**540**				
A270.40.R.06-09	40	48,4	6	4	40	38	16	1,8					401,10	**540**		
A270.42.R.06-09	42	50,4	6	4	40	38	16	1,8					415,20	**542**		
A270.50.R.06-09	50	58,4	6	4	40	43	22	1,8			412,70	**550**				
A270.50.R.08-09	50	58,4	8	4	40	43	22	1,8					494,20	**550**		
A270.50.L.08-09	50	58,4	8	4	40	43	22	1,8							511,70	**550**
A270.52.R.08-09	52	60,4	8	4	40	43	22	1,8					511,70	**552**		
A270.63.R.05-09	63	71,4	5	4	40	48	22	1,8	401,10	**563**						
A270.63.R.08-09	63	71,4	8	4	40	48	22	1,8			500,60	**563**				
A270.63.R.10-09	63	71,4	10	4	40	48	22	1,8					623,50	**563**		
A270.63.L.10-09	63	71,4	10	4	40	48	22	1,8							644,90	**563**
A270.66.R.10-09	66	74,4	10	4	40	48	22	1,8					644,90	**566**		
A270.80.R.06-09	80	88,4	6	4	50	58	27	1,8	454,00	**580**						
A270.80.R.10-09	80	88,4	10	4	50	58	27	1,8			632,50	**580**				
A270.80.R.12-09	80	88,4	12	4	50	58	27	1,8					750,10	**580**		
A270.80.L.12-09	80	88,4	12	4	50	58	27	1,8							776,00	**580**
A270.100.R.07-09	100	108,4	7	4	50	78	32	1,8	586,10	**600**						
A270.100.R.12-09	100	108,4	12	4	50	78	32	1,8			763,20	**600**				
A270.100.R.14-09	100	108,4	14	4	50	78	32	1,8					886,20	**600**		
A270.125.R.12-09	125	133,4	12	4	63	88	40	1,8			892,60	**625**				
A270.160.R.12-09	160	168,4	12	4	63	93	40	1,8	1.148,00	**660** [1)]						

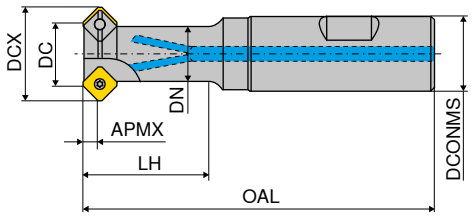
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

- ▲ 50 704 ... Open pitch for use on aluminum alloys, non-ferrous metals and plastics
- ▲ 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, and soft steel materials
- ▲ 50 706 ... Fine pitch for highest feed rates, predominantly used on steel and cast materials
- ▲ 50 707 ... As 50 706 ..., but **left hand** version

MaxiMill – Chamfer milling cutter C 272-09

▲ Usable on front and rear cutting edges







B

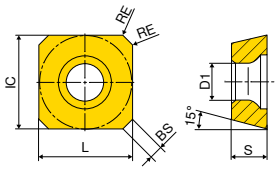
Designation	DC	DCX	ZNF	APMX	DN	OAL	LH	DCONMS	torque moment	Insert	2B Article no. 50 669 ...	
	mm	mm		mm	mm	mm	mm	mm	Nm		EUR	
C272.06.R.01-09	6	14,4	1	4	10	91	24,0	16	1,2	SD.. 0903..	161,50	**006**
C272.08.R.01-09	8	16,4	1	4	10	91	25,5	16	1,2	SD.. 0903..	180,00	**008**
C272.12.R.01-09	12	20,4	1	4	12	91	26,0	16	1,2	SD.. 0903..	185,00	**012**
C272.16.R.02-09	16	24,4	2	4	15	97	30,0	20	1,8	SD.. 0903..	227,70	**016**
C272.18.R.02-09	18	26,4	2	4	16	97	30,0	20	1,8	SD.. 0903..	227,70	**018**
C272.25.R.03-09	25	33,4	3	4	21	109	35,0	25	1,8	SD.. 0903..	266,40	**025**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
6 - 12	4,76	**033**	7,80	**110**	4,38	**303**	3,14	**365**	118,90	**191**
16 - 160	4,76	**033**	7,80	**110**	4,38	**303**	2,57	**115**	118,90	**191**

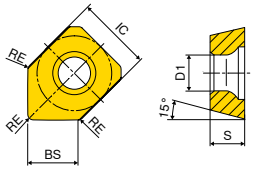
15

SDHW / SDNT / SDHT / XDHW

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHW 0903..	9,52	3,4	-	5,50	3,18
SD.. 0903..	9,52	3,4	9,52	1,68	3,18

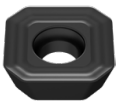
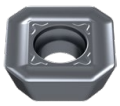
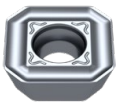


SD..

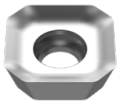
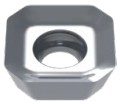
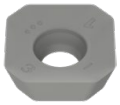


XDHW

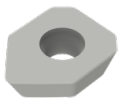
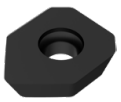
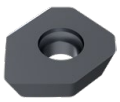
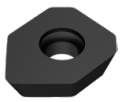
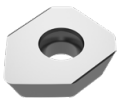
SDHW / SDNT / SDHT

	TCM10	-29 CTCP230	-29 CTPP235	-33 CTPM240	-33P CTPM240	-F50 CTPM245
	CWC10	-29 DCX1230	-29 DPX1235	-33 DPX2240	-33P DPX2240	-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	CERMET					
	SDHW	SDNT	SDNT	SDHT	SDHT	SDHT
	1B/79	1B/61	1B/61	1B/61	1B/61	1H/17
ISO / RE mm	Article no. 50 428 ...	Article no. 51 011 ...	Article no. 51 011 ...	Article no. 51 028 ...	Article no. 51 086 ...	Article no. 51 109 ...
	EUR	EUR	EUR	EUR	EUR	EUR
0903AESN / 1,0	15,97 898	13,79 020	13,79 120	15,76 420	16,59 420	19,60 470
Steel	●	●	●	○	○	●
Stainless steel	●	○	○	●	●	●
Cast iron	○					
Non ferrous metals						
Heat resistant alloys						
hardened materials						

SDNT / SDHT

	-31 CTCK215	-27P H216T	-27P AMZ	-M31 CTC5240	-F50 CTCS245
	-31 DCX3215	-ALP CWK26	-ALP AMZ	-M31 HCF5240	
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN
					
	SDNT	SDHT	SDHT	SDHT	SDHT
	1B/61	1A/90	1A/90	1H/D4	NEW 1H/D4
ISO / RE mm	Article no. 51 029 ...	Article no. 50 426 ...	Article no. 50 426 ...	Article no. 50 421 ...	Article no. 51 109 ...
	EUR	EUR	EUR	EUR	EUR
0903AEFN / 1,0		15,76 548	18,90 848		
0903AESN / 1,0	13,20 520			19,60 509	19,60 57100
Steel	○				
Stainless steel					
Cast iron	●	○	○		
Non ferrous metals		●	●		
Heat resistant alloys				●	●
hardened materials					

XDHW

		TCM10	CTCP230	CTPP235	CTCK215	H216T
		CWC10	DCX1230	DPX1235	DCX3215	CWK26
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
		CERMET				
		XDHW	XDHW	XDHW	XDHW	XDHW
		1B/79	1B/61	1B/61	1B/18	1B/61
ISO	RE	Article no. 50 449 ...	Article no. 51 015 ...	Article no. 51 015 ...	Article no. 51 015 ...	Article no. 50 449 ...
	mm	EUR	EUR	EUR	EUR	EUR
0903AEEN	1				18,75 520	
0903AEFN	1					16,59 548
0903AESN	1	17,31 898	19,39 020	19,39 120		
Steel		●	●	●	○	
Stainless steel		●	○	○		
Cast iron		○			●	○
Non ferrous metals						●
Heat resistant alloys						
hardened materials						

Milling guide

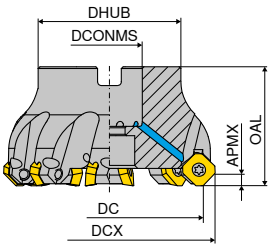
Machining strategy	→ 146	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 146

15

MaxiMill – Shell mill 45° A 270-12

- ▲ 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, up to soft steel materials
- ▲ 50 706 ... Predominantly fine pitch for highest feed rates, use on steel and cast materials







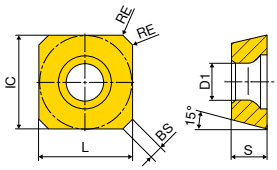
Designation	DC	DCX	ZNF	APMX	DCONMS $_{H6}$	OAL	DHUB	torque moment	Insert	2B/40 Article no. 50 705 ...		2B/40 Article no. 50 706 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR		EUR	
A270.32.R.03-12	32	46	3	6	16	40	32	5	SD../XD.. 1204..	397,10	**032**		
A270.40.R.03-12	40	54	3	6	16	40	38	5	SD../XD.. 1204..	406,20	**040**		
A270.40.R.04-12	40	54	4	6	16	40	38	5	SD../XD.. 1204..			406,20	**040**
A270.50.R.04-12	50	64	4	6	22	40	43	5	SD../XD.. 1204..	459,20	**050**		
A270.50.R.05-12	50	64	5	6	22	40	43	5	SD../XD.. 1204..			459,20	**050**
A270.63.R.04-12	63	77	4	6	22	40	48	5	SD../XD.. 1204..	525,20	**063**		
A270.63.R.06-12	63	77	6	6	22	40	48	5	SD../XD.. 1204..			601,50	**063**
A270.80.R.05-12	80	94	5	6	27	50	58	5	SD../XD.. 1204..	609,30	**080**		
A270.80.R.08-12	80	94	8	6	27	50	58	5	SD../XD.. 1204..			750,10	**080**
A270.100.R.06-12	100	114	6	6	32	50	78	5	SD../XD.. 1204..	717,80	**100**		
A270.100.R.10-12	100	114	10	6	32	50	78	5	SD../XD.. 1204..			878,30	**100**
A270.125.R.07-12	125	139	7	6	40	63	88	5	SD../XD.. 1204..	877,00	**125**		
A270.125.R.12-12	125	139	12	6	40	63	88	5	SD../XD.. 1204..			1.186,00	**125**
A270.160.R.08-12	160	174	8	6	40	63	94	5	SD../XD.. 1204..	1.120,00	**160** [1]		

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

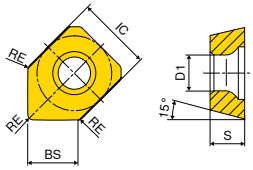
Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Power Screw Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
32 - 40	4,76	**037**	3,91	**040**	9,95	**114**	12,48	**151**	4,38	**303**	2,52	**280**	131,90	**193**
50 - 160	4,76	**037**			9,95	**114**			4,38	**303**	2,52	**280**	131,90	**193**

SDHT / SDHW / SDMT / XDHW

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHW 1204..	12,7	5,5	-	7,50	4,76
SD.. 1204..	12,7	5,5	12,7	1,74	4,76



SD..

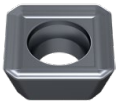
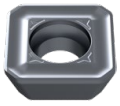


XDHW

SDHT / SDHW / SDMT

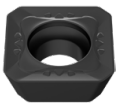
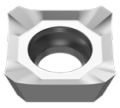
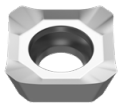
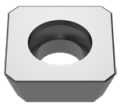
	TCM10	-R TCM10	-29R CTCP230	-R CTCP230	CTCP230
	CWC10	-R CWC10	-29R DCX1230	-R DCX1230	DCX1230
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	CERMET	CERMET			
	SDHT	SDHW	SDMT	SDHT	SDHW
	1B/79	1B/79	1B/61	1B/61	1B/61
ISO / RE mm	Article no. 50 426 ... EUR	Article no. 50 428 ... EUR	Article no. 51 010 ... EUR	Article no. 51 006 ... EUR	Article no. 51 008 ... EUR
1204AESN / 0,2	17,19 900				
1204AESN / 1,0		17,91 899	14,65 020	16,71 020	17,19 020
Steel	●	●	●	●	●
Stainless steel	●	●	○	○	○
Cast iron	○	○			
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SDMT / SDHT / SDHW

	-29 CTPP235	-R CTPP235	-R CTPP235	-F50 CTPM245	-33 CTPM240
	-29 DPX1235	-R DPX1235	-R DPX1235	-F50 DPX2245	-33 DPX2240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	SDMT	SDHT	SDHW	SDHT	SDHT
	1B/61	1B/61	1B/61	1H/17	1B/61
ISO / RE mm	Article no. 51 010 ... EUR	Article no. 51 006 ... EUR	Article no. 51 008 ... EUR	Article no. 51 109 ... EUR	Article no. 51 028 ... EUR
1204AESN / 1,0	14,65 120	16,71 120	17,19 120	22,57 475	17,19 425
Steel	●	●	●	●	○
Stainless steel	○	○	○	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

15

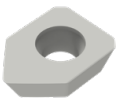
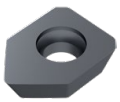
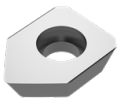
SDMT / SDHW / SDHT

		-31 CTCK215	-R CTCK215	-27 H216T	-27P H216T	H216T
		-31 DCX3215	-R DCX3215	-AL CWK26	-ALP CWK26	CWK26
		DRAGONSKIN	DRAGONSKIN			
						
		SDMT	SDHW	SDHT	SDHT	SDHW
		1B/61	1B/61	1A/90	1A/90	1B/61
ISO	RE	Article no. 51 059 ...	Article no. 51 008 ...	Article no. 50 426 ...	Article no. 50 426 ...	Article no. 50 428 ...
	mm	EUR	EUR	EUR	EUR	EUR
1204AEEN	1,0	14,28 520	17,19 520			
1204AEFN	0,2			17,19 504		
1204AEFN	1,0				17,19 554	
1204AESN	0,2					14,28 600
Steel		○	○			
Stainless steel						
Cast iron		●	●	○	○	○
Non ferrous metals				●	●	●
Heat resistant alloys						
hardened materials						

SDHT

		-M31 CTC5240	-F50 CTCS245
		-M31 HCF5240	
		DRAGONSKIN	DRAGONSKIN
			
		SDHT	SDHT
		1H/D4	NEW 1H/D4
ISO	RE	Article no. 50 421 ...	Article no. 51 109 ...
	mm	EUR	EUR
1204AESN	1,0	22,57 512	22,57 57600
Steel			
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys		●	●
hardened materials			

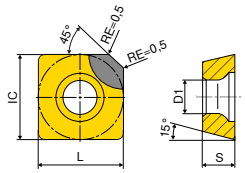
XDHW

		TCM10	CTCP230	CTPP235	CTCK215	H216T
		CWC10	DCX1230	DPX1235	DCX3215	CWK26
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
		CERMET				
		XDHW	XDHW	XDHW	XDHW	XDHW
		1B/79	1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 50 449 ...	Article no. 51 015 ...	Article no. 51 015 ...	Article no. 51 015 ...	Article no. 50 449 ...
	mm	EUR	EUR	EUR	EUR	EUR
1204AEEN	1				22,64 525	
1204AEFN	1					21,42 600
1204AESN	1	22,64 900	23,74 025	23,74 125		
Steel		●	●	●	○	
Stainless steel		●	○	○		
Cast iron		○			●	○
Non ferrous metals						●
Heat resistant alloys						
hardened materials						

15

SDHW

Designation	IC	D1	L	S
	mm	mm	mm	mm
SDHW 1204..	12,7	5,5	12,7	4,76

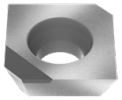


SDHW

SDHW

CTBS10U

PBC10



CBN
SDHW
V9

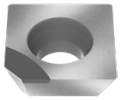
ISO	Article no. 51 900 ...	EUR	
1204AETN-2		54,15	300 1)
Steel			
Stainless steel			
Cast iron			●
Non ferrous metals			
Heat resistant alloys			●
hardened materials			

1) $a_{p\,max.}$ = 2.0 mm

SDHW

CTDPS30

PDC



DIAMOND
SDHW
V9

ISO	Article no. 51 900 ...	EUR	
1204AEFN-2		59,03	100 1)
1204AEFN-3		59,03	102 2)
Steel			
Stainless steel			
Cast iron			
Non ferrous metals			●
Heat resistant alloys			
hardened materials			

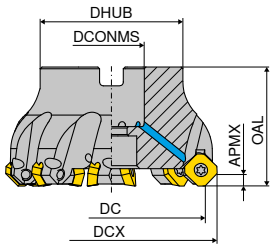
1) $a_{p\,max.}$ = 2.0 mm
2) $a_{p\,max.}$ = 3,5 mm

Milling guide

Machining strategy	→ 147	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 147

MaxiMill – Shell mill 45° A 270-19







Designation	DC	DCX	ZNF	APMX	DCONMS $_{H6}$	OAL	DHUB	torque moment	Insert	Left-hand NEW 2B/40 Article no. 50 698 ...		Right-hand NEW 2B/40 Article no. 50 698 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR		EUR	
A270.125.R.07-19	125	146,4	7	10	40	63	88	5	SD.. 1907..			786,50	**12507**
A270.160.R.09-19	160	181,4	9	10	40	63	104	5	SD.. 1907..			996,20	**16009**[1)]
A270.200.R.11-19	200	221,1	11	10	60	63	134	5	SD.. 1907..			1.206,00	**20011**[2)]
A270.250.L.14-19	250	271,4	14	10	60	63	134	5	SD.. 1907..	2.254,00	**75014**[2)]		
A270.250.R.14-19	250	271,4	14	10	60	63	134	5	SD.. 1907..			2.254,00	**25014**[2)]
A270.315.L.17-19	315	336,4	17	10	60	63	226	5	SD.. 1907..	2.670,00	**81517**[3)]		
A270.315.R.17-19	315	336,4	17	10	60	63	226	5	SD.. 1907..			2.670,00	**31517**[3)]

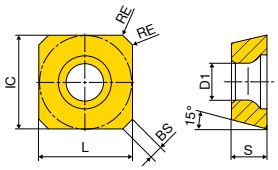
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm
3) With 4 threaded holes M16 on the front face, pitch circle diameter = 101.6 mm and with 4 threaded holes M20 on the front face, pitch circle diameter = 177.8 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR	
125 - 315	4,76	**037**	9,95	**114**	4,38	**303**	4,09	**302**	131,90	**193**

15

SDKT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
SDKT 1907..	19,15	6	19,15	1,5	7,35	15
SDKT 1907..	19,15	6	19,15	1,5	7,16	15



SD..

SDKT

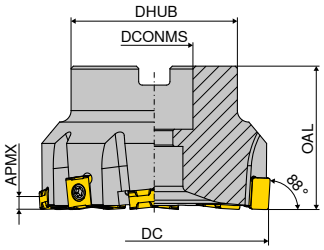
	-R50 CTCP230	-M50 CTPP235	-R50 CTPP235	-R50 CTPM225	-R50 CTCK215
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	SDKT	SDKT	SDKT	SDKT	SDKT
	NEW 1B/61	NEW 1B/61	NEW 1B/61	NEW 1B/61	NEW 1B/61
ISO RE mm	Article no. 51 132 ... EUR	Article no. 51 131 ... EUR	Article no. 51 132 ... EUR	Article no. 51 132 ... EUR	Article no. 51 132 ... EUR
1907AESN 1,6	31,03 **02100**	31,03 **12000**	31,03 **12300**	31,03 **22200**	31,03 **52000**
Steel	●	●	●	○	○
Stainless steel	○	○	○	●	
Cast iron					●
Non ferrous metals					
Heat resistant alloys					
hardened materials					

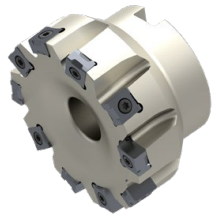
Milling guide

Grade description	→ 209	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 148		

MaxiMill – Shell mill HEC 11

▲ not adjustable



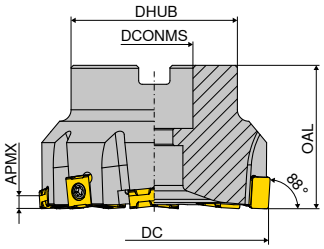


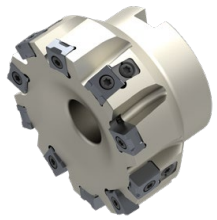
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 725 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
AHEC.50.R.06-11	50	6	6	40	48	22	12700	3,2	LNHX 1106	542,80	**050**
AHEC.63.R.08-11	63	8	6	40	48	22	10100	3,2	LNHX 1106	651,60	**063**
AHEC.80.R.10-11	80	10	6	50	58	27	8000	3,2	LNHX 1106	796,60	**080**
AHEC.100.R.12-11	100	12	6	50	78	32	6400	3,2	LNHX 1106	929,60	**100**
AHEC.125.R.12-11	125	12	6	63	88	40	5100	3,2	LNHX 1106	1.062,00	**125**
AHEC.125.R.16-11	125	16	6	63	88	40	5100	3,2	LNHX 1106	1.070,00	**12516**
AHEC.160.R.20-11	160	20	6	63	100	40	4000	3,2	LNHX 1106	1.559,00	**160** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

MaxiMill – Shell mill HEC 11

▲ Axially adjustable with same tooth pitch



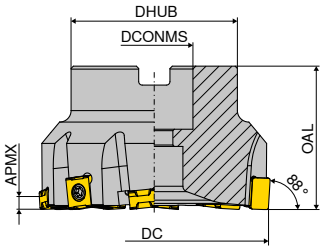


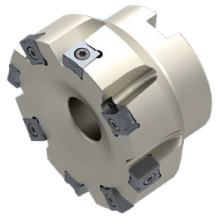
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 733 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
AHEC.50.R.06A03-11	50	6	6	40	48	22	12700	3,2	LNHX 1106	822,50	**050**
AHEC.63.R.08A04-11	63	8	6	40	48	22	10100	3,2	LNHX 1106	1.024,00	**063**
AHEC.80.R.10A05-11	80	10	6	50	58	27	8000	3,2	LNHX 1106	1.263,00	**080**
AHEC.100.R.12A06-11	100	12	6	50	78	32	6400	3,2	LNHX 1106	1.490,00	**100**
AHEC.125.R.16A08-11	125	16	6	63	88	40	5100	3,2	LNHX 1106	2.016,00	**125**
AHEC.160.R.20A10-11	160	20	6	63	100	40	4000	3,2	LNHX 1106	2.491,00	**160** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

MaxiMill – Shell mill HEC 11

▲ with irregular pitch, non adjustable





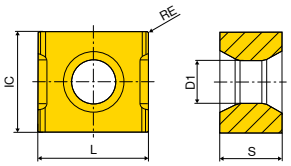
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 733 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
AHEC.50.R.04B-11	50	4	6	40	48	22	12700	3,2	LNHX 1106	423,40	**550**
AHEC.63.R.06B-11	63	6	6	40	48	22	10100	3,2	LNHX 1106	526,20	**563**
AHEC.80.R.08B-11	80	8	6	50	58	27	8000	3,2	LNHX 1106	674,40	**580**
AHEC.100.R.10B-11	100	10	6	50	78	32	6400	3,2	LNHX 1106	866,80	**600**
AHEC.125.R.12B-11	125	12	6	63	88	40	5100	3,2	LNHX 1106	1.060,00	**625**
AHEC.160.R.14B-11	160	14	6	63	100	40	4000	3,2	LNHX 1106	1.316,00	**660** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Coolant Disc Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR	
50 - 63	4,76	**036**	4,38	**303**	25,18	**852**	3,14	**113**	36,80	**199**	131,90	**193**
80	4,76	**036**	4,38	**303**	25,73	**853**	3,14	**113**	36,80	**199**	131,90	**193**
100	4,76	**036**	4,38	**303**	28,32	**854**	3,14	**113**	36,80	**199**	131,90	**193**
125	4,76	**036**	4,38	**303**	37,33	**855**	3,14	**113**	36,80	**199**	131,90	**193**
160	4,76	**036**	4,38	**303**			3,14	**113**	36,80	**199**	131,90	**193**

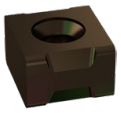
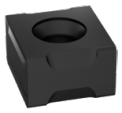
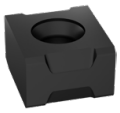
LNHX

Designation	IC	D1	L	S
	mm	mm	mm	mm
LNHX 1106..	10	4,27	11	6,35



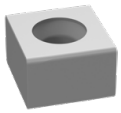
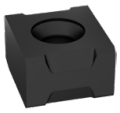
LNHX

LNHX

		CTEP210	CTCK215	-R50 CTCK215	-Q CTCK215
		DCC1210	DCX3215	-R50 DCX3215	-Q DCX3215
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		CERMET			
		LNHX	LNHX	LNHX	LNHX
		1B/79	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 046 ...	Article no. 51 046 ...	Article no. 51 024 ...	Article no. 51 045 ...
	mm	EUR	EUR	EUR	EUR
1106PNEN	0,5		25,91 51600		
1106PNER	0,5		25,91 520	25,91 520	
1106PNER	0,8	30,04 820			
1106ZZER	0,5				25,91 520 1)
Steel		●	○	○	○
Stainless steel					
Cast iron		●	●	●	●
Non ferrous metals					
Heat resistant alloys					
hardened materials					

1) -Q = Wiper insert

LNHX

		CTPK220	-R50 CTPK220	CTN3105	CTL3215	-Q CTL3215
		DPX3220	-R50 DPX3220	CTS3105	CWB3215	
		DRAGONSKIN	DRAGONSKIN			
						
		LNHX	LNHX	CERAMIC LNHX	CBN LNHX	CBN LNHX
		1B/61	1B/61	1G/55	1G/21	1G/21
ISO	RE	Article no. 51 046 ...	Article no. 51 024 ...	Article no. 50 500 ...	Article no. 51 046 ...	Article no. 51 045 ...
	mm	EUR	EUR	EUR	EUR	EUR
110608EN	0,8		25,91 608			
1106PNER	0,5	25,91 620	25,91 620			
1106PNSR	0,5			24,42 904		
1106PNSR					142,70 87200	
1106ZZER						142,70 87000 1)
Steel		○	○			
Stainless steel						
Cast iron		●	●	●	●	●
Non ferrous metals						
Heat resistant alloys						
hardened materials					○	○

1) -Q = Wiper insert

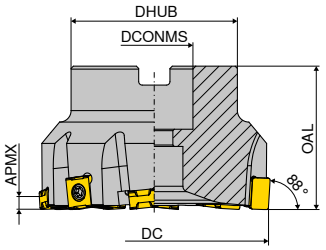
Milling guide

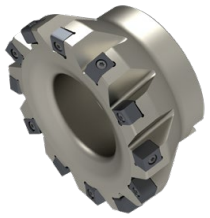
Grade description	→ 209+210	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 148		

15

MaxiMill – Shell mill HEC 12

▲ not adjustable





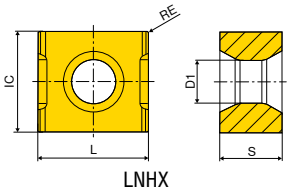
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	NEW 2B/40 Article no. 50 725 ...
	mm		mm	mm	mm	mm	1/min.	Nm		EUR
AHEC.125.R.12-1210	125	12	8	63	88	40	5000	3,2	LN.. 1210..	1.062,00 **32512**
AHEC.160.R.16-1210	160	16	8	63	88	40	3900	3,2	LN.. 1210..	1.247,00 **36016** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 Key D Article no. 80 950 ... EUR		2A/28 Coolant Disc Article no. 70 950 ... EUR	
125 - 160	7,05	**105**	37,33	**855**

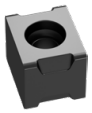
LNHX / LNEX

Designation	IC	D1	L	S
	mm	mm	mm	mm
LN.X 1210..	10	4,4	12,7	10,00



LNHX

LNHX / LNEX

	CTCK215	CTPK220	-R50 CTPK220
			
	LNHX	LNEX	LNHX
	NEW 1B/61	NEW 1B/61	NEW 1B/61
ISO / RE	Article no. 51 135 ... EUR	Article no. 51 133 ... EUR	Article no. 51 134 ... EUR
	mm			
121008EN	0,8			32,38 **60800**
121008SN	0,8	32,38 **50900**		
121020EN			29,79 **62000**	
121020SN	2,0	32,38 **52100**		
Steel		○	○	○
Stainless steel				
Cast iron		●	●	●
Non ferrous metals				
Heat resistant alloys				
hardened materials				

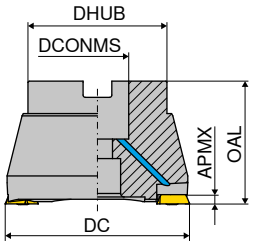
Milling guide

Grade description	→ 209+210	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 148		

Finishing cutter F 5000 A

- With µm-adjustable inserts
- Adjust with screw (56 950 017) and set with Torx 20 key (80 950 114)







Designation	DC	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	WA Article no. 56 511 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
F5000A.42.2.43.IK	42	2	0,2	43	16	35	3,2	TEHX 16T3..	321,90	**421**
F5000A.52.2.43.IK	52	2	0,2	43	22	48	3,2	TEHX 16T3..	389,10	**521**
F5000A.66.2.53.IK	66	2	0,2	53	27	60	3,2	TEHX 16T3..	454,00	**661**
F5000A.80.2.53.IK	80	2	0,2	53	27	60	3,2	TEHX 16T3..	520,10	**801**
F5000A.100.2.53	100	2	0,2	53	32	70	3,2	TEHX 16T3..	585,10	**910** 1)

1) Without Through Coolant

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key-T Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		WA Axial runout adjustment screw Article no. 56 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		WA Grubscrew Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR		EUR	
42	4,76	**036**	4,46	**088**	9,95	**114**	3,84	**017**	4,38	**303**	3,54	**028**	24,12	**121**	131,90	**193**
52	4,76	**036**	4,46	**088**	9,28	**113**	3,84	**017**	4,38	**303**	3,54	**028**			131,90	**193**
66	4,76	**036**	4,46	**088**	9,28	**113**	3,84	**017**	4,38	**303**	3,54	**028**			131,90	**193**
80	4,76	**036**	4,46	**088**	9,28	**113**	3,84	**017**	4,38	**303**	3,54	**028**			131,90	**193**
100	4,76	**036**	4,46	**088**	9,28	**113**	3,84	**017**	4,38	**303**	3,54	**028**	24,12	**121**	131,90	**193**

Description of article

- Tightening torque of the indexable insert clamping screw 56 950 028 is 3.2 Nm.
- This tool produces surfaces with excellent surface quality Rz ≤ 2.5 µm with high axial run-out precision.
- The two precision adjustment screws make adjustment to µm accuracy possible.
- Additional grinding is therefore avoided, so machining time and costs are reduced.
- The tool is also well-suited for unstable workpieces and low power machines.

The screws for the adjustment of the axial run-out are mounted on every milling cutter and have to be tightened to a preset value. Otherwise there is the danger that the screws loosen during the machining operation. This can result in damage of the workpiece or tool and also cause danger for the machine operator. Should the screws for fine adjustment not be needed we recommend to remove them from the tool.

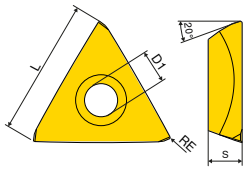
Material	v_c m/min	f_z mm	a_p mm
Steel	150–250*)	0,5–2	0,05–0,2
Cast iron	150–250*)	0,5–2	0,05–0,2
Hardened materials ≤ 56 HRC	35–200*)	0,2–1	0,05–0,1

*) Depending on the machining and structural state of the processed workpiece.

15

TEHX

Designation	L	S	D1
	mm	mm	mm
TEHX 16T3..	14,32	4,00	3,9



TEHX

WTN1205



TEHX
WB

ISO	RE	Article no. 56 327 ...
	mm	EUR
16T3ZF	0,2	21,18 **151**

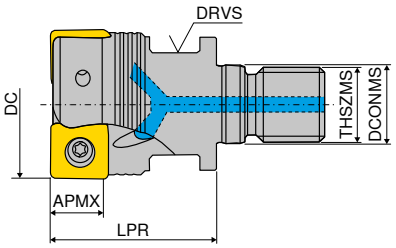
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	●

Milling guide

Grade description	→ 209+210	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 49		

MaxiMill – Screw in cutter G 491



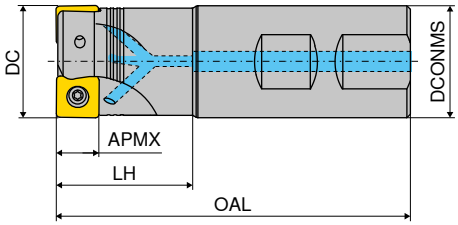




Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 773 ... EUR	
	mm		mm	mm		mm	mm	Nm			
G491.25.R.03-09	25	3	6	35	M12	12,5	17	2	SNHU 09T3	351,30	**125**
G491.32.R.03-09	32	3	6	35	M16	17,0	24	2	SNHU 09T3	356,60	**132**
G491.32.R.04-09	32	4	6	35	M16	17,0	24	2	SNHU 09T3	398,40	**232**

MaxiMill – End milling cutter C 491





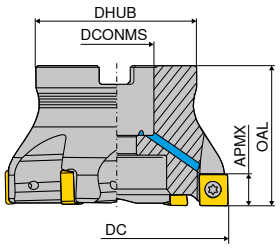




Designation	DC	ZNF	APMX	OAL	LH	DCONMS $_{h6}$	RPMX	torque moment	Insert	A 2B/40 Article no. 50 774 ... EUR		B 2B/40 Article no. 50 774 ... EUR	
	mm		mm	mm	mm	mm	1/min.	Nm					
C491.25.R.03-09-B-32	25	3	6	59	32	25	23500	2	SNHU 09T3			356,60	**425**
C491.25.R.03-09-A-50-225	25	3	6	225	50	25	23500	2	SNHU 09T3	356,60	**325**		
C491.32.R.03-09-B-40	32	3	6	101	40	32	19600	2	SNHU 09T3			367,00	**632**
C491.32.R.04-09-B-40	32	4	6	101	40	32	19600	2	SNHU 09T3			398,40	**432**
C491.32.R.03-09-A-63-250	32	3	6	250	63	32	19600	2	SNHU 09T3	367,00	**532**		
C491.32.R.04-09-A-63-250	32	4	6	250	63	32	19600	2	SNHU 09T3	398,40	**332**		

MaxiMill – Shell mill A 491





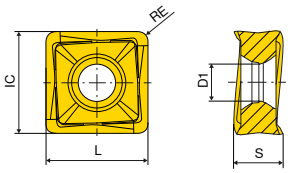


Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 776 ...		2B/40 Article no. 50 775 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
A491.40.R.03-09	40	3	6	40	38	16	16800	2	SNHU 09T3			387,90	**240**
A491.40.R.05-09	40	5	6	40	38	16	16800	2	SNHU 09T3	450,90	**240**		
A491.50.R.04-09	50	4	6	40	43	22	14600	2	SNHU 09T3			429,90	**250**
A491.50.R.06-09	50	6	6	40	43	22	14600	2	SNHU 09T3	492,80	**250**		
A491.63.R.05-09	63	5	6	40	48	22	12700	2	SNHU 09T3			513,80	**263**
A491.63.R.08-09	63	8	6	40	48	22	12700	2	SNHU 09T3	608,10	**263**		
A491.80.R.06-09	80	6	6	50	58	27	11100	2	SNHU 09T3			545,30	**280**
A491.80.R.10-09	80	10	6	50	58	27	11100	2	SNHU 09T3	671,10	**280**		
A491.100.R.07-09	100	7	6	50	78	32	9800	2	SNHU 09T3			692,00	**300**
A491.100.R.12-09	100	12	6	50	78	32	9800	2	SNHU 09T3	849,30	**300**		
A491.125.R.08-09	125	8	6	63	88	40	8700	2	SNHU 09T3			838,80	**325**
A491.125.R.15-09	125	15	6	63	88	40	8700	2	SNHU 09T3	1.028,00	**325**		

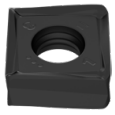
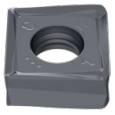
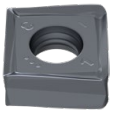
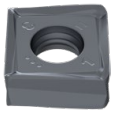
Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Power Screw Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
25 - 32	5,26	**053**			8,91	**119**			4,38	**303**	3,09	**710**	131,90	**193**
40	5,26	**053**	3,91	**040**	8,91	**119**	12,48	**151**	4,38	**303**	3,09	**710**	131,90	**193**
50 - 125	5,26	**053**			8,91	**119**			4,38	**303**	3,09	**710**	131,90	**193**

SNHU

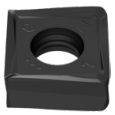
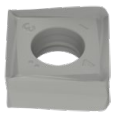
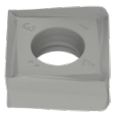
Designation	IC	L	S	D1
	mm	mm	mm	mm
SNHU 09T3..	9,15	9,15	3,70	3,85



SNHU

		-M50 CTCP230	-M50 CTPP235	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245
		-M50 DCX1230	-M50 DPX1235	-F50 DPX2240	-M50 DPX2240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		SNHU	SNHU	SNHU	SNHU	SNHU
		1B/61	1B/61	1B/61	1B/61	NEW 1H/17
ISO	RE	Article no. 51 120 ...	Article no. 51 120 ...	Article no. 51 119 ...	Article no. 51 120 ...	Article no. 51 126 ...
	mm	EUR	EUR	EUR	EUR	EUR
09T308ER	0,8					27,46 45800
09T308SR	0,8	21,95 008	21,95 108	21,95 408	21,95 408	
09T312SR	1,2	21,95 01200	21,95 11200	21,95 41200	21,95 41200	
09T316SR	1,6	21,95 01600	21,95 11600	21,95 41600	21,95 41600	
Steel		●	●	○	○	●
Stainless steel		○	○	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

SNHU

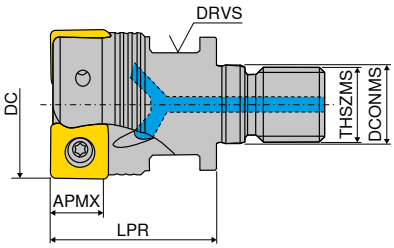
		-R50 CTCK215	-F10 CTWN215	-F40 CTC5240	-F40 CTCS245
		-R50 DCX3215	-F10 CWK4615		
		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
					
		SNHU	SNHU	SNHU	SNHU
		1B/61	1B/61	NEW 1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 121 ...	Article no. 51 118 ...	Article no. 51 126 ...	Article no. 51 126 ...
	mm	EUR	EUR	EUR	EUR
09T308ER	0,8			27,46 15800	27,46 55800
09T308FR	0,8		21,95 358		
09T308SR	0,8	21,95 508			
09T312FR	1,2		21,95 36200		
09T312SR	1,2	21,95 51200			
09T316FR	1,6		21,95 36600		
09T316SR	1,6	21,95 51600			
Steel		○			
Stainless steel					
Cast iron		●	○		
Non ferrous metals			●		
Heat resistant alloys				●	●
hardened materials					

15

Milling guide

Starting Parameter	→ 150	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 150

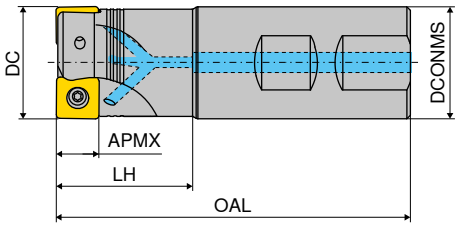
MaxiMill – Screw in cutter G 491





Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 773 ... EUR	
	mm		mm	mm		mm	mm	Nm			
G491.32.R.02-12	32	2	8	35	M16	17	24	3,2	SNHU 1204	335,60	**032**

MaxiMill – End milling cutter C 491



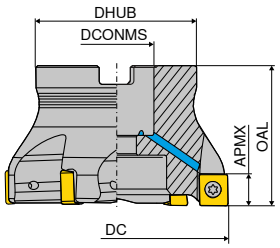




Designation	DC	ZNF	APMX	OAL	LH	DCONMS $_{h6}$	RPMX	torque moment	Insert	A 2B/40 Article no. 50 774 ... EUR		B 2B/40 Article no. 50 774 ... EUR	
	mm		mm	mm	mm	mm	1/min.	Nm					
C491.32.R.02-12-B-40	32	2	8	102	40	32	13600	3,2	SNHU 1204			335,60	**032**
C491.32.R.02-12-A-63-250	32	2	8	250	63	32	10200	3,2	SNHU 1204	335,60	**232**		

MaxiMill – Shell mill A 491







Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 776 ...		2B/40 Article no. 50 775 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
A491.40.R.03-12	40	3	8	40	38	16	11500	3,2	SNHU 1204			387,90	**040**
A491.40.R.04-12	40	4	8	40	38	16	11500	3,2	SNHU 1204	419,40	**040**		
A491.50.R.04-12	50	4	8	40	43	22	9800	3,2	SNHU 1204			429,90	**050**
A491.50.R.05-12	50	5	8	40	43	22	9800	3,2	SNHU 1204	461,40	**050**		
A491.63.R.05-12	63	5	8	40	48	22	8500	3,2	SNHU 1204			513,80	**063**
A491.63.R.06-12	63	6	8	40	48	22	8500	3,2	SNHU 1204	545,30	**063**		
A491.80.R.06-12	80	6	8	50	58	27	7400	3,2	SNHU 1204			545,30	**080**
A491.80.R.08-12	80	8	8	50	58	27	7400	3,2	SNHU 1204	629,10	**080**		
A491.100.R.07-12	100	7	8	50	78	32	6500	3,2	SNHU 1204			692,00	**100**
A491.100.R.10-12	100	10	8	50	78	32	6500	3,2	SNHU 1204	786,50	**100**		
A491.125.R.08-12	125	8	8	63	88	40	5700	3,2	SNHU 1204			838,80	**125**
A491.125.R.12-12	125	12	8	63	88	40	5700	3,2	SNHU 1204	964,70	**125**		
A491.160.R.09-12	160	9	8	63	98	40	5000	3,2	SNHU 1204			975,20	**160** [1]
A491.160.R.14-12	160	14	8	63	98	40	5000	3,2	SNHU 1204	1.133,00	**160** [1]		

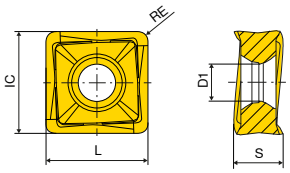
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
32	5,26	**054**			11,89	**128**			4,38	**303**	3,14	**859**	131,90	**193**
40	5,26	**054**	3,91	**040**	11,89	**128**	12,48	**151**	4,38	**303**	3,14	**859**	131,90	**193**
50 - 160	5,26	**054**			11,89	**128**			4,38	**303**	3,14	**859**	131,90	**193**

15

SNHU

Designation	IC	L	S	D1
	mm	mm	mm	mm
SNHU 1204..	12,2	12,2	5,00	4,4



SNHU

ISO	RE	-M50 CTCP230		-M50 CTPP235		-F50 CTPM240		-M50 CTPM240		-F40 CTPM245	
		-M50 DCX1230		-M50 DPX1235		-F50 DPX2240		-M50 DPX2240			
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
		SNHU 1B/61		SNHU 1B/61		SNHU 1B/61		SNHU 1B/61		SNHU NEW 1H/17	
		Article no. 51 100 ...		Article no. 51 100 ...		Article no. 51 102 ...		Article no. 51 100 ...		Article no. 51 128 ...	
	mm	EUR		EUR		EUR		EUR		EUR	
120408ER	0,8									32,97	45800
120408SR	0,8	26,81	008	26,81	108	26,81	408	26,81	408		
120412SR	1,2			26,81	112	26,81	412				
120416SR	1,6			26,81	116	26,81	416				
120420SR	2,0			26,81	120	26,81	420				
Steel		●		●		○		○		●	
Stainless steel		○		○		●		●		●	
Cast iron											
Non ferrous metals											
Heat resistant alloys											
hardened materials											

SNHU

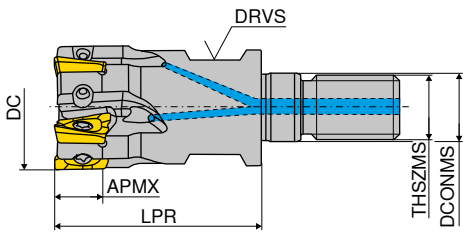
ISO	RE	-R50 CTCK215		-R50 CTPK220		-F10 CTWN215		-F40 CTC5240		-F40 CTCS245	
		-R50 DCX3215		-R50 DPX3220		-F10 CWK4615					
		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN		DRAGONSKIN	
		SNHU 1B/61		SNHU 1B/61		SNHU 1B/61		SNHU NEW 1H/D4		SNHU NEW 1H/D4	
		Article no. 51 103 ...		Article no. 51 103 ...		Article no. 51 101 ...		Article no. 51 128 ...		Article no. 51 128 ...	
	mm	EUR		EUR		EUR		EUR		EUR	
120408ER	0,8							32,97	15800	32,97	55800
120408FR	0,8					26,81	358				
120408SR	0,8	26,81	508	26,81	608						
120412FR	1,2					26,81	362				
120412SR	1,2	26,81	512								
120416FR	1,6					26,81	366				
120416SR	1,6	26,81	516								
120420FR	2,0					26,81	370				
120420SR	2,0	26,81	520								
Steel		○		○							
Stainless steel											
Cast iron		●		●		○					
Non ferrous metals						●					
Heat resistant alloys								●		●	
hardened materials											

Milling guide

Starting Parameter	→ 151	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 151

MaxiMill – Screw in cutter G 211-07



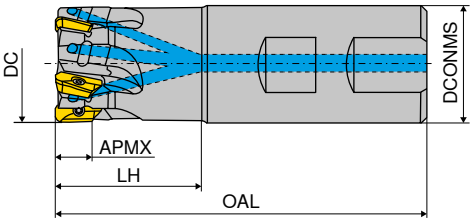




Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 751 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		EUR	
G211.16.R.04-07	16	4	6	27	8,5	M8	10	50400	1	XD.T 0703	268,00	016
G211.20.R.05-07	20	5	6	33	10,5	M10	15	44280	1	XD.T 0703	299,00	020
G211.25.R.06-07	25	6	6	35	12,5	M12	17	39480	1	XD.T 0703	348,80	025
G211.32.R.08-07	32	8	6	35	17,0	M16	24	36240	1	XD.T 0703	379,80	032

MaxiMill – End milling cutter C 211-07





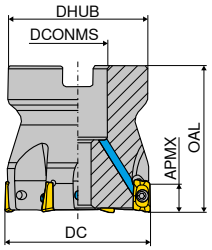


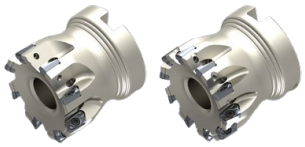


Designation	DC	ZNF	APMX	OAL	LH	DCONMS	RPMX	torque moment	Insert	A 2B/40 Article no. 50 752 ...		B 2B/40 Article no. 50 752 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
C211.10.R.01-07-A-20	10	1	6	61,0	20	10	72000	1	XD.T 0703	212,00	010		
C211.12.R.02-07-A-20	12	2	6	66,5	20	12	66600	1	XD.T 0703	243,00	012		
C211.16.R.04-07-A/B-25	16	4	6	74,5	25	16	50400	1	XD.T 0703	268,00	016	268,00	216
C211.16.R.03-07-A-32-165	16	3	6	165,0	32	16	17760	1	XD.T 0703	249,20	116		
C211.20.R.05-07-A/B-25	20	5	6	77,0	25	20	44280	1	XD.T 0703	299,00	020	299,00	220
C211.20.R.04-07-A-40-200	20	4	6	200,0	40	20	12600	1	XD.T 0703	280,30	120		
C211.25.R.06-07-A/B20-32	25	6	6	84,0	32	20	39840	1	XD.T 0703	348,80	025	348,80	225
C211.25.R.05-07-A20-50-225	25	5	6	225,0	50	20	11280	1	XD.T 0703	311,50	125		
C211.32.R.08-07-A/B25-40	32	8	6	98,0	40	25	36240	1	XD.T 0703	379,80	032	379,80	232

MaxiMill – Shell mill A 211-07





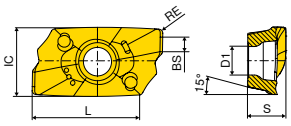


Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 753 ...		2B/40 Article no. 50 754 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
A211.32.R.06-07	32	6	6	40	16	38	36240	1	XD.T 0703	317,90	**032**		
A211.32.R.08-07	32	8	6	40	16	38	36240	1	XD.T 0703			355,10	**032**
A211.40.R.08-07	40	8	6	40	16	38	33240	1	XD.T 0703	392,50	**040**		
A211.40.R.10-07	40	10	6	40	16	38	33240	1	XD.T 0703			429,90	**040**
A211.50.R.10-07	50	10	6	40	22	43	30480	1	XD.T 0703	467,20	**050**		
A211.50.R.12-07	50	12	6	40	22	43	30480	1	XD.T 0703			504,50	**050**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
10 - 32	5,26	**051**			10,22	**124**			4,38	**303**	3,18	**137**	118,90	**191**
32	5,26	**051**	3,91	**040**	10,22	**124**	12,48	**151**	4,38	**303**	3,18	**137**	118,90	**191**
40 - 50	5,26	**051**			10,22	**124**			4,38	**303**	3,18	**137**	118,90	**191**

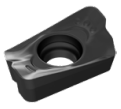
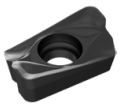
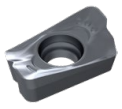
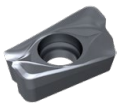
XDKT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDKT 0703..	4,9	2,5	7,8	1,2	3,18

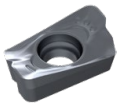
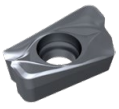
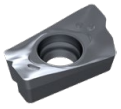


XDKT

XDKT

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 033 ...	Article no. 51 036 ...	Article no. 51 033 ...	Article no. 51 036 ...
	mm	EUR	EUR	EUR	EUR
070304SR	0,4	11,56 004	11,56 004	11,56 104	11,56 104
070308SR	0,8	11,56 008	11,56 008	11,56 108	11,56 108
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDKT

		-F50 CTPM240	-M50 CTPM240	-F40 CTPM245	-F20 CTWN215	-F40 CTC5240	-F40 CTCS245
		-F50 DPX2240	-M50 DPX2240	-F40 DPX2245	-F20 CWK4615	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
							
		XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1H/17	1A/90	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 033 ...	Article no. 51 036 ...	Article no. 51 112 ...	Article no. 50 507 ...	Article no. 50 498 ...	Article no. 51 112 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR
070304ER	0,4			13,81 454		13,81 544	
070304FR	0,4				13,31 504		
070304SR	0,4	11,56 404	11,56 404				
070308ER	0,8			13,81 458		13,81 548	13,81 558
070308FR	0,8				13,31 508		
070308SR	0,8	11,56 408	11,56 408				
Steel		○	○	●			
Stainless steel		●	●	●			
Cast iron					○		
Non ferrous metals					●		
Heat resistant alloys						●	●
hardened materials							

15

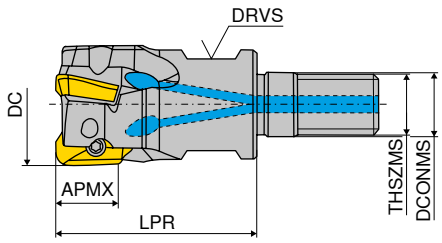
Milling guide

Machining strategy	→ 152	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 152
Starting Parameter	→ 152	Correction of the tooth load f_z	→ 157

MaxiMill – Screw in cutter G 211-11

▲ Insert radius > 1,6 mm: Modify cutter body





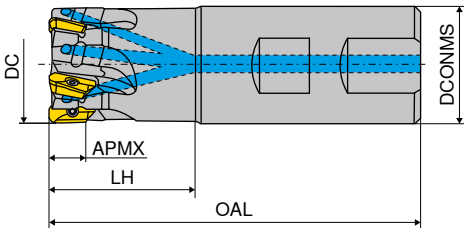


Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 736 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		EUR	
G211.16.R.02-11	16	2	10	27	8,5	M8	10	42000	1,2	XD.T 11T3	230,50	016
G211.20.R.03-11	20	3	10	33	10,5	M10	15	36900	1,2	XD.T 11T3	261,70	020
G211.25.R.03-11	25	3	10	35	12,5	M12	17	33200	1,2	XD.T 11T3	274,10	12500
G211.25.R.04-11	25	4	10	35	12,5	M12	17	33200	1,2	XD.T 11T3	292,90	025
G211.32.R.04-11	32	4	10	35	17,0	M16	24	30200	1,2	XD.T 11T3	305,30	13200
G211.32.R.05-11	32	5	10	35	17,0	M16	24	30200	1,2	XD.T 11T3	324,10	032
G211.40.R.06-11	40	6	10	35	17,0	M16	27	27700	1,8	XD.T 11T3	355,10	040

MaxiMill – End milling cutter C 211-11

▲ Insert radius > 1,6 mm: Modify cutter body







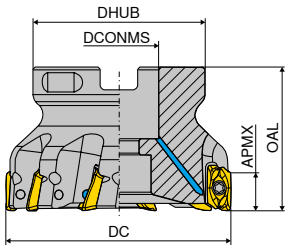


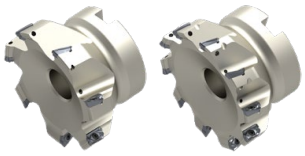
Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	RPMX	torque moment	Insert	A 2B/40 Article no. 50 737 ...		B 2B/40 Article no. 50 737 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
C211.12.R.01-11-B-20	12	1	10	75	20	16	55000	1,2	XD.T 11T3			205,60	012
C211.16.R.02-11-A/B-25	16	2	10	75	25	16	42000	1,2	XD.T 11T3	230,50	116	230,50	016
C211.16.R.02-11-A15-32-165	16	2	10	165	32	15	14800	1,2	XD.T 11T3	230,50	316		
C211.16.R.02-11-A-32-165	16	2	10	165	32	16	14800	1,2	XD.T 11T3	230,50	216		
C211.20.R.03-11-A-25	20	3	10	77	25	20	36900	1,2	XD.T 11T3	261,70	120		
C211.20.R.02-11-B-25	20	2	10	77	25	20	36900	1,2	XD.T 11T3			243,00	02002
C211.20.R.02-11-A-25	20	2	10	77	25	20	36900	1,2	XD.T 11T3	243,00	12002		
C211.20.R.03-11-B-25	20	3	10	77	25	20	36900	1,2	XD.T 11T3			261,70	020
C211.20.R.03-11-A-32-165	20	3	10	165	32	20	15800	1,2	XD.T 11T3	261,70	320		
C211.20.R.02-11-A-40-200	20	2	10	200	40	20	10500	1,2	XD.T 11T3	243,00	420		
C211.20.R.02-11-A19-40-200	20	2	10	200	40	19	10500	1,2	XD.T 11T3	243,00	620		
C211.25.R.03-11-A/B-32	25	3	10	90	32	25	33200	1,2	XD.T 11T3	274,20	625	274,20	725
C211.25.R.04-11-A/B-32	25	4	10	90	32	25	33200	1,2	XD.T 11T3	292,90	125	292,90	025
C211.25.R.04-11-A-40-165	25	4	10	165	40	25	19900	1,2	XD.T 11T3	292,90	325		
C211.25.R.03-11-A-50-225	25	3	10	225	50	25	9400	1,2	XD.T 11T3	274,20	425		
C211.25.R.02-11-A-50-225	25	2	10	225	50	25	9400	1,2	XD.T 11T3	255,60	02502		
C211.25.R.03-11-A24-50-225	25	3	10	225	50	24	9400	1,2	XD.T 11T3	274,20	825		
C211.32.R.04-11-A-40	32	4	10	102	40	32	30200	1,2	XD.T 11T3	305,30	13204		
C211.32.R.05-11-B5-40	32	5	10	102	40	25	30200	1,2	XD.T 11T3			324,10	73200
C211.32.R.04-11-B-25	32	4	10	102	40	32	30200	1,2	XD.T 11T3			305,30	83200
C211.32.R.04-11-A25-40	32	4	10	102	40	25	30200	1,2	XD.T 11T3	305,30	53204		
C211.32.R.05-11-A/B-40	32	5	10	102	40	32	30200	1,2	XD.T 11T3	324,10	132	324,10	032
C211.32.R.05-11-A-50-165	32	5	10	165	50	32	20900	1,2	XD.T 11T3	324,10	332		
C211.32.R.04-11-A-64-250	32	4	10	250	64	32	8500	1,2	XD.T 11T3	305,30	432		
C211.40.R.06-11-B32-50	40	6	10	110	50	32	27700	1,8	XD.T 11T3			355,10	04000
C211.40.R.06-11-B-50	40	6	10	122	50	40	27700	1,8	XD.T 11T3			355,10	14000

MaxiMill – Shell mill A 211-11

▲ Insert radius > 1,6 mm: Modify cutter body







Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 738 ...		2B/40 Article no. 50 739 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
A211.40.R.04-11	40	4	10	40	16	38	27700	1,8	XD.T 11T3	317,90	**040**		
A211.40.R.06-11	40	6	10	40	16	38	27700	1,8	XD.T 11T3			355,10	**040**
A211.50.R.05-11	50	5	10	40	22	43	25400	1,8	XD.T 11T3	373,80	**050**		
A211.50.R.08-11	50	8	10	40	22	43	25400	1,8	XD.T 11T3			430,00	**050**
A211.63.R.06-11	63	6	10	40	22	48	23300	1,8	XD.T 11T3	430,00	**063**		
A211.63.R.10-11	63	10	10	40	22	48	23300	1,8	XD.T 11T3			504,70	**063**
A211.80.R.07-11	80	7	10	50	27	58	21300	1,8	XD.T 11T3	486,10	**080**		
A211.80.R.10-11	80	10	10	50	27	58	21300	1,8	XD.T 11T3			542,10	**180**
A211.100.R.08-11	100	8	10	50	32	78	19600	1,8	XD.T 11T3	542,10	**10000**		
A211.125.R.10-11	125	10	10	63	40	88	17900	1,8	XD.T 11T3	591,90	**12500**		

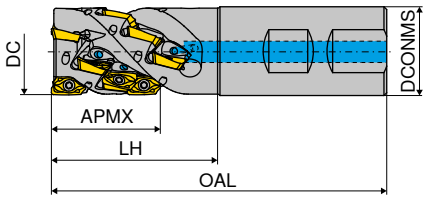
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
12	4,76	**043**			10,20	**125**			4,38	**303**	2,57	**116**	118,90	**191**
16 - 32	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**128**	118,90	**191**
40	4,76	**043**	3,91	**040**	10,20	**125**	12,48	**151**	4,38	**303**	4,09	**131**	118,90	**191**
50	4,76	**043**	4,24	**050**	10,20	**125**	17,14	**154**	4,38	**303**	4,09	**131**	118,90	**191**
63 - 125	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**131**	118,90	**191**

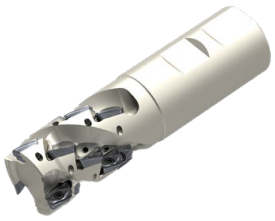
15

MaxiMill – Extended flute cutter C 211-11K

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth







B

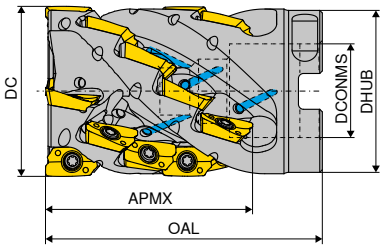
Designation	DC	ZNF	APMX	OAL	LH	DCONMS	ZEFP	ZNP	torque moment	Insert	2B/40 Article no. 50 758 ... EUR	
	mm		mm	mm	mm	mm			Nm			
C211.25.R.02K3-11-B-40	25	2	27,0	97	40	25	6	3	1,2	XD.T 11T3	635,30	**025**
C211.25.R.02K4-11-B-50	25	2	37,0	107	50	25	8	4	1,2	XD.T 11T3	672,60	**125**
C211.25.R.02K5-11-B-60	25	2	45,5	117	60	25	10	5	1,2	XD.T 11T3	717,40	**225** 1)
C211.32.R.02K4-11-B-50	32	2	37,0	111	50	32	8	4	1,2	XD.T 11T3	696,80	**032**
C211.32.R.03K5-11-B-60	32	3	45,5	121	60	32	15	5	1,2	XD.T 11T3	840,70	**132**
C211.40.R.03K4-11-B32-50	40	3	37,0	110	50	32	12	4	1,8	XD.T 11T3	799,60	**040**
C211.40.R.04K5-11-B32-60	40	4	45,5	120	60	32	20	5	1,8	XD.T 11T3	964,00	**140**

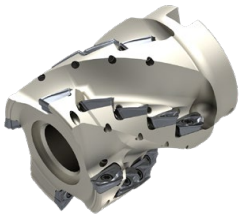
1) only for profile milling

MaxiMill – Extended flute cutter A 211-11K

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth







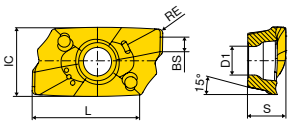
Designation	DC	ZNF	APMX	ZEFP	ZNP	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	2B/40 Article no. 50 757 ... EUR	
	mm		mm			mm	mm	mm	Nm			
A211.40.R.03K4-11	40	3	37,0	12	4	56	16	38	1,8	XD.T 11T3	799,60	**040**
A211.40.R.04K4-11	40	4	37,0	16	4	55	16	38	1,8	XD.T 11T3	874,20	**140**
A211.40.R.04K5-11	40	4	45,5	20	5	65	16	38	1,8	XD.T 11T3	964,00	**240** 1)
A211.50.R.04K5-11	50	4	45,5	20	5	65	22	43	1,8	XD.T 11T3	1.054,00	**150**
A211.50.R.05K5-11	50	5	45,5	25	5	65	22	43	1,8	XD.T 11T3	1.148,00	**050**
A211.50.R.05K6-11	50	5	54,5	30	6	74	22	43	1,8	XD.T 11T3	1.258,00	**250** 1)

1) only for profile milling

Spare parts	2A/28  Cylindrical screw Article no. 70 950 ... EUR		Y7 TORX® blade Article no. 80 950 ... EUR		Y7  Key D Article no. 80 950 ... EUR		2A/28  Molykote Article no. 70 950 ... EUR		2A/28  Clamping screw Article no. 70 950 ... EUR		2A/28  Socket head screw Article no. 70 950 ... EUR		Y7  Torque screwdriver Article no. 80 950 ... EUR	
25 (50758...)			4,76	**043**	10,20	**125**	4,38	**303**	4,09	**128**			118,90	**191**
32 - 40 (50758...)			4,76	**043**	10,20	**125**	4,38	**303**	4,09	**131**			118,90	**191**
40 (50757...)	9,36	**001**	4,76	**043**	10,20	**125**	4,38	**303**	4,09	**131**	3,14	**179**	118,90	**191**
50 (50757...)	11,50	**002**	4,76	**043**	10,20	**125**	4,38	**303**	4,09	**131**	5,44	**180**	118,90	**191**

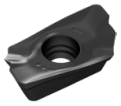
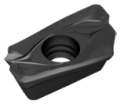
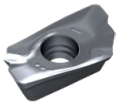
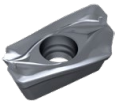
XDKT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDKT 11T302..	6,8	2,8	10,6	2	3,80
XDKT 11T304..	6,8	2,8	10,6	1,8	3,80
XDKT 11T308..	6,8	2,8	10,6	1,4	3,80
XDKT 11T312..	6,8	2,8	10,6	1,4	3,80
XDKT 11T316..	6,8	2,8	10,6	1,4	3,80
XDKT 11T320..	6,8	2,8	10,6	1,4	3,80
XDKT 11T325..	6,8	2,8	10,6	1,4	3,80
XDKT 11T332..	6,8	2,8	10,6	-	3,80
XDKT 11T332..	6,8	2,8	10,6	1,4	3,80
XDKT 11T332..	6,8	2,8	10,6	0,8	3,80
XDKT 11T340..	6,8	2,8	10,6	-	3,80

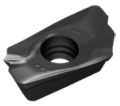
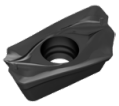
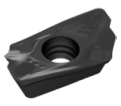
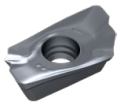
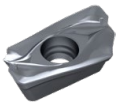
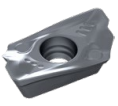


XDKT

XDKT

	-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
	-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	XDKT	XDKT	XDKT	XDKT
	1B/61	1B/61	1B/61	1B/61
ISO RE	Article no. 51 034 ...	Article no. 51 037 ...	Article no. 51 034 ...	Article no. 51 037 ...
mm	EUR	EUR	EUR	EUR
11T308SR 0,8	14,06 258	14,06 258	14,06 058	14,06 058
Steel	●	●	●	●
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

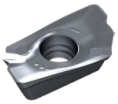
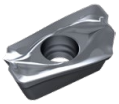
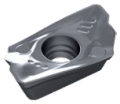
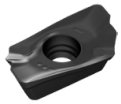
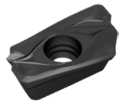
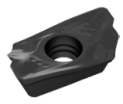
XDKT

	-F50 CTCP230	-M50 CTCP230	-R50 CTCP230	-F50 CTPP235	-M50 CTPP235	-R50 CTPP235
	-F50 DCX1230	-M50 DCX1230	-R50 DCX1230	-F50 DPX1235	-M50 DPX1235	-R50 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
	1B/61	1B/61	1B/61	1B/61	1B/61	1B/61
ISO RE	Article no. 51 034 ...	Article no. 51 037 ...	Article no. 51 039 ...	Article no. 51 034 ...	Article no. 51 037 ...	Article no. 51 039 ...
mm	EUR	EUR	EUR	EUR	EUR	EUR
11T304SR 0,4	14,06 004	14,06 004	14,06 004	14,06 104	14,06 104	14,06 104
11T308SR 0,8	14,06 008	14,06 008	14,06 008	14,06 108	14,06 108	14,06 108
11T312SR 1,2		14,06 012			14,06 112	
11T320SR 2,0	14,06 020 1)	14,06 020 1)	14,06 020 1)	14,06 120 1)	14,06 120 1)	14,06 120 1)
11T325SR 2,5	14,06 025 1)	14,06 025 1)	14,06 025 1)	14,06 125 1)	14,06 125 1)	14,06 125 1)
11T332SR 3,2				14,06 13200		
11T340SR 4,0				14,06 14000		
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

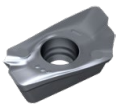
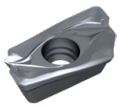
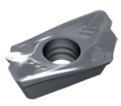
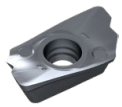
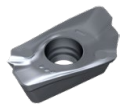
1) Insert radius > 1.6 mm: Modify cutter body

15

XDKT

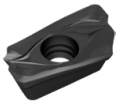
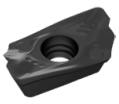
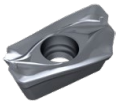
		-F50 CTPM225		-M50 CTPM225		-R50 CTPM225		-F50 CTCM235		-M50 CTCM235		-R50 CTCM235	
		-F50 DPX2225		-M50 DPX2225		-R50 DPX2225		-F50 DCX2235		-M50 DCX2235		-R50 DCX2235	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
													
		XDKT		XDKT		XDKT		XDKT		XDKT		XDKT	
		1B/61		1B/61		1B/61		1B/61		1B/61		1B/61	
ISO	RE	Article no. 51 034 ...		Article no. 51 037 ...		Article no. 51 039 ...		Article no. 51 034 ...		Article no. 51 037 ...		Article no. 51 039 ...	
	mm	EUR		EUR		EUR		EUR		EUR		EUR	
11T308SR	0,8	14,06	208	14,06	208	14,06	208	14,06	308	14,06	308	14,06	308
Steel		○		○		○		○		○		○	
Stainless steel		●		●		●		●		●		●	
Cast iron													
Non ferrous metals													
Heat resistant alloys													
hardened materials													

XDKT

		-F50 CTPM240		-M50 CTPM240		-R50 CTPM240		-F40 CTPM245		-F50 CTPM245	
		-F50 DPX2240		-M50 DPX2240		-R50 DPX2240		-F40 DPX2245		-F50 DPX2245	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
											
		XDKT		XDKT		XDKT		XDKT		XDKT	
		1B/61		1B/61		1B/61		1H/17		1H/17	
ISO	RE	Article no. 51 034 ...		Article no. 51 037 ...		Article no. 51 039 ...		Article no. 51 113 ...		Article no. 51 034 ...	
	mm	EUR		EUR		EUR		EUR		EUR	
11T304ER	0,4							18,09	454		
11T304SR	0,4			14,06	404						
11T308ER	0,8							18,09	458		
11T308SR	0,8	14,06	408	14,06	408	14,06	408			18,09	458
11T312ER	1,2							18,09	462		
11T312SR	1,2	14,06	412	14,06	412	14,06	412				
11T316ER	1,6							18,09	466		
11T320ER	2,0							18,09	470 1)		
11T320SR	2,0	14,06	420 1)	14,06	420 1)	14,06	420 1)				
11T325ER	2,5							18,09	475 1)		
11T332ER	3,2							18,09	482 1)		
11T332SR	3,2	14,06	432 1)	14,06	432 1)	14,06	432 1)				
11T340ER	4,0							18,09	490 1)		
Steel		○		○		○		●		●	
Stainless steel		●		●		●		●		●	
Cast iron											
Non ferrous metals											
Heat resistant alloys											
hardened materials											

1) Insert radius > 1.6 mm: Modify cutter body

XDKT

	-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-F20 CTWN215	-F40 CTC5240	-F40 CTCS245	-R60 CTP6215
	-M50 DCX3215	-R50 DCX3215	-M50 DPX3220	-F20 CWK4615	-F40 HCF5240		-R60 CCN6215
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	
							
	XDKT	XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
	1B/61	1B/61	1B/61	1A/90	1H/D4	NEW 1H/D4	1B/61
ISO	Article no. 51 037 ...	Article no. 51 039 ...	Article no. 51 037 ...	Article no. 50 478 ...	Article no. 50 463 ...	Article no. 51 113 ...	Article no. 50 464 ...
RE mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
11T302FR 0,2				17,67 502			
11T304ER 0,4					18,09 504		
11T304FR 0,4				17,67 504			
11T304SR 0,4	14,06 504						
11T308ER 0,8					18,09 500	18,09 558	
11T308FR 0,8				17,67 508			
11T308SR 0,8	14,06 508	14,06 508	14,06 608				18,17 300
11T312ER 1,2					18,09 512	18,09 562	
11T316ER 1,6					18,09 516	18,09 566	
11T320ER 2,0					18,09 520 1)	18,09 570	
11T320FR 2,0				17,67 520 1)			
11T325ER 2,5					18,09 525 1)	18,09 57500 1)	
11T325FR 2,5				17,67 525 1)			
11T332ER 3,2					18,09 532 1)	18,09 582	
11T340ER 4,0					18,09 540 1)	18,09 59000 1)	
Steel	○	○	○				
Stainless steel							
Cast iron	●	●	●	○			●
Non ferrous metals				●			
Heat resistant alloys					●	●	
hardened materials							●

1) Insert radius > 1.6 mm: Modify cutter body

Milling guide

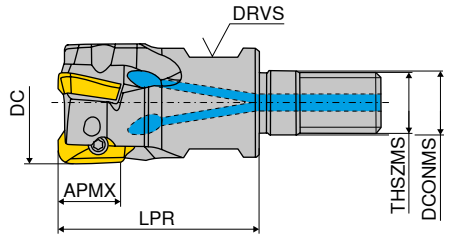
Machining strategy	→ 153	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 153
Starting Parameter	→ 155	Correction of the tooth load f_z	→ 157

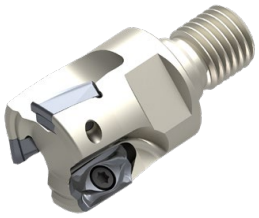
15

MaxiMill – Screw in cutter G 211-15

▲ Insert radius > 2,5 mm: Modify cutter body





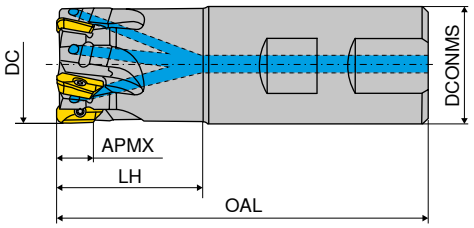


Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 746 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		EUR	
G211.25.R.02-15	25	2	14	35	12,5	M12	17	26560	3,2	XD.T 1505	264,70	025
G211.32.R.03-15	32	3	14	35	17,0	M16	24	30200	3,2	XD.T 1505	294,70	032
G211.40.R.04-15	40	4	14	40	17,0	M16	27	27700	3,2	XD.T 1505	325,00	040

MaxiMill – End milling cutter C 211-15

▲ Insert radius > 2,5 mm: Modify cutter body





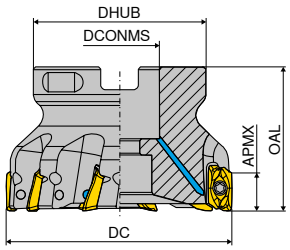


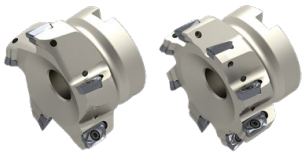
Designation	DC	ZNF	APMX	OAL	LH	DCONMS	RPMX	torque moment	Insert	A 2B/40 Article no. 50 747 ...		B 2B/40 Article no. 50 747 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
C211.25.R.02-15-B20-32	25	2	14	83	32	20	26560	3,2	XD.T 1505			264,70	125
C211.25.R.02-15-B/A-32	25	2	14	90	32	25	26560	3,2	XD.T 1505	264,70	225	264,70	025
C211.25.R.02-15-A-50-225	25	2	14	225	50	25	7520	3,2	XD.T 1505	246,70	325		
C211.32.R.03-15-B25-40	32	3	14	96	40	25	22160	3,2	XD.T 1505			294,70	132
C211.32.R.03-15-A-40	32	3	14	103	40	32	24160	3,2	XD.T 1505	294,70	232		
C211.32.R.03-15-B-40	32	3	14	103	40	32	24160	3,2	XD.T 1505			294,70	032
C211.32.R.03-15-A-63-250	32	3	14	250	63	32	6800	3,2	XD.T 1505	276,80	332		
C211.40.R.04-15-A-50	40	4	14	110	50	32	22160	3,2	XD.T 1505	325,00	240		
C211.40.R.04-15-B32-50	40	4	14	110	50	32	22160	3,2	XD.T 1505			325,00	040
C211.40.R.03-15-A-50-275	40	3	14	275	50	32	6120	3,2	XD.T 1505	306,70	340		

MaxiMill – Shell mill A 211-15

▲ Insert radius > 2,5 mm: Modify cutter body







Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 748 ...		2B/40 Article no. 50 749 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
A211.40.R.03-15	40	3	14	40	16	38	22160	3,2	XD.T 1505	288,80	**040**		
A211.40.R.04-15	40	4	14	40	16	38	22160	3,2	XD.T 1505			325,00	**040**
A211.50.R.03-15	50	3	14	40	22	43	20320	3,2	XD.T 1505	342,90	**050**		
A211.50.R.05-15	50	5	14	40	22	43	20320	3,2	XD.T 1505			379,00	**050**
A211.63.R.04-15	63	4	14	45	22	48	18640	3,2	XD.T 1505	415,00	**063**		
A211.63.R.06-15	63	6	14	45	22	48	18640	3,2	XD.T 1505			451,50	**063**
A211.80.R.05-15	80	5	14	50	27	58	17040	3,2	XD.T 1505	469,20	**080**		
A211.80.R.08-15	80	8	14	50	27	58	17040	3,2	XD.T 1505			505,20	**080**
A211.100.R.06-15	100	6	14	50	32	78	15680	3,2	XD.T 1505	523,50	**100**		
A211.100.R.10-15	100	10	14	50	32	78	15680	3,2	XD.T 1505			559,50	**100**
A211.125.R.07-15	125	7	14	63	40	88	14320	3,2	XD.T 1505	553,40	**125**		
A211.125.R.11-15	125	11	14	63	40	88	14320	3,2	XD.T 1505			589,50	**125**
A211.160.R.08-15	160	8	14	63	40	93	13200	3,2	XD.T 1505	775,30	**160**		
A211.160.R.12-15	160	12	14	63	40	93	13200	3,2	XD.T 1505			811,40	**160**

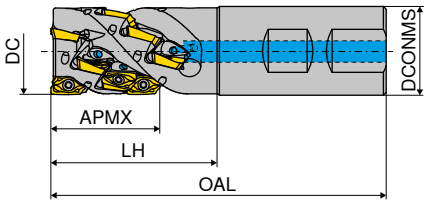
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7  Clamping key – T Article no. 80 397 ...		Y7  Key D Article no. 80 950 ...		2A/28  Power Screw Article no. 70 950 ...		2A/28  Molykote Article no. 70 950 ...		2A/28  Clamping screw Article no. 70 950 ...		Y7  Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
25 - 32	5,26	**054**			11,89	**128**			4,38	**303**	3,18	**839**	131,90	**193**
40	5,26	**054**	3,91	**040**	11,89	**128**	12,48	**151**	4,38	**303**	3,18	**839**	131,90	**193**
50	5,26	**054**	4,24	**050**	11,89	**128**	17,14	**154**	4,38	**303**	3,18	**839**	131,90	**193**
63 - 160	5,26	**054**			11,89	**128**			4,38	**303**	3,18	**839**	131,90	**193**

15

MaxiMill – Extended flute cutter C 211-15K

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







B

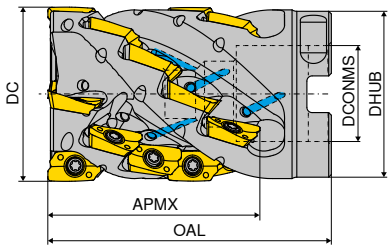
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	ZEFP	ZNP	torque moment Nm	Insert	NEW 2B/40 Article no. 50 782 ... EUR	
C211.40.R.02K3-15-B32-60	40	2	38,0	120	60	32	6	3	3,2	XD.T 1505	773,60	**04002**
C211.50.R.03K4-15-B40-64	50	3	50,5	134	64	40	12	4	3,2	XD.T 1505	904,40	**05003**

Spare parts DC	Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR	
40 - 50	9,15	**120**	3,18	**839**

MaxiMill – Extended flute cutter A 211-15K

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows





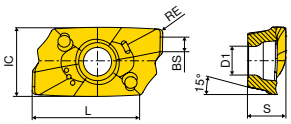


Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	torque moment Nm	Insert	2B/40 Article no. 50 759 ... EUR	
A211.50.R.03K4-15	50	3	50,5	12	4	74	22	43	3,2	XD.T 1505	904,40	**050**
A211.50.R.03K5-15	50	3	63,0	15	5	88	22	43	3,2	XD.T 1505	960,40	**150**
A211.63.R.03K4-15	63	3	50,5	12	4	74	27	58	3,2	XD.T 1505	986,00	**063**
A211.63.R.04K6-15	63	4	75,5	24	6	102	27	58	3,2	XD.T 1505	1.210,00	**163**
A211.80.R.04K5-15	80	4	63,0	20	5	88	32	78	3,2	XD.T 1505	1.216,00	**080**
A211.80.R.05K6-15	80	5	75,5	30	6	102	32	78	3,2	XD.T 1505	1.404,00	**180**

Spare parts DC	2A/28 Cylindrical screw Article no. 70 950 ... EUR		Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Socket head screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
50	11,50	**002**	5,26	**054**	11,89	**128**	4,38	**303**	3,18	**839**	5,44	**180**	131,90	**193**
63	15,95	**003**	5,26	**054**	11,89	**128**	4,38	**303**	3,18	**839**	8,45	**181**	131,90	**193**
80	25,73	**004**	5,26	**054**	11,89	**128**	4,38	**303**	3,18	**839**	11,50	**234**	131,90	**193**

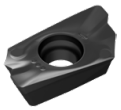
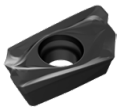
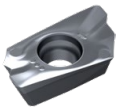
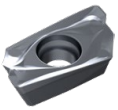
XDKT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDKT 150508..	9,3	4,4	14,8	1,6	5,56
XDKT 150512..	9,3	4,4	14,8	1,6	5,56
XDKT 150516..	9,3	4,4	14,8	1,6	5,56
XDKT 150520..	9,3	4,4	14,8	1,6	5,56
XDKT 150530..	9,3	4,4	14,8	1,6	5,56
XDKT 150532..	9,3	4,4	14,8	1,9	5,56
XDKT 150540..	9,3	4,4	14,8	1,2	5,56

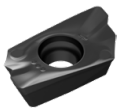
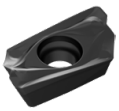
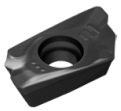
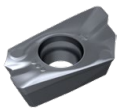
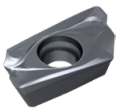
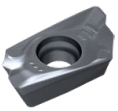


XDKT

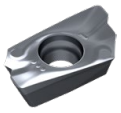
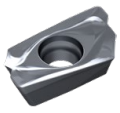
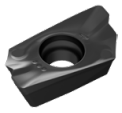
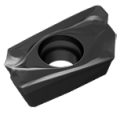
XDKT

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 035 ...	Article no. 51 038 ...	Article no. 51 035 ...	Article no. 51 038 ...
	mm	EUR	EUR	EUR	EUR
150508SR	0,8	18,75 258	18,75 258	18,75 058	18,75 058
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

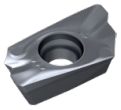
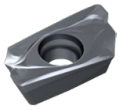
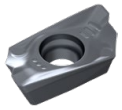
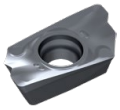
XDKT

		-F50 CTCP230	-M50 CTCP230	-R50 CTCP230	-F50 CTPP235	-M50 CTPP235	-R50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-R50 DCX1230	-F50 DPX1235	-M50 DPX1235	-R50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 035 ...	Article no. 51 038 ...	Article no. 51 040 ...	Article no. 51 035 ...	Article no. 51 038 ...	Article no. 51 040 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR
150508SR	0,8	18,75 008	18,75 008	18,75 008	18,75 108	18,75 108	18,75 108
150512SR	1,2		18,75 012			18,75 112	
150516SR	1,6		18,75 016			18,75 116	
150520SR	2,0			18,75 020		18,75 120	18,75 120
150530SR	3,0		18,75 030			18,75 130	
150540SR	4,0		18,75 040			18,75 140	
Steel		●	●	●	●	●	●
Stainless steel		○	○	○	○	○	○
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

XDKT

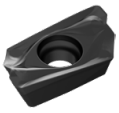
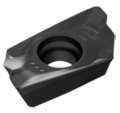
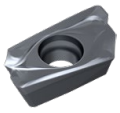
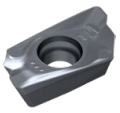
		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-M50 DCX2235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 035 ...	Article no. 51 038 ...	Article no. 51 035 ...	Article no. 51 038 ...
	mm	EUR	EUR	EUR	EUR
150508SR	0,8	18,75 208	18,75 208	18,75 308	18,75 308
Steel		○	○	○	○
Stainless steel		●	●	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDKT

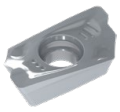
		-F50 CTPM240	-M50 CTPM240	-R50 CTPM240	-F40 CTPM245
		-F50 DPX2240	-M50 DPX2240	-R50 DPX2240	-F40 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1H/17
ISO	RE	Article no. 51 035 ...	Article no. 51 038 ...	Article no. 51 040 ...	Article no. 51 114 ...
	mm	EUR	EUR	EUR	EUR
150508ER	0,8				22,57 458
150508SR	0,8	18,75 408	18,75 408	18,75 408	
150512SR	1,2		18,75 412		
150516SR	1,6		18,75 416		
150530SR	3,0		18,75 430		
150532ER	3,2				22,57 482 1)
150540ER	4,0				22,57 490 1)
150540SR	4,0		18,75 440		
Steel		○	○	○	●
Stainless steel		●	●	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

1) Insert radius >1.6 mm: Modify cutter body

XDKT

		-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F20 CTWN215
		-M50 DCX3215	-R50 DCX3215	-M50 DPX3220	-R50 DPX3220	-F20 CWK4615
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
		XDKT	XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1B/61	1A/90
ISO	RE	Article no. 51 038 ...	Article no. 51 040 ...	Article no. 51 038 ...	Article no. 51 040 ...	Article no. 50 479 ...
	mm	EUR	EUR	EUR	EUR	EUR
150508FR	0,8					22,16 508
150508SR	0,8	18,75 508	18,75 508	18,75 608	18,75 608	
Steel		○	○	○	○	
Stainless steel						
Cast iron		●	●	●	●	○
Non ferrous metals						●
Heat resistant alloys						
hardened materials						

XDKT

		-F40 CTC5240	-F40 CTCS245	-R60 CTP6215
		-F40 HCF5240		-R60 CCN6215
		DRAGONSKIN	DRAGONSKIN	
				
		XDKT	XDKT	XDKT
		1H/D4	NEW 1H/D4	1B/61
ISO	RE	Article no. 50 473 ...	Article no. 51 114 ...	Article no. 50 469 ...
	mm	EUR	EUR	EUR
150508ER	0,8	22,57 508	22,57 558	
150508SR	0,8			18,75 300
150532ER	3,2	22,57 532 [1)]		
150540ER	4,0	22,57 540 [1)]	22,57 59000 [1)]	
Steel				
Stainless steel				
Cast iron				●
Non ferrous metals				
Heat resistant alloys		●	●	
hardened materials				●

1) Insert radius >2.5 mm: Modify cutter body

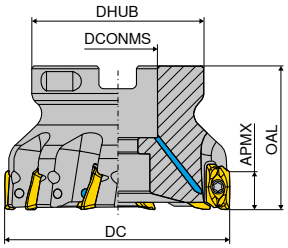
Milling guide

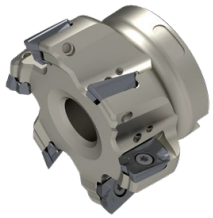
Machining strategy	→ 154	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 154
Starting Parameter	→ 155	Correction of the tooth load f_z	→ 157

15

MaxiMill – Shell mill A 211-20





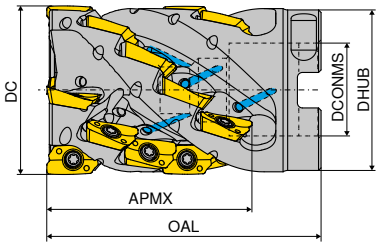


Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	NEW 2B/40 Article no. 50 778 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
A211.63.R.05-20	63	5	19	45	22	48	14400	5	XD.. 2007..	434,10	**06305**
A211.80.R.06-20	80	6	19	50	27	58	12400	5	XD.. 2007..	464,30	**08006**
A211.100.R.07-20	100	7	19	50	32	78	10900	5	XD.. 2007..	498,20	**10007**

MaxiMill – Extended flute cutter A 211-20K

- ZEFP = Number of Inserts
- ZNP = Number of rows





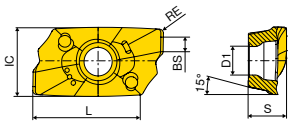


Designation	DC	ZNF	APMX	ZEFP	ZNP	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	NEW 2B/40 Article no. 50 780 ...	
	mm		mm			mm	mm	mm	Nm		EUR	
A211.63.R.04K4-20	63	4	68	16	4	92	27	58	3,2	XD.. 2007..	961,40	**06304**
A211.80.R.05K4-20	80	5	68	20	4	92	32	76	3,2	XD.. 2007..	1.078,00	**08005**

	2A/28		Y7		Y7		2A/28		2A		2A/28		Y7	
	 Cylindrical screw		TORX® blade		Key D		 Molykote		 Clamping screw		 Socket head screw		 Torque screwdriver	
Spare parts DC	**Article no. 70 950 ...**		**Article no. 80 950 ...**		**Article no. 80 950 ...**		**Article no. 70 950 ...**		**Article no. 70 950 ...**		**Article no. 70 950 ...**		**Article no. 80 950 ...**	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
63	15,95	**003**	4,76	**037**	7,52	**106**	4,38	**303**	2,52	**280**	8,45	**181**	131,90	**193**
80	25,73	**004**	4,76	**037**	7,52	**106**	4,38	**303**	2,52	**280**	11,50	**234**	131,90	**193**
100			4,76	**037**	7,52	**106**	4,38	**303**	2,52	**280**			131,90	**193**

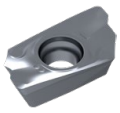
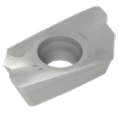
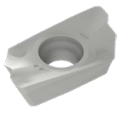
XDKT

Designation	IC	D1	L	S
	mm	mm	mm	mm
XDKT 200708..	12,5	5,5	18,8	6,93
XDKT 200732..	12,5	5,5	18,8	6,82



XDKT

XDKT

		-F40 CTPM245	-F40 CTC5240	-F40 CTCS245
			DRAGONSKIN	DRAGONSKIN
		 XDKT	 XDKT	 XDKT
		NEW 1H/17	NEW 1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 127 ...	Article no. 51 127 ...	Article no. 51 127 ...
	mm	EUR	EUR	EUR
200708ER	0,8	26,69 45800	26,69 15800	26,69 55800
200732ER	3,2		26,69 18200	
Steel		●		
Stainless steel		●		
Cast iron				
Non ferrous metals				
Heat resistant alloys			●	●
hardened materials				

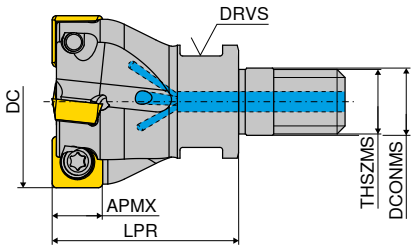
Milling guide

Machining strategy	→ 156	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 156
Starting Parameter	→ 156	Correction of the tooth load f_z	→ 157

15

MaxiMill – Screw in cutter G 490-09



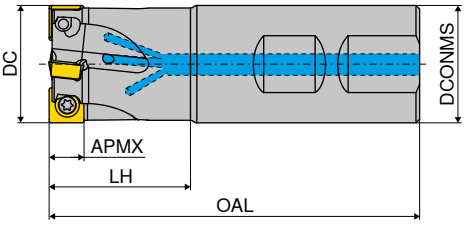




Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 726 ...	
	mm		mm	mm		mm	mm	Nm		EUR	
G490.25.R.03-09	25	3	8	35	M12	12,5	17	3,2	SD.. 09T3..	304,20	025
G490.32.R.04-09	32	4	8	35	M16	17,0	24	3,2	SD.. 09T3..	329,90	032

MaxiMill – End milling cutter C 490-09





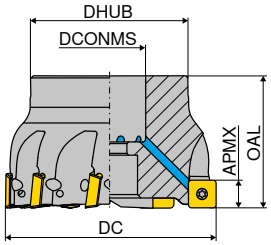


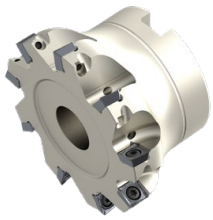


Designation	DC	ZNF	APMX	DCONMS	OAL	LH	torque moment	Insert	A 2B/40 Article no. 50 727 ...		B 2B/40 Article no. 50 727 ...	
	mm		mm	mm	mm	mm	Nm		EUR		EUR	
C490.25.R.03-09-B-32	25	3	8	25	88	32	3,2	SD.. 09T3..			304,20	025
C490.25.R.02-09-A-20	25	2	8	20	165	40	3,2	SD.. 09T3..	280,50	225		
C490.25.R.02-09-A-40-165	25	2	8	25	165	40	3,2	SD.. 09T3..	291,00	125		
C490.32.R.04-09-B-25	32	4	8	25	100	40	3,2	SD.. 09T3..			317,90	132
C490.32.R.04-09-B-40	32	4	8	32	100	40	3,2	SD.. 09T3..			329,90	032

MaxiMill – Shell mill A 490-09



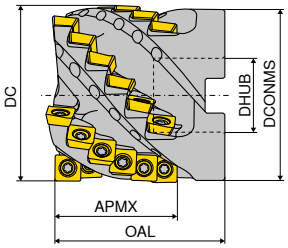


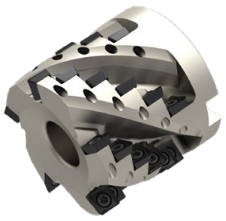


Designation	DC	ZNF	APMX	DHUB	DCONMS $_{H6}$	OAL	torque moment	Insert	2B/40 Article no. 50 728 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
A490.40.R.05-09	40	5	8	38	16	40	3,2	SD.. 09T3..	368,80	040
A490.42.R.06-09	42	6	8	38	16	40	3,2	SD.. 09T3..	394,50	042
A490.50.R.06-09	50	6	8	43	22	40	3,2	SD.. 09T3..	407,50	050
A490.52.R.07-09	52	7	8	43	22	40	3,2	SD.. 09T3..	433,30	052
A490.63.R.07-09	63	7	8	48	22	40	3,2	SD.. 09T3..	446,30	063
A490.66.R.08-09	66	8	8	48	22	40	3,2	SD.. 09T3..	472,10	066
A490.80.R.09-09	80	9	8	58	27	50	3,2	SD.. 09T3..	627,40	080
A490.100.R.10-09	100	10	8	78	32	50	3,2	SD.. 09T3..	685,60	100
A490.160.R.14-09	160	14	8	88	40	62	3,2	SD.. 09T3..	1.013,00	160

MaxiMill – Extended flute cutter A 490K

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows

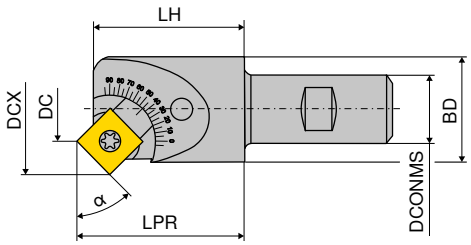




Designation	DC	ZNF	APMX	ZEFP	ZNP	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	2B/40 Article no. 50 761 ...	
	mm		mm			mm	mm	mm	Nm		EUR	
A490.40.R.03K6-09	40	3	41	18	6	55	16	38	3,2	SD.. 09T3..	1.022,00	**040**
A490.50.R.04K6-09	50	4	41	24	6	55	22	48	3,2	SD.. 09T3..	1.237,00	**050**
A490.63.R.05K6-09	63	5	41	30	6	60	27	61	3,2	SD.. 09T3..	1.398,00	**063**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
25 - 32	4,76	**036**			9,28	**113**			4,38	**303**	3,14	**110**	128,60	**192**
40 - 42	4,76	**036**	3,91	**040**	9,28	**113**	12,48	**151**	4,38	**303**	3,14	**110**	128,60	**192**
50 - 160	4,76	**036**			9,28	**113**			4,38	**303**	3,14	**110**	128,60	**192**

Adjustable single angle milling cutter C 4500





B

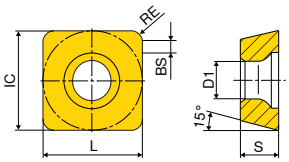
Designation	DC	DCX	ZNF	LPR	DCONMS	LH	BD	torque moment	Insert	2B Article no. 50 668 ...	
	mm	mm		mm	mm	mm	mm	Nm		EUR	
C4500.16.R.01	3,0 - 20,8	20,3 - 23,9	1	33,0 - 35,0	16	32	18,65	3,2	SD.. 09T3..	151,00	**116**

Spare parts Insert	2A Cylindrical screw Article no. 70 950 ...		2A Adjustment wedge Article no. 70 950 ...		Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
SD.. 09T3..	3,38	**709**	15,10	**708**	4,76	**036**	9,28	**113**	4,38	**303**	3,14	**110**	128,60	**192**

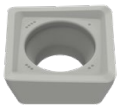
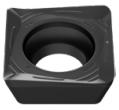
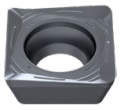
15

SDHT / SDNT

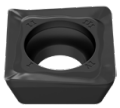
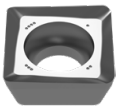
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
SD.T 09T3..	9,52	4,4	9,52	2,5	3,97



SDHT / SDNT

	TCM10	-29 CTCP230	CTPP235	-29 CTPP235	-33 CTPM240	-F50 CTPM245
	CWC10	-29 DCX1230	DPX1235	-29 DPX1235	-33 DPX2240	-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	CERMET					
	SDHT	SDNT	SDNT	SDNT	SDNT	SDNT
	1B/79	1B/61	1B/61	1B/61	1B/61	1H/17
ISO RE mm	Article no. 50 424 ... EUR	Article no. 51 011 ... EUR	Article no. 51 082 ... EUR	Article no. 51 011 ... EUR	Article no. 51 030 ... EUR	Article no. 51 111 ... EUR
09T308ER 0,8			11,61 108			13,00 458
09T308SR 0,8	15,76 900	11,61 008		11,61 108	11,61 408	
Steel	●	●	●	●	○	●
Stainless steel	●	○	○	○	●	●
Cast iron	○					
Non ferrous metals						
Heat resistant alloys						
hardened materials						

SDNT / SDHT

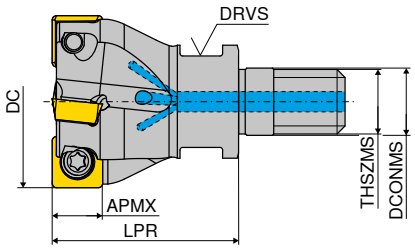
	-31 CTCK215	-27P H216T	-27P AMZ	-27 CTC5240	-M31 CTC5240	-F10 CTCS245
	-31 DCX3215	-27P CWK26	-27P AMZ	-AL HCF5240	-M31 HCF5240	
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	SDNT	SDHT	SDHT	SDHT	SDNT	SDHT
	1B/61	1A/90	1A/90	1H/D4	1H/D4	NEW 1H/D4
ISO RE mm	Article no. 51 029 ... EUR	Article no. 50 424 ... EUR	Article no. 50 424 ... EUR	Article no. 50 496 ... EUR	Article no. 50 425 ... EUR	Article no. 51 125 ... EUR
09T308ER 0,8				21,73 508	13,00 508	21,73 55800
09T308FR 0,8		15,76 550	18,90 650			
09T308SR 0,8	11,61 508					
Steel	○					
Stainless steel						
Cast iron	●	○	○			
Non ferrous metals		●	●			
Heat resistant alloys				●	●	●
hardened materials						

Milling guide

Machining strategy	→ 157+186	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 157+186
Starting Parameter	→ 157	Correction of the tooth load f_z	→ 157

MaxiMill – Screw in cutter G 490-12



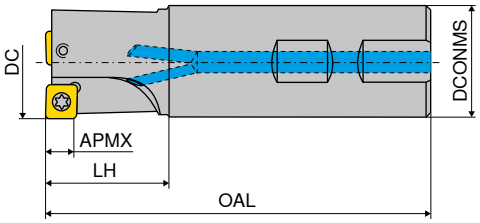




Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 726 ...	
	mm		mm	mm		mm	mm	Nm		EUR	
G490.32.R.03-12	32	3	10,7	35	M16	17	24	3,2	SD.. 1205..	317,80	13200
G490.40.R.04-12	40	4	10,7	40	M16	17	24	3,2	SD.. 1205..	351,10	14000

MaxiMill – End milling cutter C 490-12





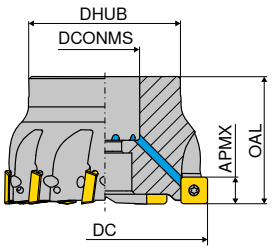


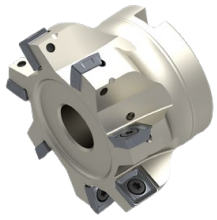


Designation	DC	ZNF	APMX	DCONMS	OAL	LH	torque moment	Insert	2B Article no. 50 703 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
C490.32.R.02	32	2	11	32	110	40	5	SD.. 1205..	210,70	032
C490.32.R.03-12-B-40	32	3	11	32	101	40	5	SD.. 1205..	317,80	13200
C490.40.R.03	40	3	11	32	115	45	5	SD.. 1205..	248,50	040
C490.40.R.04-12-B32-50	40	4	11	32	112	50	5	SD.. 1205..	351,10	14000

MaxiMill – Shell mill A 490-12



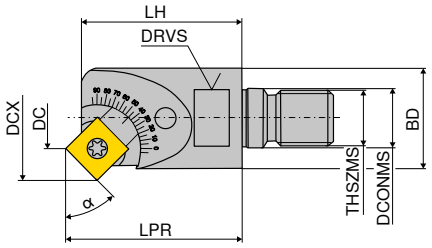




Designation	DC	ZNF	APMX	DHUB	DCONMS	OAL	torque moment	Insert	2B/40 Article no. 50 703 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
A490.40.R.04-12	40	4	11	38	16	40	5	SD.. 1205..	351,10	54000
A490.50.R.05-12	50	5	11	43	22	40	5	SD.. 1205..	389,90	550
A490.63.R.06-12	63	6	11	48	22	40	5	SD.. 1205..	428,90	563
A490.80.R.07-12	80	7	11	58	27	50	5	SD.. 1205..	592,30	580
A490.100.R.08-12	100	8	11	75	32	50	5	SD.. 1205..	650,60	600
A490.125.R.10-12	125	10	11	88	40	63	5	SD.. 1205..	697,30	625

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Power Screw Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
32 - 40	4,76	037			9,95	114			4,38	303	2,52	280	131,90	193
50 - 125	4,76	037	3,91	040	9,95	114	12,48	151	4,38	303	2,52	280	131,90	193

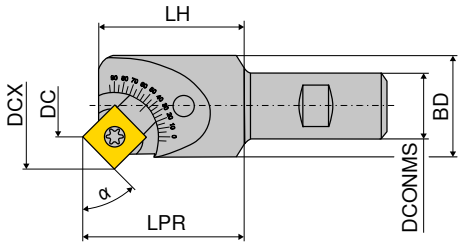
Adjustable single angle milling cutter with threaded shank G 4500





Designation	DC	DCX	ZNF	LPR	THSZMS	DCONMS	LH	BD	DRVS	torque moment	Insert	2B Article no. 55 210 ... EUR	
	mm	mm		mm		mm	mm	mm	mm	Nm			
G4500.20.R.01	7,1 - 31,0	30,5 - 35,45	1	48 - 50	M16	17	46	28,5	24	5	SD.. 1205..	177,20	**020**

Adjustable single angle milling cutter C 4500





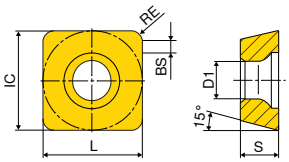
B

Designation	DC	DCX	ZNF	LPR	DCONMS	LH	BD	torque moment	Insert	2B Article no. 50 668 ... EUR	
	mm	mm		mm	mm	mm	mm	Nm			
C4500.20.R.01	3,7 - 27,8	27,3 - 32,2	1	35,9 - 40,5	20	37	25	5	SD.. 1205..	159,40	**020**

	2A		2A		Y7		Y7		2A/28		2A		Y7	
	 Cylindrical screw		 Adjustment wedge		TORX® blade		Key D		 Molykote		 Clamping screw		 Torque screwdriver	
Spare parts	**Article no. 70 950 ...**		**Article no. 70 950 ...**		**Article no. 80 950 ...**		**Article no. 80 950 ...**		**Article no. 70 950 ...**		**Article no. 70 950 ...**		**Article no. 80 950 ...**	
Insert	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
SD.. 1205..	4,29	**706**	13,94	**705**	4,76	**037**	9,95	**114**	4,38	**303**	2,52	**280**	131,90	**193**

SDHW / SDMT / SDHT

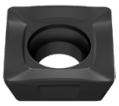
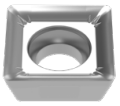
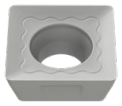
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
SDH. 120508..	12,7	5,5	12,7	2,2	5,00
SDHT 120512..	12,7	5,5	12,7	1,8	5,00
SDHT 120520..	12,7	5,5	12,7	1,0	5,00
SDHT 120525..	12,7	5,5	12,7	1,5	5,00
SDMT 120508..	12,7	5,5	12,7	3,0	5,00
SDMT 1205ZZ..	12,7	5,5	12,7	0,9	5,00



SDHW / SDMT / SDHT

	TCM10	-29 CTCP230	-29 CTPP235	-29 CTPM240	-33 CTPM240	-F50 CTPM245
	CWC10	-29 DCX1230	-29 DPX1235	-29 DPX2240	-33 DPX2240	-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	CERMET SDHW 1B/79	SDMT 1B/61	SDMT 1B/61	SDMT 1B/61	SDHT 1B/61	SDMT 1H/17
ISO / RE	Article no. 50 428 ...	Article no. 51 081 ...	Article no. 51 081 ...	Article no. 51 081 ...	Article no. 51 028 ...	Article no. 51 110 ...
mm	EUR	EUR	EUR	EUR	EUR	EUR
120508ER 0,8						18,43 458
120508SR 0,8	18,75 901					
120512SR 1,2					18,27 412	
120520SR 2,0					18,27 421	
1205ZZSN 0,8		15,76 020	15,76 120	15,26 420		
Steel	●	●	●	○	○	●
Stainless steel	●	○	○	●	●	●
Cast iron	○					
Non ferrous metals						
Heat resistant alloys						
hardened materials						

SDMT / SDHT

	-31 CTCK215	-27P H216T	-27P AMZ	-M31 CTC5240	-F50 CTCS245
	-31 DCX3215	-ALP CWK26	-ALP AMZ	-M31 HCF5240	
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN
					
	SDMT 1B/61	SDHT 1A/90	SDHT 1A/90	SDMT 1H/D4	NEW SDMT 1H/D4
ISO / RE	Article no. 51 059 ...	Article no. 50 426 ...	Article no. 50 426 ...	Article no. 50 580 ...	Article no. 51 110 ...
mm	EUR	EUR	EUR	EUR	EUR
120508ER 0,8				18,43 508	18,43 55800
120508FR 0,8		18,27 555	22,64 655		
120525FR 2,5		18,27 559			
1205ZZSN 0,8	15,26 521				
Steel	○				
Stainless steel					
Cast iron	●	○	○		
Non ferrous metals		●	●		
Heat resistant alloys				●	●
hardened materials					

Milling guide

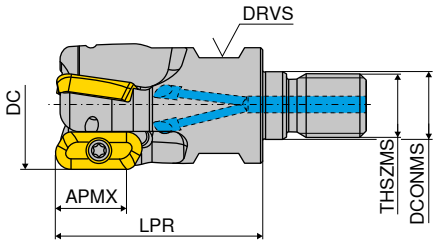
Machining strategy	→ 158+186	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 158+186
Starting Parameter	→ 158		

15

MaxiMill – Screw in cutter 90° G HSC-11

▲ Insert radius > 3.2 mm: Modify cutter body





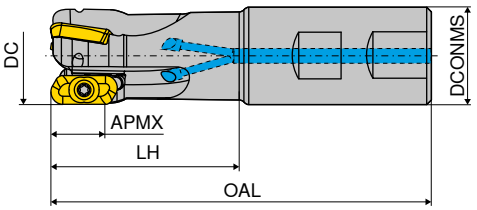


Designation	DC	ZNF	APMX	DCONMS	LPR	THSZMS	RPMX	DRVS	torque moment	Insert	2B/40 Article no. 55 107 ...	
	mm		mm	mm	mm		1/min.	mm	Nm		EUR	
GHSC.16.R.02-11	16	2	10	8,5	27	M8	56000	10	1,8	XDHT 11T3..	267,90	016
GHSC.18.R.02-11	18	2	10	8,5	27	M8	53100	10	1,8	XDHT 11T3..	274,30	018
GHSC.20.R.02-11	20	2	10	10,5	33	M10	50100	15	1,8	XDHT 11T3..	288,40	020
GHSC.25.R.03-11	25	3	10	12,5	35	M12	45000	17	1,8	XDHT 11T3..	324,90	025
GHSC.32.R.03-11	32	3	10	17,0	35	M16	39800	24	1,8	XDHT 11T3..	337,70	032
GHSC.40.R.03-11	40	3	10	17,0	35	M16	35500	24	1,8	XDHT 11T3..	354,50	040

MaxiMill – End milling cutter 90° C HSC-11

▲ Insert radius > 3.2 mm: Modify cutter body







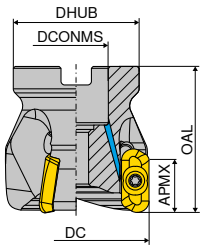


Designation	DC	ZNF	APMX	DCONMS h6	OAL	LH	RPMX	torque moment	Insert	A 2B/40 Article no. 50 675 ...		B 2B/40 Article no. 50 675 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
CHSC.16.R.02-11-B/A-25	16	2	10	16	75	25	56200	1,8	XDHT 11T3..	267,90	016	267,90	416
CHSC.16.R.02-11-A-32	16	2	10	16	165	32	18800	1,8	XDHT 11T3..	267,90	116		
CHSC.18.R.02-11-A-25	18	2	10	20	78	25	56100	1,8	XDHT 11T3..	274,30	018		
CHSC.18.R.02-11-A-32	18	2	10	20	165	32	23900	1,8	XDHT 11T3..	274,30	118		
CHSC.19.R.02-11-A-25	19	2	10	20	78	25	51700	1,8	XDHT 11T3..	280,70	019		
CHSC.19.R.02-11-A-32	19	2	10	20	165	32	25400	1,8	XDHT 11T3..	280,70	119		
CHSC.20.R.02-11-A-32	20	2	10	20	84	32	50100	1,8	XDHT 11T3..	288,40	020		
CHSC.20.R.03-11-B-32	20	3	10	20	84	32	50100	1,8	XDHT 11T3..			327,20	420
CHSC.20.R.02-11-A-40	20	2	10	20	165	40	26700	1,8	XDHT 11T3..	288,40	120		
CHSC.22.R.02-11-A-32	22	2	10	25	91	32	47800	1,8	XDHT 11T3..	296,40	022		
CHSC.22.R.02-11-A-40	22	2	10	25	165	40	30200	1,8	XDHT 11T3..	296,40	122		
CHSC.25.R.02-11-A-40	25	2	10	25	98	40	45000	1,8	XDHT 11T3..	310,40	025		
CHSC.25.R.03-11-A-40	25	3	10	25	98	40	45000	1,8	XDHT 11T3..	324,90	225		
CHSC.25.R.04-11-B-40	25	4	10	25	98	40	45000	1,8	XDHT 11T3..			357,10	425
CHSC.25.R.02-11-A-50	25	2	10	25	165	50	31700	1,8	XDHT 11T3..	310,40	125		
CHSC.25.R.03-11-A-50	25	3	10	25	165	50	31700	1,8	XDHT 11T3..	324,90	325		
CHSC.32.R.03-11-A-50	32	3	10	32	112	50	39800	1,8	XDHT 11T3..	337,70	032		
CHSC.32.R.05-11-B-50	32	5	10	25	112	50	39800	1,8	XDHT 11T3..			426,90	432
CHSC.32.R.03-11-A-63	32	3	10	32	165	63	33400	1,8	XDHT 11T3..	337,70	132		

MaxiMill – Shell mill 90° A HSC-11

▲ Insert radius > 3.2 mm: Modify cutter body







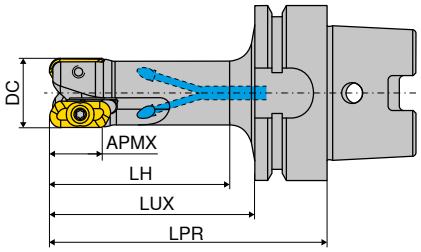
Designation	DC	ZNF	APMX	DCONMS $_{H6}$	DHUB	OAL	RPMX	torque moment	Insert	2B/40 Article no. 50 718 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
AHSC.40.R.04-11	40	4	10	16	38	50	35500	1,8	XDHT 11T3..	451,40	**040**
AHSC.50.R.04-11	50	4	10	22	43	50	31800	1,8	XDHT 11T3..	546,00	**050**
AHSC.63.R.05-11	63	5	10	22	43	50	28300	1,8	XDHT 11T3..	608,00	**063**
AHSC.80.R.05-11	80	5	10	27	58	50	25100	1,8	XDHT 11T3..	632,50	**080**
AHSC.100.R.05-11	100	5	10	32	78	50	22400	1,8	XDHT 11T3..	677,90	**100**

MaxiMill – Milling cutter 90° M HSC-11 with HSK 63-A

▲ balanced to G 6,3

▲ Insert radius > 3.2 mm: Modify cutter body







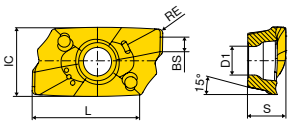
Designation	DC	ZNF	APMX	LPR	LH	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 722 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
MHSC.25.R.03-11-H63A-50	25	3	10	90	50	64	45000	1,8	XDHT 11T3..	774,90	**025**
MHSC.25.R.03-11-H63A-63	25	3	10	100	63	74	42000	1,8	XDHT 11T3..	774,90	**125**
MHSC.32.R.03-11-H63A-63	32	3	10	100	63	74	39800	1,8	XDHT 11T3..	787,80	**032**
MHSC.32.R.03-11-H63A-80	32	3	10	120	80	94	37200	1,8	XDHT 11T3..	787,80	**132**
MHSC.40.R.04-11-H63A-63	40	4	10	100	63	74	35500	1,8	XDHT 11T3..	817,60	**040**
MHSC.40.R.04-11-H63A-80	40	4	10	120	80	94	35500	1,8	XDHT 11T3..	817,60	**140**
MHSC.50.R.04-11-H63A-63	50	4	10	100	63	74	31800	1,8	XDHT 11T3..	831,70	**050**
MHSC.50.R.04-11-H63A-100	50	4	10	140	100	114	31800	1,8	XDHT 11T3..	831,70	**150**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7  Clamping key – T Article no. 80 397 ...		Y7  Key D Article no. 80 950 ...		2A/28  Power Screw Article no. 70 950 ...		2A/28  Molykote Article no. 70 950 ...		2A/28  Clamping screw Article no. 70 950 ...		Y7  Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
16 - 25	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**128**	128,60	**192**
32	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**131**	128,60	**192**
40	4,76	**043**	3,91	**040**	10,20	**125**	12,48	**151**	4,38	**303**	4,09	**131**	128,60	**192**
50 - 63	4,76	**043**	4,24	**050**	10,20	**125**	17,14	**154**	4,38	**303**	4,09	**131**	128,60	**192**
80 - 100	4,76	**043**			10,20	**125**			4,38	**303**	4,09	**131**	128,60	**192**

15

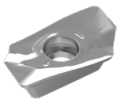
XDKT / XDHT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XD.T 11T302FR	6,8	2,8	10,6	2	3,80
XD.T 11T304FR	6,8	2,8	10,6	1,8	3,80
XD.T 11T308FR	6,8	2,8	10,6	1,4	3,80
XD.T 11T320FR	6,8	2,8	10,6	1,4	3,80
XD.T 11T325FR	6,8	2,8	10,6	1,4	3,80
XDHT 11T312FR	6,8	2,8	10,6	1,4	3,80
XDHT 11T316FR	6,8	2,8	10,6	1,4	3,80
XDHT 11T332FR	6,8	2,8	10,6	0,8	3,80
XDHT 11T340FR	6,8	2,8	10,6	-	3,80
XDHT 11T350FR	6,8	2,8	10,6	-	3,80



XDKT

XDKT / XDHT

		-F20 CTWN215		-27P H216T	
		-F20 CWK4615		-ALP CWK26	
					
		XDKT		XDHT	
		1A/90		1A/90	
ISO	RE	**Article no. 50 478 ...**		**Article no. 50 477 ...**	
	mm	EUR		EUR	
11T302FR	0,2	17,67	**502**	26,63	**502**
11T304FR	0,4	17,67	**504**	26,63	**504**
11T308FR	0,8	17,67	**508**	26,63	**508**
11T312FR	1,2			26,63	**512**
11T316FR	1,6			26,63	**516**
11T320FR	2,0	17,67	**520** 1)	26,63	**520** 1)
11T325FR	2,5	17,67	**525** 1)	26,63	**525** 1)
11T332FR	3,2			26,63	**532** 1)
11T340FR	4,0			26,63	**540** 1)
11T350FR	5,0			26,63	**550** 1)
Steel					
Stainless steel					
Cast iron			○		○
Non ferrous metals			●		●
Heat resistant alloys					
hardened materials					

1) Insert radius >1.6 mm: Modify cutter body

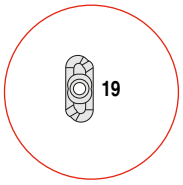
Milling guide

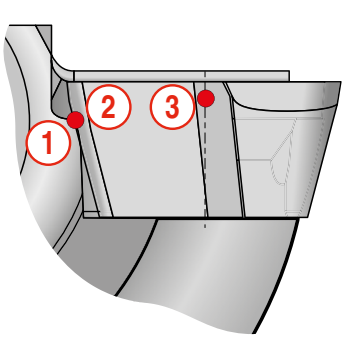
Machining strategy	→ 161–165	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 160+163
Safety advice	→ 159		

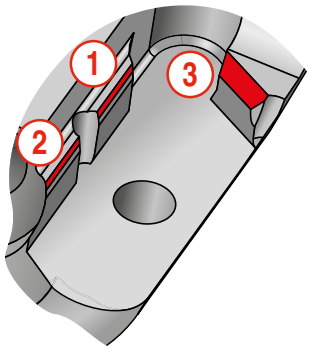
MaxiMill HSC-19

For medium – high number of revolutions

n_{max} = 34400 min^{-1}
$a_{p\,max}$ = 18 mm







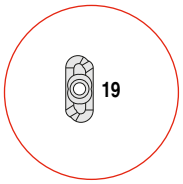
(1) (2) Radial contact points
- ▲ Guaranteed 90° corner angles and exact radial run-out

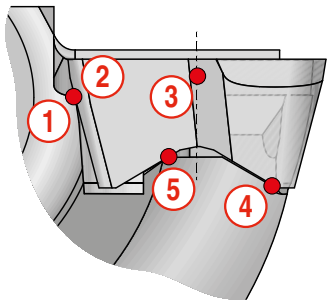
(3) Axial contact point
- ▲ guarantees precise axial run-out

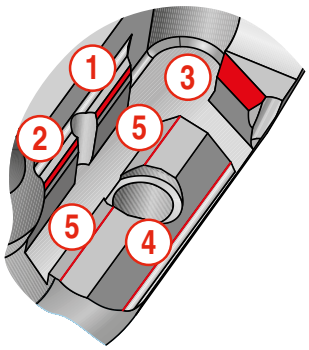
MaxiMill HPC-19

For maximum number of revolutions

n_{max} = 45200 min^{-1}
$a_{p\,max}$ = 18 mm







Roof-shaped surface, included angle 140°
- ▲ greater stability, higher security
- ▲ guaranteed positive connection between insert and tool

(1) (2) Radial contact points
- ▲ Guaranteed 90° corner angles and exact radial run-out

(3) Axial contact point
- ▲ guarantees precise axial run-out

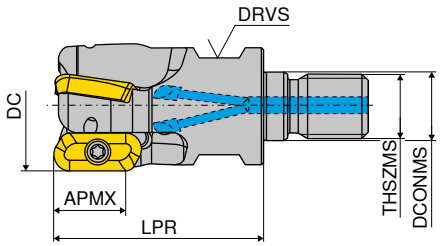
(4) (5) Contact Point
- ▲ resist machining and centrifugal forces

15

MaxiMill – Screw-in cutter 90° G HSC-19

▲ Insert radius > 4.0 mm: Modify cutter body





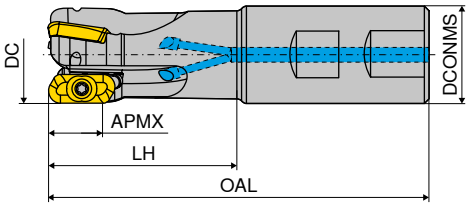


Designation	DC	ZNF	APMX	DCONMS	LPR	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 55 108 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		EUR	
GHSC.25.R.02-19	25	2	18	12,5	45	M12	17	34400	5	XDHT 1904..	315,60	025
GHSC.32.R.03-19	32	3	18	17,0	52	M16	24	29100	5	XDHT 1904..	408,80	032
GHSC.40.R.03-19	40	3	18	17,0	52	M16	24	24900	5	XDHT 1904..	434,70	040

MaxiMill – End milling cutter 90° C HSC-19

▲ Insert radius > 4.0 mm: Modify cutter body







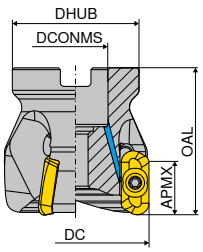


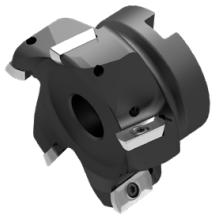
Designation	DC	ZNF	APMX	DCONMS $_{h5}$	OAL	LH	RPMX	torque moment	Insert	A 2B/40 Article no. 50 679 ...		B 2B/40 Article no. 50 679 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
CHSC.25.R.02-19-A-50	25	2	18	25	121	50	32400	5	XDHT 1904..	315,60	225		
CHSC.25.R.02-19	25	2	18	25	121	65	32400	5	XDHT 1904..			324,90	025
CHSC.25.R.02-19-A-63	25	2	18	25	165	63	24700	5	XDHT 1904..	315,60	325		
CHSC.32.R.02-19-A-63	32	2	18	32	125	63	28900	5	XDHT 1904..	331,20	232		
CHSC.32.R.03-19-A-63	32	3	18	32	125	63	28900	5	XDHT 1904..	408,80	432		
CHSC.32.R.03-19	32	3	18	32	125	65	28900	5	XDHT 1904..			416,50	033
CHSC.32.R.02-19	32	2	18	32	125	65	28900	5	XDHT 1904..			338,90	032
CHSC.32.R.02-19-A-80	32	2	18	32	165	80	24400	5	XDHT 1904..	331,20	332		
CHSC.32.R.03-19-A-80	32	3	18	32	165	80	24400	5	XDHT 1904..	408,80	532		

MaxiMill – Shell mill 90° A HSC-19

▲ Insert radius > 4.0 mm: Modify cutter body







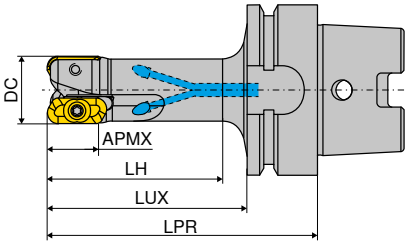
Designation	DC	ZNF	APMX	DCONMS H6	DHUB	OAL	RPMX	torque moment	Insert	2B/40 Article no. 50 716 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
AHSC.40.R.03-19	40	3	18	16	38	50	24900	5	XDHT 1904..	423,00	**040**
AHSC.50.R.04-19	50	4	18	22	43	50	21600	5	XDHT 1904..	531,60	**050**
AHSC.63.R.04-19	63	4	18	22	48	50	18800	5	XDHT 1904..	595,10	**163**
AHSC.63.R.05-19	63	5	18	22	48	50	18800	5	XDHT 1904..	608,00	**063**
AHSC.80.R.04-19	80	4	18	27	58	50	16400	5	XDHT 1904..	618,30	**180**
AHSC.80.R.05-19	80	5	18	27	58	50	16400	5	XDHT 1904..	632,50	**080**
AHSC.100.R.04-19	100	4	18	32	78	50	14500	5	XDHT 1904..	663,70	**200**
AHSC.100.R.05-19	100	5	18	32	78	50	14500	5	XDHT 1904..	677,90	**100**
AHSC.125.R.05-19	125	5	18	40	88	63	12800	5	XDHT 1904..	783,80	**125**
AHSC.125.R.06-19	125	6	18	40	88	63	12800	5	XDHT 1904..	796,80	**225**

MaxiMill – Milling cutter 90° M HSC-19 with HSK 63-A

▲ balanced to G 6,3

▲ Insert radius > 4.0 mm: Modify cutter body







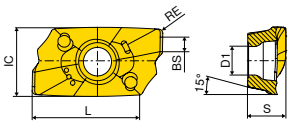
Designation	DC	ZNF	APMX	LPR	LH	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 720 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
MHSC.25.R.02-19-H63A-50	25	2	18	90	50	64	35000	5	XDHT 1904..	763,20	**525**
MHSC.25.R.02-19-H63A-63	25	2	18	100	63	74	32700	5	XDHT 1904..	763,20	**625**
MHSC.32.R.02-19-H63A-63	32	2	18	100	63	74	29100	5	XDHT 1904..	778,90	**532**
MHSC.32.R.02-19-H63A-80	32	2	18	120	80	94	27200	5	XDHT 1904..	778,90	**632**
MHSC.32.R.03-19-H63A-63	32	3	18	100	63	74	29100	5	XDHT 1904..	791,80	**732**
MHSC.32.R.03-19-H63A-80	32	3	18	120	80	94	27200	5	XDHT 1904..	791,80	**832**
MHSC.40.R.03-19-H63A-63	40	3	18	100	63	74	24900	5	XDHT 1904..	807,30	**540**
MHSC.40.R.03-19-H63A-80	40	3	18	120	80	94	24900	5	XDHT 1904..	807,30	**640**
MHSC.50.R.03-19-H63A-100	50	3	18	140	100	114	21600	5	XDHT 1904..	807,30	**550**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Power Screw Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
25	4,76	**036**			9,28	**113**			4,38	**303**	2,86	**172**	131,90	**193**
32	4,76	**036**			9,28	**113**			4,38	**303**	3,40	**173**	131,90	**193**
40	4,76	**036**	3,91	**040**	9,28	**113**	12,48	**151**	4,38	**303**	3,40	**173**	131,90	**193**
50 - 63	4,76	**036**	4,24	**050**	9,28	**113**	17,14	**154**	4,38	**303**	3,40	**174**	131,90	**193**
80 - 125	4,76	**036**			9,28	**113**			4,38	**303**	3,40	**174**	131,90	**193**

15

XDHT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHT 190402..	9,52	4,65	19	2	4,76
XDHT 190404..	9,52	4,65	19	2	4,76
XDHT 190408..	9,52	4,65	19	2	4,76
XDHT 190412..	9,52	4,65	19	2	4,76
XDHT 190416..	9,52	4,65	19	2	4,76
XDHT 190420..	9,52	4,65	19	2	4,76
XDHT 190425..	9,52	4,65	19	1,4	4,76
XDHT 190432..	9,52	4,65	19	1	4,76
XDHT 190440..	9,52	4,65	19	1	4,76
XDHT 190450..	9,52	4,65	19	-	4,76

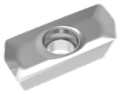


XDKT

XDHT

-27P
H216T

-ALP
CWK26


XDHT

ISO	RE	Article no. 50 487 ...	
	mm	EUR	
190402FR	0,2	27,36	**552**
190404FR	0,4	27,36	**554**
190408FR	0,8	27,36	**556**
190412FR	1,2	27,36	**557**
190416FR	1,6	27,36	**558**
190420FR	2,0	27,36	**560**
190425FR	2,5	27,36	**562**
190432FR	3,2	27,36	**564**
190440FR	4,0	27,36	**566**
190450FR	5,0	27,36	**568** 1)

Steel	
Stainless steel	
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) Insert radius >4.0 mm: Modify cutter body

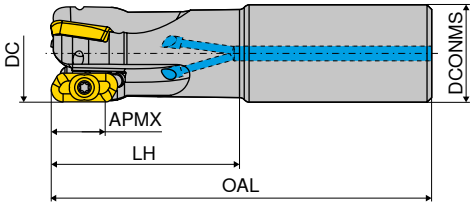
Milling guide

Machining strategy	→ 161–165	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 160+163
Safety advice	→ 159		

MaxiMill – End milling cutter 90° C HPC-19

▲ Shank type to DIN 1835-A
▲ Insert radius > 4.0 mm: Modify cutter body







A

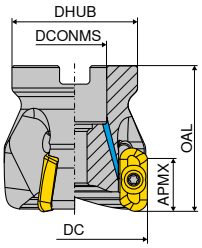
2B/40

Designation	DC mm	ZNF	APMX mm	DCONMS $_{h5}$ mm	OAL mm	LH mm	RPMX 1/min.	torque moment Nm	Insert	Article no. 50 680 ... EUR	
CHPC.22.R.02-19-A-40	22	2	18	22	165	40	31900	5	XDHX 1904..	380,20	**122**
CHPC.25.R.02-19-A-50	25	2	18	25	121	50	41800	5	XDHX 1904..	393,30	**125**
CHPC.25.R.02-19-A-63	25	2	18	25	165	63	31900	5	XDHX 1904..	393,30	**225**
CHPC.32.R.02-19-A-63	32	2	18	32	125	63	39800	5	XDHX 1904..	408,80	**132**
CHPC.32.R.02-19-A-80	32	2	18	32	165	80	33500	5	XDHX 1904..	408,80	**232**
CHPC.32.R.03-19-A-63	32	3	18	32	125	63	39800	5	XDHX 1904..	485,10	**332**
CHPC.32.R.03-19-A-80	32	3	18	32	165	80	33500	5	XDHX 1904..	485,10	**432**

MaxiMill – Shell mill 90° A HPC-19

▲ Insert radius > 4.0 mm: Modify cutter body







2B/40

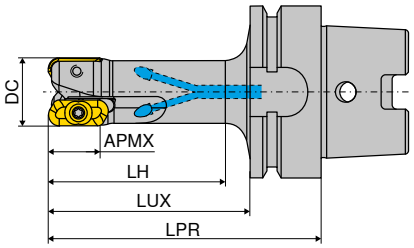
Designation	DC mm	ZNF	APMX mm	DCONMS $_{H6}$ mm	DHUB mm	OAL mm	RPMX 1/min.	torque moment Nm	Insert	Article no. 50 717 ... EUR	
AHPC.40.R.03-19	40	3	18	16	38	50	35700	5	XDHX 1904..	494,20	**040**
AHPC.50.R.03-19	50	3	18	22	43	50	31900	5	XDHX 1904..	514,80	**050**
AHPC.63.R.03-19	63	3	18	22	48	50	28500	5	XDHX 1904..	539,50	**063**
AHPC.63.R.04-19	63	4	18	22	48	50	28500	5	XDHX 1904..	553,70	**163**

15

MaxiMill – Milling cutter 90° M HPC-19 with HSK 63-A

- balanced to G 6,3
- Insert radius > 4.0 mm: Modify cutter body





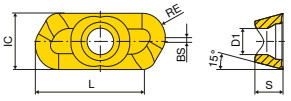


Designation	DC	ZNF	APMX	LPR	LH	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 721 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
MHPC.25.R.02-19-H63A-50	25	2	18	90	50	64	45200	5	XDHX 1904..	984,40	**025**
MHPC.25.R.02-19-H63A-63	25	2	18	100	63	74	42300	5	XDHX 1904..	984,40	**125**
MHPC.25.R.02-19-H63A-80	25	2	18	120	80	94	38400	5	XDHX 1904..	984,40	**225**
MHPC.25.R.02-19-H63A-100	25	2	18	140	100	114	33900	5	XDHX 1904..	984,40	**325**
MHPC.32.R.02-19-H63A-63	32	2	18	100	63	74	40000	5	XDHX 1904..	1.001,00	**032**
MHPC.32.R.03-19-H63A-63	32	3	18	100	63	74	40000	5	XDHX 1904..	1.105,00	**532**
MHPC.32.R.02-19-H63A-80	32	2	18	120	80	94	37500	5	XDHX 1904..	1.001,00	**132**
MHPC.32.R.03-19-H63A-80	32	3	18	120	80	94	37500	5	XDHX 1904..	1.105,00	**632**
MHPC.32.R.02-19-H63A-100	32	2	18	140	100	114	34300	5	XDHX 1904..	1.001,00	**232**
MHPC.40.R.03-19-H63A-63	40	3	18	100	63	74	35700	5	XDHX 1904..	1.136,00	**040**
MHPC.40.R.03-19-H63A-80	40	3	18	120	80	94	35700	5	XDHX 1904..	1.136,00	**140**
MHPC.40.R.03-19-H63A-100	40	3	18	140	100	114	33500	5	XDHX 1904..	1.136,00	**240**
MHPC.50.R.03-19-H63A-63	50	3	18	100	63	74	31900	5	XDHX 1904..	1.155,00	**050**
MHPC.50.R.03-19-H63A-80	50	3	18	120	80	94	31900	5	XDHX 1904..	1.155,00	**150**
MHPC.50.R.03-19-H63A-100	50	3	18	140	100	114	31900	5	XDHX 1904..	1.155,00	**250**

	Y7		Y7		Y7		2A/28		2A/28		2A/28		Y7	
	TORX® blade		 Clamping key – T		 Key D		 Power Screw		 Molykote		 Clamping screw		 Torque screwdriver	
Spare parts DC	**Article no. 80 950 ...**		**Article no. 80 397 ...**		**Article no. 80 950 ...**		**Article no. 70 950 ...**		**Article no. 70 950 ...**		**Article no. 70 950 ...**		**Article no. 80 950 ...**	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
22 - 25	4,76	**036**			9,28	**113**			4,38	**303**	2,86	**172**	131,90	**193**
32	4,76	**036**			9,28	**113**			4,38	**303**	3,40	**173**	131,90	**193**
40	4,76	**036**	3,91	**040**	9,28	**113**	12,48	**151**	4,38	**303**	3,40	**173**	131,90	**193**
50 - 63	4,76	**036**	4,24	**050**	9,28	**113**	17,14	**154**	4,38	**303**	3,40	**174**	131,90	**193**

XDHX

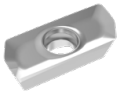
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHX 190402..	9,52	4,65	19	2	4,76
XDHX 190404..	9,52	4,65	19	2	4,76
XDHX 190408..	9,52	4,65	19	2	4,76
XDHX 190412..	9,52	4,65	19	2	4,76
XDHX 190416..	9,52	4,65	19	2	4,76
XDHX 190420..	9,52	4,65	19	2	4,76
XDHX 190425..	9,52	4,65	19	1,4	4,76
XDHX 190432..	9,52	4,65	19	1	4,76
XDHX 190440..	9,52	4,65	19	1	4,76
XDHX 190450..	9,52	4,65	19	-	4,76



XDHX

-27P
H216T

-ALP
CWK26



XDHX
1H/D4

ISO	RE	Article no. 50 488 ...	
	mm	EUR	
190402FR	0,2	35,72	**552**
190404FR	0,4	35,72	**554**
190408FR	0,8	35,72	**556**
190412FR	1,2	35,72	**557**
190416FR	1,6	35,72	**558**
190420FR	2,0	35,72	**560**
190425FR	2,5	35,72	**562**
190432FR	3,2	35,72	**564**
190440FR	4,0	35,72	**566**
190450FR	5,0	35,72	**568** 1)

Steel	
Stainless steel	
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) Insert radius > 4.0 mm: Modify cutter body

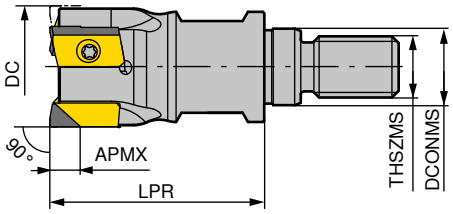
Milling guide

Machining strategy	→ 163–165	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 163
Safety advice	→ 159		

15

MaxiMill – Screw-in cutter G HPC 04



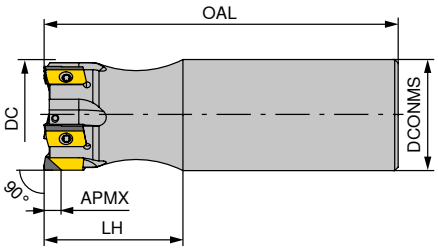




Designation	DC	ZNF	APMX	THSZMS	DCONMS	LPR	RPMX	torque moment	Insert	NEW 2B/40 Article no. 50 785 ... EUR	
	mm		mm		mm	mm	1/min.	Nm			
GHPC.20.R.03-04	20	3	4	M10	10,5	35	52000	5	ZNHW 04T3..	261,70	**20003**
GHPC.25.R.04-04	25	4	4	M12	12,5	35	45000	5	ZNHW 04T3..	292,90	**25004**
GHPC.32.R.05-04	32	5	4	M16	17,0	35	38000	5	ZNHW 04T3..	324,10	**32005**
GHPC.40.R.06-04	40	6	4	M16	17,0	35	34000	5	ZNHW 04T3..	355,10	**40006**

MaxiMill – End Mill C HPC 04







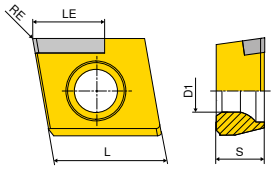
A 

Designation	DC	ZNF	APMX	DCONMS	OAL	LH	RPMX	torque moment	Insert	NEW 2B/40 Article no. 50 680 ... EUR	
	mm		mm	mm	mm	mm	1/min.	Nm			
CHPC.20.R.03-04-A-25	20	3	4	20	77	25	52000	5	ZNHW 04T3..	261,70	**02003**
CHPC.25.R.04-04-A-32	25	4	4	25	90	32	45000	5	ZNHW 04T3..	292,90	**02504**
CHPC.32.R.05-04-A-40	32	5	4	32	102	40	38000	5	ZNHW 04T3..	324,10	**03205**
CHPC.40.R.06-04-A-50	40	6	4	32	112	50	34000	5	ZNHW 04T3..	355,10	**04006**

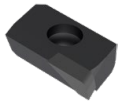
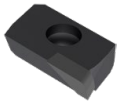
Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7  Key D Article no. 80 950 ... EUR		2A/28  Molykote Article no. 70 950 ... EUR		2A/28  Clamping screw Article no. 70 950 ... EUR		Y7  Torque screwdriver Article no. 80 950 ... EUR	
20 - 40	4,76	**043**	10,20	**125**	4,38	**303**	4,09	**131**	118,90	**191**

ZNHW

Designation	LE	D1	L	S
	mm	mm	mm	mm
ZNHW 04T3..	4	2,8	11	3,97
ZNHW 04T3..	4	2,8	11	3,97
ZNHW 04T3..	4	2,8	11	3,97
ZNHW 04T3..	4	2,8	11	3,97



ZNHW

ISO	RE	CTD4205 DIAMOND ZNHW NEW 1G/22 Article no. 51 137 ...		CTL3215 CWB3215 CBN ZNHW NEW 1G/21 Article no. 51 137 ...	
	mm	EUR		EUR	
04T304ER	0,4	105,00	75400		
04T305ER	0,5			126,80	85500
04T308ER	0,8	105,00	75800		
04T3POER		105,00	77000		

Steel		
Stainless steel		
Cast iron		●
Non ferrous metals	●	
Heat resistant alloys		
hardened materials		○

Milling guide

Machining strategy	→ 166	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 166

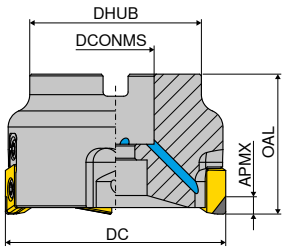
MaxiMill – Shell mill HPC 12

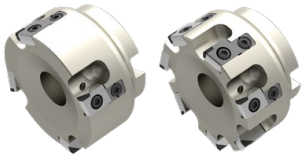
▲ 50 723 ... normal pitch
▲ 50 724 ... fine pitch

Scope of supply:

Tool, adjustment wedges and setting key; incl. wooden box







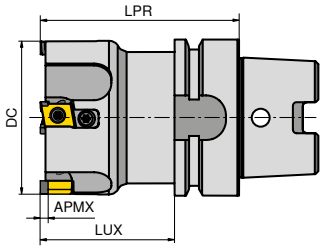
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 723 ...		2B/40 Article no. 50 724 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
AHPC.40.R.04-12	40	4	11	40	34	16	32000	5	ZNHW 1205..	652,90	**040**		
AHPC.50.R.04-12	50	4	11	40	49	22	32000	5	ZNHW 1205..	667,90	**050**		
AHPC.50.R.05-12	50	5	11	40	49	22	32000	5	ZNHW 1205..			747,90	**050**
AHPC.63.R.04-12	63	4	11	40	49	22	29000	5	ZNHW 1205..	688,00	**063**		
AHPC.63.R.07-12	63	7	11	40	49	22	29000	5	ZNHW 1205..			927,20	**063**
AHPC.80.R.09-12	80	9	11	50	60	27	26000	5	ZNHW 1205..			1.290,00	**080**
AHPC.80.R.05-12	80	5	11	50	60	27	26000	5	ZNHW 1205..	972,20	**080**		
AHPC.100.R.06-12	100	6	11	50	70	32	24000	5	ZNHW 1205..	1.097,00	**100**		
AHPC.100.R.12-12	100	12	11	50	70	32	24000	5	ZNHW 1205..			1.574,00	**100**
AHPC.125.R.08-12	125	8	11	63	72	40	22000	5	ZNHW 1205..	1.301,00	**125**		
AHPC.125.R.14-12	125	14	11	63	72	40	22000	5	ZNHW 1205..			1.779,00	**12514**
AHPC.160.R.10-12	160	10	11	63	118	40	18000	5	ZNHW 1205..	1.620,00	**16010**		
AHPC.160.R.16-12	160	16	11	63	118	40	18000	5	ZNHW 1205..			4.665,00	**16016**
AHPC.200.R.12-12	200	12	11	63	153	60	16000	5	ZNHW 1205..	4.832,00	**20000**		
AHPC.250.R.14-12	250	14	11	63	200	60	14000	5	ZNHW 1205..	5.457,00	**25014**		
AHPC.315.R.18-12	315	18	11	80	265	60	12000	5	ZNHW 1205..	6.874,00	**31518**		

MaxiMill – Monoblock HPC 12

▲ balanced to G 6,3

Scope of supply:

Tool, adjustment wedges and setting key; incl. wooden box



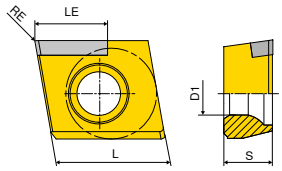


Designation	DC	ZNF	APMX	LPR	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 721 ...		2B/40 Article no. 50 721 ...	
	mm		mm	mm	mm	1/min.	Nm		EUR		EUR	
MHPC.40.R.04-12-H63A-70	40	4	11	70	44	32000	5	ZNHW 1205..			972,20	**04004**
MHPC.50.R.04-12-H63A-80	50	4	11	80	54	32000	5	ZNHW 1205..			972,20	**05004**
MHPC.50.R.05-12-H63A-80	50	5	11	80	54	32000	5	ZNHW 1205..	1.052,00	**05005**		
MHPC.63.R.04-12-H63A-80	63	4	11	80	54	29000	5	ZNHW 1205..			972,20	**06304**
MHPC.63.R.07-12-H63A-80	63	7	11	80	54	29000	5	ZNHW 1205..	1.211,00	**06307**		
MHPC.80.R.05-12-H63A-90	80	5	11	90	64	26000	5	ZNHW 1205..			1.192,00	**08005**
MHPC.80.R.09-12-H63A-90	80	9	11	90	64	26000	5	ZNHW 1205..	1.512,00	**08009**		
MHPC.100.R.06-12-H63A-90	100	6	11	90	64	24000	5	ZNHW 1205..			1.420,00	**10006**
MHPC.100.R.12-12-H63A-90	100	12	11	90	64	24000	5	ZNHW 1205..	1.900,00	**10012**		
MHPC.125.R.08-12-H63A-123	125	8	11	123	97	22000	5	ZNHW 1205..			3.355,00	**12508**
MHPC.160.R.10-12-H63A-123	160	10	11	123	97	18000	5	ZNHW 1205..			4.537,00	**16010**

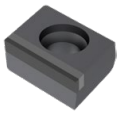
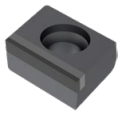
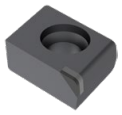
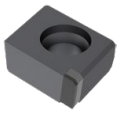
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR	
40 - 315	4,76	**036**	4,38	**303**	3,40	**174**	36,80	**199**	131,90	**193**

ZNHW

Designation	LE	D1	L	S
	mm	mm	mm	mm
ZNHW 120504ER-1503	3	4,85	12,7	5,40
ZNHW 120504FR-0007	7	4,85	12,7	5,40
ZNHW 120508ER-1503	3	4,85	12,7	5,40
ZNHW 120508SR-0003	3	4,85	12,7	5,40
ZNHW 1205EOER-1002	2	4,85	12,7	5,40
ZNHW 1205POER-1511	11	4,85	12,7	5,40
ZNHW 1205POSR-1003	3	4,85	12,7	5,40
ZNHW 1205POSR-1503	3	4,85	12,7	5,40
ZNHW 1205POSR-1506	6	4,85	12,7	5,40
ZNHW 1205POSR-3003	3	4,85	12,7	5,40
ZNHW 1205ZZSR-5003	3	4,85	12,7	5,40

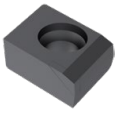


ZNHW

	CTD4205	-R CTD4205	CTD4205	-Q CTD4205
	CWD4205	CWD4205	CWD4205	-Q CWD4205
				
	DIAMOND ZNHW	DIAMOND ZNHW	DIAMOND ZNHW	DIAMOND ZNHW
	1G/22	NEW 1G/22	1G/22	1G/22
ISO	Article no. 50 467 ...	Article no. 50 517 ...	Article no. 50 468 ...	Article no. 50 466 ...
RE mm	EUR	EUR	EUR	EUR
120504ER-1503 0,4			116,10 906	
120504FR-0007 0,4			141,40 904	
120508ER-1503 0,8			116,10 910	
120508SR-0003 0,8			115,50 908	
1205POER-1511	167,30 902			
1205POSR-1003	116,10 90600			
1205POSR-1503	105,00 900			
1205POSR-1506	136,20 90800	136,20 90800		
1205POSR-3003	115,50 904			
1205ZZSR-5003				147,80 900 1)
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

1) -Q = Wiper insert

ZNHW

	CTL3215
	CWB3215
	
	CBN ZNHW
	1G/21
ISO	Article no. 50 515 ...
	EUR
1205EOER-1002	133,90 952
Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	○

Milling guide

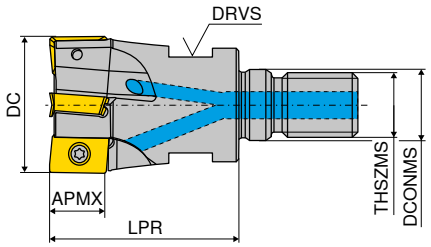
Machining strategy	→ 166+167
ISO Designation System	→ 194+195
Grade description	→ 209+210
Cutting data appoximate values	→ 166

15

MaxiMill – Screw in cutter G 141

▲ Insert radius > 3.2 mm: Modify cutter body





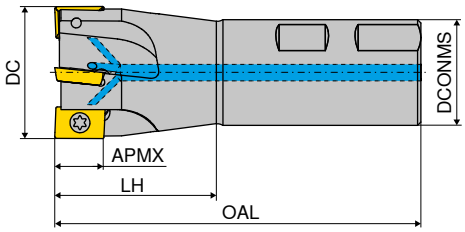


Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B Article no. 50 770 ...	
	mm		mm	mm		mm	mm	Nm		EUR	
G141.25.R.02.IK	25	2	14	35	M12	12,5	17	3,2	LD.. 1504..	166,70	**025**
G141.32.R.03.IK	32	3	14	40	M16	17,0	24	3,2	LD.. 1504..	200,20	**032**
G141.40.R.04.IK	40	4	14	40	M16	17,0	24	3,2	LD.. 1504..	230,70	**040**

MaxiMill – End milling cutter C 141

▲ Insert radius > 3.2 mm: Modify cutter body







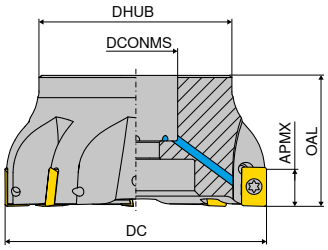


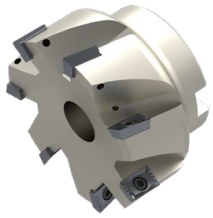
Designation	DC	ZNF	APMX	DCONMS	OAL	LH	torque moment	Insert	2B Article no. 50 771 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
C141.20.R.01	20	1	14	25	95	39	3,2	LD.. 1504..	170,90	**020**
C141.25.R.02	25	2	14	25	100	44	3,2	LD.. 1504..	227,50	**025**
C141.32.R.03	32	3	14	32	108	48	3,2	LD.. 1504..	264,30	**032**

MaxiMill – Shell mill A 241

▲ Insert radius > 3.2 mm: Modify cutter body







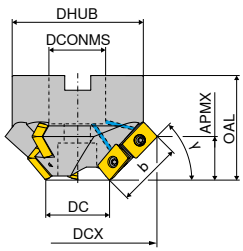
Designation	DC	ZNF	APMX	DHUB	DCONMS	OAL	torque moment	Insert	2B Article no. 50 769 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
A241.40.R.04	40	4	14	33	16	40	3,2	LD.. 1504..	274,70	**040**
A241.50.R.05	50	5	14	43	22	40	3,2	LD.. 1504..	336,60	**050**
A241.52.R.05	52	5	14	43	22	40	3,2	LD.. 1504..	329,30	**052**
A241.63.R.06	63	6	14	48	22	40	3,2	LD.. 1504..	405,80	**063**
A241.66.R.06	66	6	14	58	27	50	3,2	LD.. 1504..	398,40	**066**
A241.80.R.07	80	7	14	58	27	50	3,2	LD.. 1504..	477,20	**080**
A241.100.R.08	100	8	14	75	32	50	3,2	LD.. 1504..	554,70	**100**

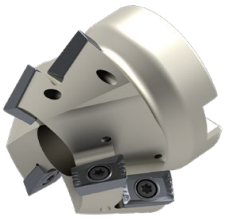
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR	
20 - 40	4,76	**036**	9,28	**113**	4,38	**303**	3,14	**110**	128,60	**192**
50 - 100	4,76	**036**	9,28	**113**	4,38	**303**	3,14	**304**	128,60	**192**

MaxiMill – Chamfer Cutter A 242

▲ Caution: Use only inserts with a corner radius of less than 1.6 mm
▲ ZEFP = number of inserts
▲ ZNP = tooth rows







KAPR	DC	DCX ±0,3	ZNF	APMX ±0,3	ZEFP	b ±0,3	OAL	DCONMS	DHUB	ZNP	torque moment	Insert	2B Article no. 50 768 ...	
°	mm	mm		mm		mm	mm	mm	mm		Nm		EUR	
15	35	92,2	3	7,6	6	29,6	50	27	62,5	2	3,2	LD.. 1504..	376,40	**015**
30	35	86,3	3	14,8	6	29,6	50	27	62,5	2	3,2	LD.. 1504..	376,40	**030**
45	35	76,9	3	20,9	6	29,6	50	27	62,5	2	3,2	LD.. 1504..	376,40	**045**
60	35	64,6	3	25,6	6	29,6	50	22	62,5	2	3,2	LD.. 1504..	376,40	**060** 1)
75	35	50,3	3	28,5	6	29,6	60	22	49,0	2	3,2	LD.. 1504..	376,40	**075** 1)

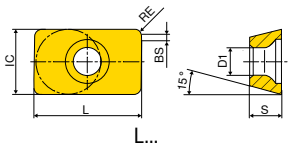
1) Version with Powerscrew

Spare parts KAPR	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...		Y8 Clamping screw Article no. 83 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR		EUR	
15 - 45	4,76	**036**			9,28	**113**			4,38	**303**	3,14	**304**	128,60	**192**	3,67	**125**
60 - 75	4,76	**036**	4,24	**050**	9,28	**113**	17,14	**154**	4,38	**303**	3,14	**304**	128,60	**192**		

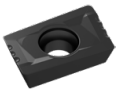
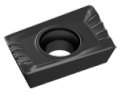
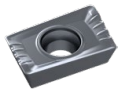
15

LDFW / LDFT / LDMT

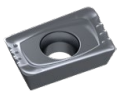
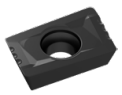
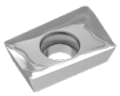
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
LD.. 1504PD..	9,52	4,4	15	1,2	4,76
LDFT 150408..	9,52	4,4	15	1,2	4,76
LDFT 1504PD..	9,52	4,4	15	0,8	4,76



LDFW / LDFT / LDMT

		CTCP230	-29 CTCP230	-29 CTCP230	-29 CTPP235	-29 CTPP235
		DCX1230	-29 DCX1230	-29 DCX1230	-29 DPX1235	-29 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		LDFW	LDFT	LDMT	LDFT	LDMT
		1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 043 ...	Article no. 51 079 ...	Article no. 51 080 ...	Article no. 51 079 ...	Article no. 51 080 ...
	mm	EUR	EUR	EUR	EUR	EUR
1504PDSR	0,8	15,97 020	19,13 020	9,77 020	19,13 120	9,77 120
Steel		●	●	●	●	●
Stainless steel		○	○	○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

LDFT / LDFW

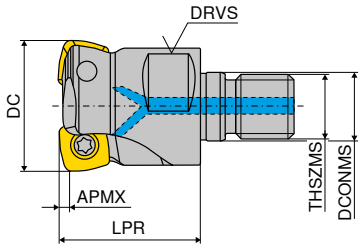
		-33 CTPM240	CTCK215	-27P H216T
		-33 DPX2240	DCX3215	-ALP CWK26
		DRAGONSKIN	DRAGONSKIN	
				
		LDFT	LDFW	LDFT
		1B/61	1B/61	1A/90
ISO	RE	Article no. 51 042 ...	Article no. 51 043 ...	Article no. 50 409 ...
	mm	EUR	EUR	EUR
150408FR	0,8			19,85 550
1504PDSR	0,8		15,97 520	
1504PDSR	1,2	18,27 420		
Steel		○	○	
Stainless steel		●		
Cast iron			●	○
Non ferrous metals				●
Heat resistant alloys				
hardened materials				

Milling guide

Machining strategy	→ 168	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 168

MaxiMill – Screw in cutter G HFC



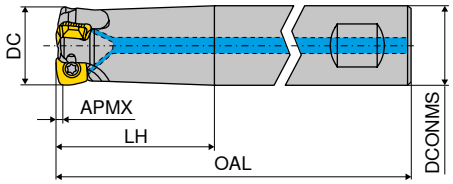




Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 682 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		EUR	
GHFC.16.R.02-06	16	2	0,8	27	8,5	M8	10	20800	1,2	XPLX 0603..	230,50	616
GHFC.20.R.03-06	20	3	0,8	33	10,5	M10	15	19800	1,2	XPLX 0603..	261,70	620
GHFC.25.R.04-06	25	4	0,8	35	12,5	M12	17	18700	1,2	XPLX 0603..	292,90	625
GHFC.32.R.05-06	32	5	0,8	35	17,0	M16	24	22000	1,2	XPLX 0603..	324,10	632
GHFC.42.R.07-06	42	7	0,8	35	17,0	M16	24	15000	1,2	XPLX 0603..	356,60	04207
GHFC.25.R.02-09	25	2	1,0	35	12,5	M12	17	30000	3,2	XDLX 09T3..	276,00	025
GHFC.25.R.03-09	25	3	1,0	35	12,5	M12	17	30000	3,2	XDLX 09T3..	296,30	125
GHFC.32.R.03-09	32	3	1,0	35	17,0	M16	24	27000	3,2	XDLX 09T3..	309,50	032
GHFC.42.R.05-19	42	5	1,0	35	17,0	M16	24	26100	3,2	XDLX 09T3..	346,70	04205
GHFC.32.R.02-12	32	2	2,0	35	17,0	M16	24	21600	5	XOLX 1204..	289,50	132
GHFC.35.R.03-12	35	3	2,0	35	17,0	M16	24	21360	5	XOLX 1204..	309,50	035
GHFC.42.R.04-12	42	4	2,0	35	17,0	M16	24	20800	5	XOLX 1204..	334,30	04204

MaxiMill – End milling cutter C HFC





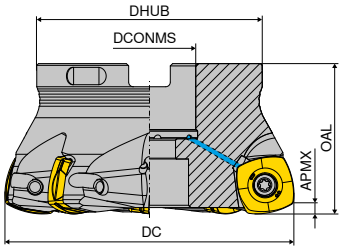


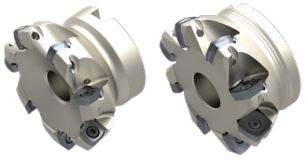


Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	RPMX	torque moment	Insert	A 2B/40 Article no. 50 681 ...		B 2B/40 Article no. 50 681 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
CHFC.16.R.02-06-A-40-200	16	2	0,8	200	40	16	4600	1,2	XPLX 0603..	230,50	716		
CHFC.16.R.02-06-B-40	16	2	0,8	89	40	16	17300	1,2	XPLX 0603..			230,50	616
CHFC.20.R.03-06-B-50	20	3	0,8	101	50	20	14500	1,2	XPLX 0603..			261,70	620
CHFC.20.R.03-06-A-50-225	20	3	0,8	225	50	20	4200	1,2	XPLX 0603..	261,70	720		
CHFC.25.R.04-06-B-50	25	4	0,8	107	50	25	15600	1,2	XPLX 0603..			292,90	625
CHFC.25.R.04-06-A-50-225	25	4	0,8	225	50	25	4600	1,2	XPLX 0603..	292,90	725		
CHFC.32.R.05-06-B-25-60	32	5	0,8	117	60	25	11000	1,2	XPLX 0603..			324,10	632
CHFC.32.R.05-06-A-25-60-225	32	5	0,8	225	60	25	3900	1,2	XPLX 0603..	324,10	732		
CHFC.25.R.02-09-A-50-225	25	2	1,0	225	50	25	9000	3,2	XDLX 09T3..	276,00	025		
CHFC.25.R.03-09-A-50-225	25	3	1,0	225	50	25	9000	3,2	XDLX 09T3..	296,30	125		
CHFC.32.R.03-09-A-63-250	32	3	1,0	250	63	32	8100	3,2	XDLX 09T3..	309,50	032		
CHFC.32.R.02-12-A-63-250	32	2	2,0	250	63	32	6480	5	XOLX 1204..	289,50	132		
CHFC.35.R.03-12-A-63-250	35	3	2,0	250	63	32	6480	5	XOLX 1204..	309,50	035		

MaxiMill – Shell mill A HFC







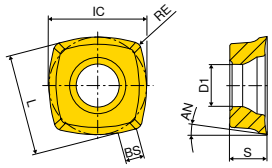
Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 683 ...		2B/40 Article no. 50 683 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		EUR		EUR	
AHFC.32.R.03-09	32	3	1,0	40	16	38	27700	3,2	XDLX 09T3..	309,50	**032**		
AHFC.35.R.04-09	35	4	1,0	40	16	38	26700	3,2	XDLX 09T3..	329,70	**035**		
AHFC.40.R.04-09	40	4	1,0	40	16	38	26400	3,2	XDLX 09T3..	343,20	**140**		
AHFC.42.R.05-09	42	5	1,0	40	16	38	26100	3,2	XDLX 09T3..	363,30	**142**		
AHFC.50.R.05-09	50	5	1,0	40	22	43	23500	3,2	XDLX 09T3..	403,80	**150**		
AHFC.52.R.06-09	52	6	1,0	40	22	43	23000	3,2	XDLX 09T3..	424,00	**152**		
AHFC.63.R.06-09	63	6	1,0	40	22	48	20500	3,2	XDLX 09T3..	464,30	**163**		
AHFC.66.R.07-09	66	7	1,0	40	22	48	20000	3,2	XDLX 09T3..	484,50	**16600**		
AHFC.40.R.03-12	40	3	2,0	40	16	38	21120	5	XOLX 1204..	323,10	**040**		
AHFC.42.R.04-12	42	4	2,0	40	16	38	20880	5	XOLX 1204..	343,20	**042**		
AHFC.50.R.04-12	50	4	2,0	40	22	43	18800	5	XOLX 1204..	383,50	**050**		
AHFC.52.R.05-12	52	5	2,0	40	22	43	18400	5	XOLX 1204..	403,80	**052**		
AHFC.63.R.05-12	63	5	2,0	40	22	48	16400	5	XOLX 1204..	444,00	**063**		
AHFC.66.R.06-12	66	6	2,0	40	22	48	16000	5	XOLX 1204..	464,30	**066**		
AHFC.80.R.07-12	80	7	2,0	50	27	58	14000	5	XOLX 1204..	524,90	**080**		
AHFC.100.R.08-12	100	8	2,0	50	32	78	12000	5	XOLX 1204..	585,60	**100**		
AHFC.63.R.05-19	63	5	3,3	40	22	48	5500	5	XOLX 1906..			464,90	**263**
AHFC.80.R.06-19	80	6	3,3	50	27	58	4700	5	XOLX 1906..			564,90	**280**
AHFC.100.R.08-19	100	8	3,3	52	32	78	4100	5	XOLX 1906..			672,40	**300**
AHFC.125.R.10-19	125	10	3,3	63	40	88	3600	5	XOLX 1906..			844,60	**325**
AHFC.160.R.11-19	160	11	3,3	63	40	98	3100	5	XOLX 1906..			1.021,00	**360** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
XDLX 09T3..	4,76	**036**			9,28	**113**			4,38	**303**	3,14	**110**	128,60	**192**
XDLX 09T3.. (Ø32 – Ø42)	4,76	**036**	3,91	**040**	9,28	**113**	12,48	**151**	4,38	**303**	3,14	**110**	128,60	**192**
XOLX 1204..	4,76	**037**			9,95	**114**			4,38	**303**	2,52	**280**	131,90	**193**
XOLX 1204.. (Ø40 – Ø42)	4,76	**037**	3,91	**040**	9,95	**114**	12,48	**151**	4,38	**303**	2,52	**280**	131,90	**193**
XOLX 1906..	4,76	**037**			9,95	**114**			4,38	**303**	4,09	**302**	131,90	**193**
XPLX 0603..	4,76	**033**			7,80	**110**			4,38	**303**	2,57	**116**	128,60	**192**

XPLX / XDLX / XOLX

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
XPLX 0603..	6,35	2,8	6	1	2,75	11
XDLX 09T3..	9,52	4,4	9	1,9	3,97	15
XOLX 1204..	12,70	5,5	12	1,3	4,76	-
XOLX 1906..	19,14	6,0	19	-	6,35	10



XPLX

		-M50 CTCP220	-M50 CTPP225	-M50 CTPP235	-M50 CTPM225	-M50 CTPM240	-F40 CTPM245
		-M50 DCX1220	-M50 DPX1225	-M50 DPX1235	-M50 DPX2225	-M50 DPX2240	-F40 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		XPLX	XPLX	XPLX	XPLX	XPLX	XPLX
		1B/61	1B/61	1B/61	1B/61	1B/61	1H/17
ISO	RE	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 116 ...**
	mm	EUR	EUR	EUR	EUR	EUR	EUR
060305ER	0,5						15,06 **455**
060305SR	0,5	12,34 **255**	12,34 **055**	12,34 **105**	12,34 **205**	12,34 **405**	
Steel		●	●	●	○	○	●
Stainless steel				○	●	●	●
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

15

XPLX

		-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
		-M50 DCX3215	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
		XPLX	XPLX	XPLX
		1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 019 ...	Article no. 50 518 ...	Article no. 51 116 ...
	mm	EUR	EUR	EUR
060305ER	0,5		15,06 558	15,06 55500
060305SR	0,5	12,34 505		
Steel		○		
Stainless steel				
Cast iron		●		
Non ferrous metals				
Heat resistant alloys			●	●
hardened materials				

XDLX

		-M50 CTCP220	-M50 CTPP225	-M50 CTCP230	-M50 CTPP235
		-M50 DCX1220	-M50 DPX1225	-M50 DCX1230	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XDLX	XDLX	XDLX	XDLX
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 016 ...
	mm	EUR	EUR	EUR	EUR
09T308SR	0,8	12,72 258	12,72 058	12,72 008	12,72 108
Steel		●	●	●	●
Stainless steel				○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDLX

		-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-F40 CTPM245	-M50 CTPM245
		-M50 DPX2225	-M50 DCX2235	-M50 DPX2240	-F40 DPX2245	-M50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		XDLX	XDLX	XDLX	XDLX	XDLX
		1B/61	1B/61	1B/61	1H/17	1H/17
ISO	RE	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 115 ...	Article no. 51 016 ...
	mm	EUR	EUR	EUR	EUR	EUR
09T308ER	0,8				15,36 458	
09T308SR	0,8	12,72 208	12,72 308	12,72 408		15,36 458
Steel		○	○	○	●	●
Stainless steel		●	●	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

XDLX

		-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
		-M50 DCX3215	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
		XDLX	XDLX	XDLX
		1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 016 ...	Article no. 50 503 ...	Article no. 51 115 ...
	mm	EUR	EUR	EUR
09T308ER	0,8		15,36 558	15,36 558
09T308SR	0,8	12,72 508		
Steel		○		
Stainless steel				
Cast iron		●		
Non ferrous metals				
Heat resistant alloys			●	●
hardened materials				

15

XOLX

		-M50 CTCP220	-M50 CTPP225	-M50 CTCP230	-M50 CTPP235	-R50 CTPP235
		-M50 DCX1220	-M50 DPX1225	-M50 DCX1230	-M50 DPX1235	-R50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		XOLX	XOLX	XOLX	XOLX	XOLX
		1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 018 ...**
	mm	EUR	EUR	EUR	EUR	EUR
120410SR	1,0	15,26 **260**	15,26 **060**	15,26 **010**	15,26 **110**	15,26 **110**
Steel		●	●	●	●	●
Stainless steel				○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

XOLX

		-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-F40 CTPM245	-M50 CTPM245
		-M50 DPX2225	-M50 DCX2235	-M50 DPX2240	-F40 DPX2245	-M50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		XOLX	XOLX	XOLX	XOLX	XOLX
		1B/61	1B/61	1B/61	1H/17	1H/17
ISO	RE	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 022 ...**	**Article no. 51 017 ...**
	mm	EUR	EUR	EUR	EUR	EUR
120410ER	1,0				17,96 **460**	
120410SR	1,0	15,26 **210**	15,26 **310**	15,26 **410**		17,96 **460**
Steel		○	○	○	●	●
Stainless steel		●	●	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

XOLX / XOHX

		-M50 CTCK215	-F40 CTC5240	-F50 CTC5240	-F40 CTCS245	-F50 CTCS245
		-M50 DCX3215	-F40 HCF5240			
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		XOLX	XOLX	XOHX	XOLX	XOLX
		1B/61	1H/D4	NEW 1H/D4	NEW 1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 017 ...	Article no. 50 504 ...	Article no. 51 124 ...	Article no. 51 022 ...	Article no. 51 124 ...
	mm	EUR	EUR	EUR	EUR	EUR
120410ER	1,0		17,96 558		17,96 560	
120410SR	1,0	15,26 510		23,35 16000		23,35 56000
Steel		○				
Stainless steel						
Cast iron		●				
Non ferrous metals						
Heat resistant alloys			●	●	●	●
hardened materials						

XOLX

		-M50 CTCP230	-M50 CTPP235	-M50 CTPM240	-F40 CTPM245	-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
		-M50 DCX1230	-M50 DPX1235	-M50 DPX2240	-F40 DPX2245	-M50 DCX3215	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		XOLX	XOLX	XOLX	XOLX	XOLX	XOLX	XOLX
		1B/61	1B/61	1B/61	1H/17	1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 017 ...	Article no. 51 017 ...	Article no. 51 017 ...	Article no. 51 022 ...	Article no. 51 017 ...	Article no. 50 504 ...	Article no. 51 022 ...
	mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
190615ER	1,5				27,26 465		27,26 515	27,26 56500
190615SR	1,5	22,17 015	22,17 115	22,17 415		22,17 515		
Steel		●	●	○	●	○		
Stainless steel		○	○	●	●			
Cast iron						●		
Non ferrous metals								
Heat resistant alloys							●	●
hardened materials								

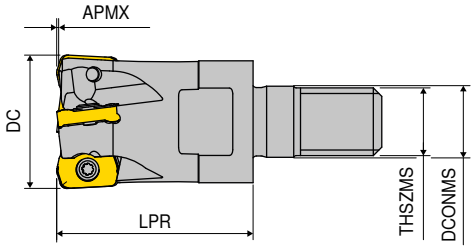
Milling guide

Machining strategy	→ 170–173	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 170–173
Starting Parameter	→ 170–173		

15

MaxiMill – Screw in cutter G DHFC



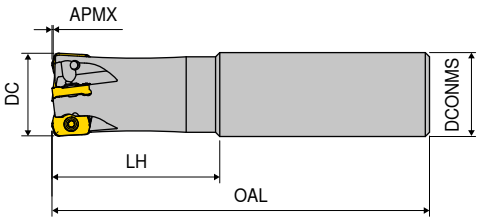




Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	torque moment	Insert	NEW WA Article no. 56 411 ...	
	mm		mm	mm	mm		Nm		EUR	
GDHFC.16.R.02-09	16	2	0,75	29	8,5	M8	0,65	LNKX 0925..	213,00	01602
GDHFC.16.R.03-09	16	3	0,75	29	8,5	M8	0,65	LNKX 0925..	232,30	01603
GDHFC.20.R.04-09	20	4	0,75	29	10,5	M10	0,65	LNKX 0925..	266,50	02004
GDHFC.25.R.05-09	25	5	0,75	33	12,5	M12	0,65	LNKX 0925..	309,30	02505
GDHFC.32.R.05-09	32	5	0,75	42	17,0	M16	0,65	LNKX 0925..	330,70	03205
GDHFC.35.R.06-09	35	6	0,75	42	17,0	M16	0,65	LNKX 0925..	350,00	03506
GDHFC.42.R.06-09	42	6	0,75	42	17,0	M16	0,65	LNKX 0925..	365,00	04206

MaxiMill – End milling cutter C DHFC







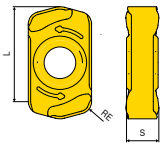
A

Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	torque moment	Insert	NEW WA Article no. 56 417 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
CDHFC.16.R.05-09-A-32	16	3	0,75	80	32	16	0,65	LNKX 0925..	232,30	01603
CDHFC.20.R.04-09-A-40	20	4	0,75	90	40	20	0,65	LNKX 0925..	266,50	02004

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		WA Clamping screw Article no. 56 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
16 - 42	5,26	051	7,95	117	4,38	303	3,32	15000	118,90	191

LNKX

Designation	L	S
	mm	mm
LNKX 0925..	9	2,50



LNKX

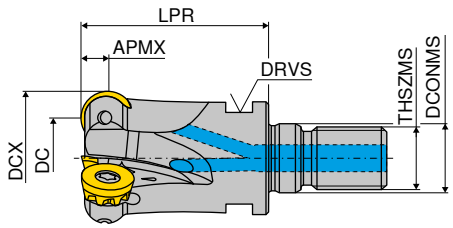
		-R50 CTPP231	-M50 CTPP236	-R50 CTPP236	-M50 CTPM241	-R50 CTPK221
						
		LNKX	LNKX	LNKX	LNKX	LNKX
		NEW WB	NEW WB	NEW WB	NEW WB	NEW WB
ISO	RE	Article no. 56 353 ...	Article no. 56 355 ...	Article no. 56 353 ...	Article no. 56 355 ...	Article no. 56 353 ...
	mm	EUR	EUR	EUR	EUR	EUR
0925ZSR	1	17,68 12000	17,68 02500	17,68 02000	17,68 42500	17,68 27000
Steel		●	●	●	●	●
Stainless steel					●	
Cast iron		●	●	●		●
Non ferrous metals						
Heat resistant alloys					●	
hardened materials		●	●	●		●

Milling guide

Machining strategy	→ 174	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 174

15

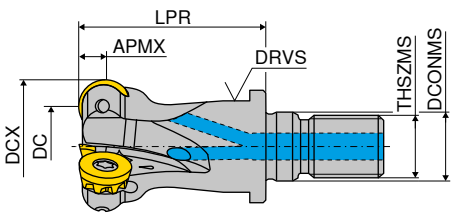
MaxiMill – Screw in cutter G 251 RS





Designation	DC mm	DCX mm	ZNF	APMX mm	DCONMS mm	LPR mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	2B/40 Article no. 50 684 ... EUR	
G251.20.R.05-05-RS	15	20	5	2,5	10,5	33	M10	15	31800	0,7	RDHX 0501..	278,80	220
G251.25.R.06-05-RS	20	25	6	2,5	12,5	35	M12	17	24450	0,7	RDHX 0501..	321,00	225
G251.32.R.07-05-RS	27	32	7	2,5	17,0	35	M16	24	19850	0,7	RDHX 0501..	385,10	232
G251.20.R.03-08-RS	12	20	3	4,0	10,5	33	M10	15	25000	1,2	RDHX 0802..	261,70	120
G251.25.R.04-08-RS	17	25	4	4,0	12,5	35	M12	17	19000	1,2	RDHX 0802..	292,90	125
G251.32.R.05-08-35-RS	24	32	5	4,0	17,0	35	M16	24	19000	1,2	RDHX 0802..	356,10	132
G251.20.R.02-10-RS	10	20	2	5,0	10,5	33	M10	15	30000	2	RP.X 10T3..	211,70	020
G251.25.R.03-10-RS	15	25	3	5,0	12,5	35	M12	17	30000	2	RP.X 10T3..	284,60	025
G251.32.R.04-10-RS	22	32	4	5,0	17,0	35	M16	24	25000	2	RP.X 10T3..	331,20	032
G251.25.R.02-12-35-RS	13	25	2	6,0	12,5	35	M12	17	25000	3,2	RP.X 1204..	205,30	525
G251.32.R.03-12-35-RS	20	32	3	6,0	17,0	35	M16	24	19850	3,2	RP.X 1204..	250,50	532
G251.35.R.03-12-35-RS	23	35	3	6,0	17,0	35	M16	24	15900	3,2	RP.X 1204..	250,50	535
G251.42.R.04-12-42-RS	30	42	4	6,0	17,0	42	M16	24	15000	3,2	RP.X 1204..	297,70	542

MaxiMill – Screw in cutter G 251

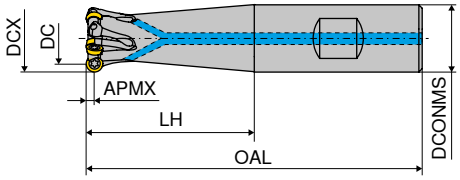




Designation	DC mm	DCX mm	ZNF	APMX mm	THSZMS	LPR mm	DCONMS mm	DRVS mm	torque moment Nm	Insert	2B Article no. 55 112 ... EUR	
G251.10.R.02-05	5	10	2	2,5	M8	20	8,5	10	0,7	RDHX 0501..	151,00	110
G251.12.R.03-05	7	12	3	2,5	M8	20	8,5	10	0,7	RDHX 0501..	203,40	112
G251.15.R.04-05	10	15	4	2,5	M8	20	8,5	10	0,7	RDHX 0501..	238,00	115
G251.16.R.04-05	11	16	4	2,5	M8	20	8,5	10	0,7	RDHX 0501..	238,00	216
G251.20.R.05-05	15	20	5	2,5	M10	25	10,5	15	0,7	RDHX 0501..	281,00	320
G251.20.R.03-08	12	20	3	4,0	M10	28	10,5	15	1,2	RDHX 0802..	203,40	420
G251.25.R.04-08	17	25	4	4,0	M12	28	12,5	17	1,2	RDHX 0802..	254,80	425
G251.32.R.06-08	24	32	6	4,0	M16	28	17,0	24	1,2	RDHX 0802..	336,60	432
G251.35.R.06-08	27	35	6	4,0	M16	28	17,0	24	1,2	RDHX 0802..	336,60	435
G251.20.R.02-10	10	20	2	5,0	M10	33	10,5	15	2	RP.X 10T3..	216,00	220
G251.32.R.04-10	22	32	4	5,0	M16	35	17,0	24	2	RP.X 10T3..	315,60	232
G251.35.R.05-10	25	35	5	5,0	M16	35	17,0	24	2	RP.X 10T3..	353,40	235
G251.25.R.02-12.IK	13	25	2	6,0	M12	35	12,5	17	3,2	RP.X 1204..	212,90	525
G251.32.R.03-12.IK	20	32	3	6,0	M16	35	17,0	24	3,2	RP.X 1204..	259,00	532
G251.35.R.03-12.IK	23	35	3	6,0	M16	35	17,0	24	3,2	RP.X 1204..	259,00	535
G251.42.R.04-12.IK	30	42	4	6,0	M16	42	17,0	24	3,2	RP.X 1204..	308,30	542

MaxiMill – End milling cutter C 251 RS



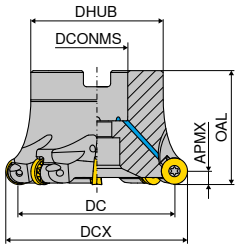


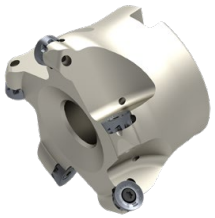


Designation	DC	DCX	ZNF	APMX	OAL	LH	DCONMS	RPMX	Insert	A 2B/40 Article no. 50 685 ...		B 2B/40 Article no. 50 685 ...	
	mm	mm		mm	mm	mm	mm	1/min.		EUR		EUR	
C251.10.R-02-05-B-12-20-RS	5	10	2	2,5	67	21,5	12	40000	RDHX 0501..			192,80	010
C251.10.R-02-05-A-25-165-RS	5	10	2	2,5	165	25,0	10	12000	RDHX 0501..	186,20	110		
C251.12.R-03-05-B-16-25-RS	7	12	3	2,5	75	25,0	16	40000	RDHX 0501..			243,20	012
C251.12.R-03-05-A-32-165-RS	7	12	3	2,5	165	32,0	12	16000	RDHX 0501..	234,20	112		
C251.16.R-04-05-B-32-RS	11	16	4	2,5	81	32,0	16	40000	RDHX 0501..			284,60	316
C251.16.R-04-05-A-40-165-RS	11	16	4	2,5	165	40,0	16	18000	RDHX 0501..	278,10	016		
C251.20.R-05-05-B-40-RS	15	20	5	2,5	91	40,0	20	31800	RDHX 0501..			331,20	620
C251.20.R-05-05-A-50-165-RS	15	20	5	2,5	165	50,0	20	18000	RDHX 0501..	324,90	120		
C251.16.R-02-08-B-32-RS	8	16	2	4,0	81	32,0	16	40000	RDHX 0802..			200,60	116
C251.16.R-02-08-A-40-165-RS	8	16	2	4,0	165	40,0	16	18000	RDHX 0802..	192,80	216		
C251.20.R-03-08-B-40-RS	12	20	3	4,0	91	40,0	20	31800	RDHX 0802..			254,90	220
C251.20.R-03-08-A-60-RS	12	20	3	4,0	110	50,0	20	30000	RDHX 0802..	261,70	020		
C251.20.R-03-08-A-50-200-RS	12	20	3	4,0	200	50,0	20	25000	RDHX 0802..	247,10	320		
C251.25.R-04-08-B-50-RS	17	25	4	4,0	107	50,0	25	25500	RDHX 0802..			301,40	625
C251.25.R-04-08-A-60-RS	17	25	4	4,0	116	60,0	25	19000	RDHX 0802..	292,90	125		
C251.25.R-04-08-A-60-225-RS	17	25	4	4,0	225	60,0	25	18000	RDHX 0802..	293,60	225		
C251.20.R-02-10-A-50-RS	10	20	2	5,0	102	50,0	20	25000	RP.X 10T3..	213,50	420		
C251.20.R-02-10-A-50-200-RS	10	20	2	5,0	200	50,0	20	25000	RP.X 10T3..	213,50	520		
C251.25.R.03-10-A-60-RS	15	25	3	5,0	116	60,0	25	25000	RP.X 10T3..	288,50	025		
C251.25.R-03-10-B-60-RS	15	25	3	5,0	116	60,0	25	20000	RP.X 10T3..			288,50	325
C251.25.R-03-10-A-60-225-RS	15	25	3	5,0	225	60,0	25	18000	RP.X 10T3..	288,50	425		
C251.32.R.04-10-A-70-RS	22	32	4	5,0	127	70,0	32	25000	RP.X 10T3..	324,90	032		
C251.25.R-02-12-B-30-RS	13	25	2	6,0	86	30,0	25	25000	RP.X 1204..			263,10	525
C251.32.R-03-12-A-RS	20	32	3	6,0	100	40,0	32	19000	RP.X 1204..	304,30	232		
C251.32.R-03-12-B-40-RS	20	32	3	6,0	100	40,0	32	19000	RP.X 1204..			304,30	132

MaxiMill – Shell mill A 251 RS





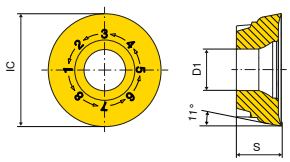


Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 686 ...	
	mm	mm		mm	mm	mm	mm	1/min.	Nm		EUR	
A251.40.R.03-10-RS	30	40	3	5	40	38	16	15900	2	RP.X 10T3..	315,60	**240**
A251.40.R.05-10-RS	30	40	5	5	40	38	16	16000	2	RP.X 10T3..	355,70	**140**
A251.42.R.06-10-RS	32	42	6	5	40	38	16	16000	2	RP.X 10T3..	408,80	**142**
A251.50.R.04-10-RS	40	50	4	5	40	43	22	12700	2	RP.X 10T3..	346,60	**350**
A251.50.R.06-10-RS	40	50	6	5	40	43	22	12500	2	RP.X 10T3..	423,00	**150**
A251.52.R.06-10-RS	42	52	6	5	40	43	22	12500	2	RP.X 10T3..	423,00	**152**
A251.40.R.04-12-RS	28	40	4	6	40	38	16	15900	3,2	RP.X 1204..	327,20	**340**
A251.50.R.04-12-RS	38	50	4	6	40	43	22	12700	3,2	RP.X 1204..	337,70	**250**
A251.50.R.05-12-RS	38	50	5	6	40	43	22	12500	3,2	RP.X 1204..	397,10	**050**
A251.52.R.05-12-RS	40	52	5	6	40	43	22	12500	3,2	RP.X 1204..	416,50	**052**
A251.63.R.06-12-RS	51	63	6	6	40	48	22	10000	3,2	RP.X 1204..	490,30	**063**
A251.66.R.07-12-RS	54	66	7	6	40	48	22	9000	3,2	RP.X 1204..	516,90	**166**
A251.80.R.05-12-RS	68	80	5	6	50	58	27	7950	3,2	RP.X 1204..	447,50	**180**
A251.80.R.07-12-RS	68	80	7	6	50	58	27	8000	3,2	RP.X 1204..	553,10	**080**
A251.100.R.06-12-RS	88	100	6	6	50	78	32	6350	3,2	RP.X 1204..	499,40	**100**
A251.100.R.10-12-RS	88	100	10	6	50	78	32	6350	3,2	RP.X 1204..	729,60	**200**
A251.50.R.04-16-RS	34	50	4	8	40	48	22	12700	5	RP.X 1605..	397,10	**450**
A251.52.R.04-16-RS	36	52	4	8	40	48	22	10100	5	RP.X 1605..	397,10	**452**
A251.63.R.05-16-RS	47	63	5	8	40	48	22	10100	5	RP.X 1605..	500,60	**163**
A251.66.R.05-16-RS	50	66	5	8	40	48	22	7950	5	RP.X 1605..	504,30	**466**
A251.80.R.06-16-RS	64	80	6	8	50	58	27	7950	5	RP.X 1605..	608,00	**280**
A251.100.R.07-16-RS	84	100	7	8	50	78	32	6350	5	RP.X 1605..	710,30	**300**
A251.125.R.08-16-RS	109	125	8	8	63	88	40	5050	5	RP.X 1605..	751,80	**225**
A251.80.R.05-20-RS	60	80	5	10	50	58	27	7950	5	RP.X 2006..	514,80	**380**
A251.100.R.06-20-RS	80	100	6	10	50	78	32	6350	5	RP.X 2006..	615,80	**400**
A251.125.R.06-20-RS	105	125	6	10	63	88	40	5050	5	RP.X 2006..	623,50	**125**

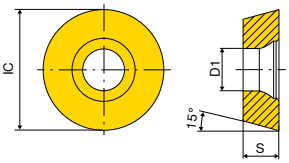
Spare parts	Y7 TORX® blade		Y7 Clamping key – T		Y7 Key D		2A/28 Power Screw		2A/28 Molykote		2A/28 Clamping screw		Y7 Torque screwdriver	
	Article no. 80 950 ...		Article no. 80 397 ...		Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 80 950 ...	
Insert	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
RDHX 0501..	4,76	**031**			8,44	**108**			4,38	**303**	2,57	**149**	118,90	**191**
RDHX 0802..	4,76	**033**			7,80	**110**			4,38	**303**	2,57	**116**	118,90	**191**
RP.X 10T3..	4,76	**035**	3,91	**040**	9,14	**112**	12,48	**151**	4,38	**303**	2,57	**840**	128,60	**192**
RP.X 1204..	4,76	**036**	3,91	**040**	9,28	**113**	12,48	**151**	4,38	**303**	3,14	**304**	128,60	**192**
RP.X 1605..	4,76	**037**	4,24	**050**	9,95	**114**	17,14	**154**	4,38	**303**	2,52	**280**	131,90	**193**
RP.X 2006..	4,76	**037**			9,95	**114**			4,38	**303**	4,09	**302**	131,90	**193**

RDHX / RPHX / RPNX

Designation	IC	D1	S
	mm	mm	mm
RDHX 0501..	5	2,5	1,59
RDHX 0802..	8	2,8	2,38
RP.X 10T3..	10	3,4	3,97
RP.X 1204..	12	4,4	4,76
RP.X 1605..	16	5,5	5,56
RP.X 2006..	20	6,0	6,35



RP.X 10T3.. / RP.X 1204.. / RP.X 1605.. / RPNX 2006..

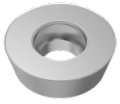


RDHX 0501.. / RDHX 0802..

RDHX

	-SN CTCP230	-SN CTPP235	-F50 CTPM240	-F50 CTPM245
	-SN DCX1230	-SN DPX1235	-F50 DPX2240	-F50 DPX2245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	RDHX	RDHX	RDHX	RDHX
	1B/61	1B/61	NEW 1B/61	1H/17
ISO	Article no. 51 048 ...	Article no. 51 048 ...	Article no. 51 083 ...	Article no. 51 083 ...
	EUR	EUR	EUR	EUR
0501MOSN	12,11 020	12,11 120		11,12 465
0802M4SN				14,64 471
0802MOSN	12,36 025	12,36 125	12,36 420	14,64 470
Steel	●	●	○	●
Stainless steel	○	○	●	●
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

RDHX

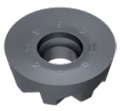
	-EN CTCK215	-FN H216T	-M31 CTC5240	-F50 CTCS245
	-EN DCX3215	-FN CWK26	-M31 HCF5240	
	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
				
	RDHX	RDHX	RDHX	RDHX
	1B/61	1B/61	1H/D4	NEW 1H/D4
ISO	Article no. 51 048 ...	Article no. 50 481 ...	Article no. 50 481 ...	Article no. 51 083 ...
	EUR	EUR	EUR	EUR
0501MOFN		9,61 600		
0802M4EN			14,64 50100	
0802MOEN	12,36 520		14,64 500	14,64 570
0802MOFN		9,91 602		
Steel	○			
Stainless steel				
Cast iron	●	○		
Non ferrous metals		●		
Heat resistant alloys			●	●
hardened materials				

15

RPHX / RPNX

	-SN TCM10	-F50 CTCP230	-M50 CTCP230	-SN CTCP230	-SN CTCP230
	-SN CWC10	-F50 DCX1230	-M50 DCX1230	-SN DCX1230	-SN DCX1230
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	CERMET RPHX	RPNX	RPNX	RPHX	RPNX
	1B/79	1B/18	1B/61	1B/61	1B/61
ISO	Article no. 50 483 ...	Article no. 51 055 ...	Article no. 51 054 ...	Article no. 51 052 ...	Article no. 51 057 ...
	EUR	EUR	EUR	EUR	EUR
10T3MOEN		12,83 020			
10T3MOSN	12,83 900		9,77 020	12,83 020	
1204MOEN		11,22 025			
1204MOSN	14,06 902		11,22 025	14,06 025	11,22 025
1605MOSN			15,26 030	19,13 030	15,26 030
2006MOSN					19,85 035
Steel	●	●	●	●	●
Stainless steel	●	○	○	○	○
Cast iron	○				
Non ferrous metals					
Heat resistant alloys					
hardened materials					

RPHX / RPNX

	-F50 CTPP235	-F50 CTPP235	-M30 CTPP235	-M30 CTPP235
	-F50 DPX1235	-F50 DPX1235	-M30 DPX1235	-M30 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	RPHX	RPNX	RPHX	RPNX
	1B/61	1B/61	1B/61	1B/61
ISO	Article no. 51 051 ...	Article no. 51 055 ...	Article no. 51 049 ...	Article no. 51 053 ...
	EUR	EUR	EUR	EUR
10T3MOEN			12,83 120	
10T3MOSN	12,83 12000	9,77 120		
1204MOEN		11,22 125		
1204MOSN	14,06 125			
1605MOSN		15,26 130		
2006MOEN				19,85 120
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

RPNX / RPHX

	-M50 CTPP235	-M50 CTPP235	-SN CTPP235	-SN CTPP235
	-M50 DPX1235	-M50 DPX1235	-SN DPX1235	-SN DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	RPNX	RPHX	RPHX	RPNX
	1B/61	NEW 1B/61	1B/61	1B/18
ISO	**Article no. 51 054 ...**	**Article no. 51 050 ...**	**Article no. 51 052 ...**	**Article no. 51 057 ...**
	EUR	EUR	EUR	EUR
10T3MOSN	9,77 **12000**	12,83 **12000**	12,83 **120**	
1204MOSN	11,22 **125**		14,06 **125**	11,22 **125**
1605MOSN	15,26 **130**		19,13 **130**	15,26 **130**
2006MOSN				19,85 **135**
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

RPHX

	-F50 CTPM225	-M30 CTPM225	-SN CTPM225	-F50 CTCM235	-M30 CTCM235
	-F50 DPX2225	-M30 DPX2225	-SN DPX2225	-F50 DCX2235	-M30 DCX2235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	RPHX	RPHX	RPHX	RPHX	RPHX
	1B/61	1B/61	1B/61	1B/61	1B/61
ISO	**Article no. 51 051 ...**	**Article no. 51 049 ...**	**Article no. 51 052 ...**	**Article no. 51 051 ...**	**Article no. 51 049 ...**
	EUR	EUR	EUR	EUR	EUR
1204MOEN		14,06 **225**		14,06 **325**	
1204MOSN	14,06 **225**		14,06 **225**		14,06 **325**
Steel	○	○	○	○	○
Stainless steel	●	●	●	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

RPHX / RPNX

ISO	-F50 CTPM240 -F50 DPX2240 DRAGONSKIN RPHX 1B/61 Article no. 51 051 ... EUR		-F50 CTPM240 -F50 DPX2240 DRAGONSKIN RPNX 1B/61 Article no. 51 055 ... EUR		-M30 CTPM240 -M30 DPX2240 DRAGONSKIN RPHX 1B/61 Article no. 51 049 ... EUR		-M30 CTPM240 -M30 DPX2240 DRAGONSKIN RPNX 1B/61 Article no. 51 053 ... EUR		-M50 CTPM240 -M50 DPX2240 DRAGONSKIN RPHX 1B/61 Article no. 51 050 ... EUR	
10T3MOEN					12,83	420			12,83	420
10T3MOSN	12,83	420								
1204MOEN					14,06	425			14,06	425
1204MOSN	14,06	425								
1605MOEN					19,13	430				
1605MOSN	19,13	430								
2006MOEN							19,85	420		
2006MOSN			19,85	435						
Steel	○		○		○		○		○	
Stainless steel	●		●		●		●		●	
Cast iron										
Non ferrous metals										
Heat resistant alloys										
hardened materials										

RPHX / RPNX

ISO	CTPM245 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 052 ... EUR		-F50 CTPM245 -F50 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 051 ... EUR		-F50 CTPM245 -F50 DPX2245 DRAGONSKIN RPNX 1H/17 Article no. 51 055 ... EUR		-M32 CTPM245 -M32 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 108 ... EUR		-M50 CTPM245 -M50 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 050 ... EUR	
10T3M4SN			16,19	470 [1]	13,46	470 [1]			16,19	470 [1]
10T3M8SN			16,19	471	13,46	471			16,19	471
1204M4EN	17,84	475 [1]					17,84	475 [1]		
1204M4SN			17,84	475 [1]	15,84	475 [1]			17,84	475 [1]
1204M6SN			17,84	476					17,84	476
1204M8SN			17,84	477	15,84	476			17,84	477
1605M8SN			24,34	480						
2006M4SN			30,83	485 [1]						
2006M8SN					24,34	485				
Steel	●		●		●		●		●	
Stainless steel	●		●		●		●		●	
Cast iron										
Non ferrous metals										
Heat resistant alloys										
hardened materials										

1) Insert with 4 indexes

RPNX / RPHX

	-R30 CTCK215	-SN CTCK215	-SN CTCK215	-SN CTPK220	-27P H216T
	-R30 DCX3215	-SN DCX3215	-SN DCX3215	-SN DPX3220	-ALP CWK26
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
					
	RPNX	RPHX	RPNX	RPNX	RPHX
	1B/18	1B/61	1B/18	1B/61	1A/90
ISO	**Article no. 51 056 ...**	**Article no. 51 052 ...**	**Article no. 51 057 ...**	**Article no. 51 057 ...**	**Article no. 50 483 ...**
	EUR	EUR	EUR	EUR	EUR
10T3MOEN	9,77 **520**				
10T3MOFN					14,65 **600**
10T3MOSN		12,83 **520**		9,77 **620**	
1204MOEN	11,22 **525**				
1204MOFN					16,24 **602**
1204MOSN		14,06 **525**	11,22 **525**	11,22 **625**	
1605MOFN					22,16 **604**
1605MOSN		19,13 **530**	15,26 **530**	15,26 **630**	
2006MOSN			19,85 **535**	19,85 **635**	
Steel	○	○	○	○	
Stainless steel					
Cast iron	●	●	●	●	○
Non ferrous metals					●
Heat resistant alloys					
hardened materials					

RPHX / RPNX

	-M31 CTC5240	-F50 CTCS245	-F50 CTCS245	-R60 CTP6215
	-M31 HCF5240			-R60 CCN6215
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
				
	RPHX	RPHX	RPNX	RPNX
	1H/D4	NEW 1H/D4	NEW 1H/D4	1B/61
ISO	**Article no. 50 493 ...**	**Article no. 51 051 ...**	**Article no. 51 055 ...**	**Article no. 50 508 ...**
	EUR	EUR	EUR	EUR
10T3M4EN	16,19 **550** [1]			
10T3M4SN		16,19 **570** [1]		
10T3M8EN	16,19 **551**			
10T3M8SN		16,19 **571**		
1204M4EN	17,84 **552** [1]			
1204M4SN		17,84 **575**		
1204M6EN	17,84 **56200**	17,84 **57800**		
1204M8EN	17,84 **582**			12,11 **300**
1204M8SN		17,84 **577**		
1605M8EN	24,34 **555**	24,34 **58100**		
2006M8SN			24,34 **585**	
Steel				
Stainless steel				
Cast iron				●
Non ferrous metals				
Heat resistant alloys	●	●	●	
hardened materials				●

1) Insert with 4 indexes

Milling guide

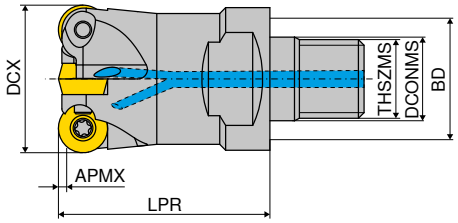
Machining strategy	→ 176	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 175

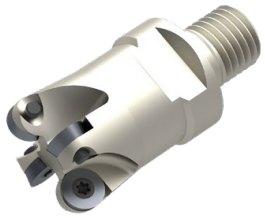
15

Button insert milling cutter R 1000 G

▲ Insert angle 0°





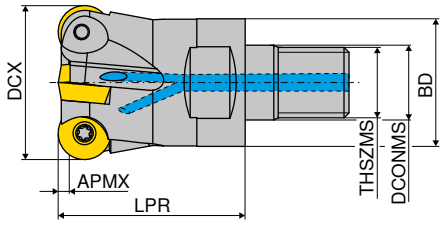


Designation	DCX	ZNF	APMX	THSZMS	LPR	DCONMS	BD	torque moment	Insert	WA Article no. 56 403 ...	
	mm		mm		mm	mm	mm	Nm		EUR	
R1000G.15.4.M8-05.IK	15	4	1,3	M8	20,5	8,5	13,8	0,43	RDHX 0501..	166,70	**151**
R1000G.20.5.M10-05.IK	20	5	1,3	M10	25,5	10,5	18,0	0,43	RDHX 0501..	197,20	**201**
R1000G.12.2.M8-07.IK	12	2	1,5	M8	28,5	8,5	11,8	0,75	RD.X 07T1..	108,10	**123**
R1000G.15.3.M8-07.IK	15	3	1,5	M8	28,5	8,5	13,8	0,75	RD.X 07T1..	130,10	**152**
R1000G.20.4.M10-07.IK	20	4	1,5	M10	28,5	10,5	18,0	0,75	RD.X 07T1..	167,70	**202**
R1000G.25.5.M12-07.IK	25	5	1,5	M12	28,5	10,5	21,0	0,75	RD.X 07T1..	191,90	**251**
R1000G.15.2.M8-07.IK	15	2	1,5	M8	28,5	8,5	13,8	0,9	RD.X 0702..	110,10	**153**
R1000G.16.3.M8-07.IK	16	3	1,5	M8	28,5	8,5	13,8	0,9	RD.X 0702..	133,20	**161**
R1000G.20.4.M10-07.IK	20	4	1,5	M10	28,5	10,5	18,0	0,9	RD.X 0702..	167,70	**203**
R1000G.25.5.M12-07.IK	25	5	1,5	M12	28,5	12,5	21,0	0,9	RD.X 0702..	191,90	**252**
R1000G.30.5.M16-07.IK	30	5	1,5	M16	28,5	17,0	29,0	0,9	RD.X 0702..	195,00	**301**
R1000G.35.6.M16-07.IK	35	6	1,5	M16	28,5	17,0	29,0	0,9	RD.X 0702..	219,20	**351**
R1000G.42.7.M16-07.IK	42	7	1,5	M16	42,5	17,0	29,0	0,9	RD.X 0702..	260,00	**421**
R1000G.20.2.M10-10.IK	20	2	2,8	M10	29,0	10,5	18,0	2,4	RD.X 1003..	117,40	**204**
R1000G.25.2.M12-10.IK	25	2	2,8	M12	33,0	12,5	21,0	2,4	RD.X 1003..	117,40	**253**
R1000G.25.3.M12-10.IK	25	3	2,8	M12	33,0	12,5	21,0	2,4	RD.X 1003..	122,70	**254**
R1000G.30.4.M12-10.IK	30	4	2,3	M12	33,0	12,5	21,0	2,4	RD.X 1003..	168,90	**302**
R1000G.30.4.M16-10.IK	30	4	2,8	M16	43,0	17,0	23,0	2,4	RD.X 1003..	168,90	**303**
R1000G.35.5.M16-10.IK	35	5	2,8	M16	43,0	17,0	29,0	2,4	RD.X 1003..	207,70	**352**
R1000G.42.5.M16-10.IK	42	5	2,8	M16	43,0	17,0	29,0	2,4	RD.X 1003..	219,20	**422**
R1000G.42.6.M16-10.IK	42	6	2,8	M16	43,0	17,0	29,0	2,4	RD.X 1003..	231,70	**423**
R1000G.24.2.M12-12.IK	24	2	3,0	M12	33,0	12,5	21,0	2,4	RD.X 12T3..	121,60	**241**
R1000G.35.3.M16-12.IK	35	3	3,0	M16	43,0	17,0	29,0	2,4	RD.X 12T3..	136,30	**353**
R1000G.35.4.M16-12.IK	35	4	3,0	M16	43,0	17,0	29,0	2,4	RD.X 12T3..	176,20	**354**
R1000G.42.4.M16-12.IK	42	4	3,0	M16	43,0	17,0	29,0	2,4	RD.X 12T3..	192,90	**424**
R1000G.42.5.M16-12.IK	42	5	3,0	M16	43,0	17,0	29,0	2,4	RD.X 12T3..	213,90	**425**
R1000G.32.2.M16-16.IK	32	2	4,0	M16	43,5	17,0	29,0	4,3	RD.X 1604..	141,60	**321**
R1000G.35.3.M16-16.IK	35	3	4,0	M16	43,5	17,0	29,0	4,3	RD.X 1604..	174,10	**355**
R1000G.40.2.M16-20.IK	40	2	7,0	M16	53,5	17,0	29,0	4,3	RD.X 2006..	197,20	**401**

Button insert milling cutter R 1007 G

- Insert angle 7°
- for Steel < 10 % Cr



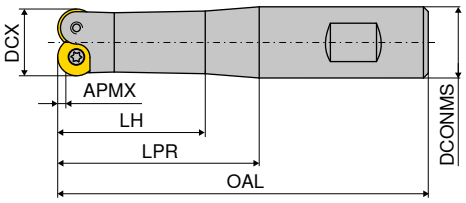




Designation	DCX	ZNF	APMX	THSZMS	LPR	DCONMS	BD	torque moment	Insert	WA Article no. 56 405 ...	
	mm		mm		mm	mm	mm	Nm		EUR	
R1007G.25.3.M12-10.IK	25	3	2,5	M12	32,5	12,5	21	2,4	RD.X 1003..	122,70	251
R1007G.42.6.M16-10.IK	42	6	2,5	M16	42,5	17,0	29	2,4	RD.X 1003..	231,70	421
R1007G.35.3.M16-12.IK	35	3	3,0	M16	42,5	17,0	29	2,4	RD.X 12T3..	154,10	351
R1007G.35.4.M16-12.IK	35	4	3,0	M16	42,5	17,0	29	2,4	RD.X 12T3..	176,20	352

Button insert milling cutter R 1000 C

- Insert angle 0°



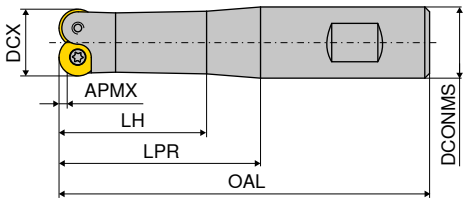




Designation	DCX	ZNF	APMX	OAL	LPR	LH	DCONMS	torque moment	Insert	WA Article no. 56 441 ...	
	mm		mm	mm	mm	mm	mm	Nm		EUR	
R1000C.8.1.30-05	8	1	1,3	75	30	18	10	0,43	RDHX 0501..	120,60	081
R1000C.10.2.30-05	10	2	1,3	75	30	23	10	0,43	RDHX 0501..	133,20	101
R1000C.12.3.30-05	12	3	1,3	81	30	23	12	0,43	RDHX 0501..	148,90	121
R1000C.12.2.30-07	12	2	1,5	76	30	23	12	0,75	RD.X 07T1..	95,32	122

Button insert milling cutter R 1002 C

▲ Insert angle 0°





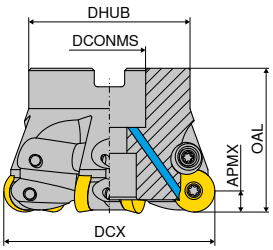
B

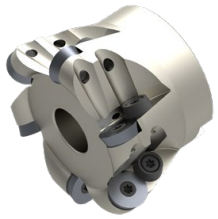
Designation	DCX	ZNF	APMX	OAL	LPR	LH	DCONMS	Insert	WA Article no. 56 443 ... EUR	
	mm		mm	mm	mm	mm	mm			
R1002C.12.2.40-07	12	2	1,5	89	40	19,5	16	RD.X 07T1..	97,30	121
R1002C.12.2.60-07	12	2	1,5	110	60	19,5	16	RD.X 07T1..	104,30	122
R1002C.12.2.80-07	12	2	1,5	129	80	19,5	16	RD.X 07T1..	111,10	123
R1002C.15.2.40-07	15	2	2,6	89	40	23,0	16	RD.X 0702..	97,30	151
R1002C.15.2.60-07	15	2	2,6	109	60	23,0	16	RD.X 0702..	103,50	152
R1002C.15.2.80-07	15	2	2,6	131	80	22,0	20	RD.X 0702..	111,10	153
R1002C.15.2.100-07	15	2	2,6	151	100	22,0	20	RD.X 0702..	119,60	154
R1002C.20.2.40-10	20	2	4,0	91	40	23,0	20	RD.X 1003..	110,10	201
R1002C.20.2.60-10	20	2	4,0	111	60	23,0	20	RD.X 1003..	113,30	202
R1002C.20.2.80-10	20	2	4,0	137	80	23,0	25	RD.X 1003..	118,50	203
R1002C.20.2.100-10	20	2	4,0	157	100	23,0	25	RD.X 1003..	124,80	204
R1002C.20.2.120-10	20	2	4,0	177	125	23,0	25	RD.X 1003..	131,10	205

Button insert milling cutter R 1000 A

▲ Insert angle 0°





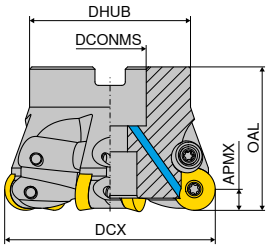


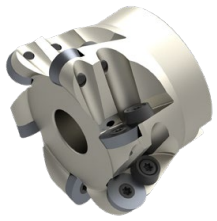
Designation	DCX	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	WA Article no. 56 407 ... EUR	
	mm		mm	mm	mm	mm	Nm			
R1000A.42.6.43-10.IK	42	6	2,8	43,0	16	35	2,4	RD.X 1003..	231,70	420
R1000A.42.4.43-12.IK	42	4	3,0	43,0	16	35	2,4	RD.X 12T3..	186,70	421
R1000A.42.5.43-12.IK	42	5	3,0	43,0	16	35	2,4	RD.X 12T3..	213,90	422
R1000A.52.5.53-12.IK	52	5	3,5	53,0	22	40	2,4	RD.X 12T3..	231,70	521
R1000A.52.4.53,5-16.IK	52	4	4,7	53,5	22	40	4,3	RD.X 1604..	227,50	522
R1000A.66.5.53,5-16.IK	66	5	5,1	53,5	27	48	4,3	RD.X 1604..	269,50	661
R1000A.80.6.53,5-16.IK	80	6	5,8	53,5	27	60	4,3	RD.X 1604..	345,00	801

Button insert milling cutter R 1007 A

- Insert angle 7°
- for Steel < 10 % Cr + Milling machines with low power







Designation	DCX	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	WA Article no. 56 409 ...	
	mm		mm	mm	mm	mm	Nm		EUR	
R1007A.42.6.42,5-10.IK	42	6	3,5	42,5	16	35	2,4	RD.X 1003..	231,70	**421**
R1007A.52.7.52,5-10.IK	52	7	3,5	52,5	22	40	2,4	RD.X 1003..	338,60	**521**
R1007A.52.5.52,5-12.IK	52	5	3,5	52,5	22	40	2,4	RD.X 12T3..	231,70	**522**
R1007A.66.6.52,5-12.IK	66	6	3,5	52,5	27	48	2,4	RD.X 12T3..	274,70	**661**
R1007A.80.7.54,5-12.IK	80	7	3,5	54,5	27	60	2,4	RD.X 12T3..	345,00	**801**
R1007A.52.5.53-16.IK	52	5	4,1	53,0	22	40	4,3	RD.X 1604..	254,80	**523**
R1007A.66.5.53-16.IK	66	5	4,6	53,0	27	48	4,3	RD.X 1604..	269,50	**662**
R1007A.66.6.53-16.IK	66	6	5,1	53,0	27	48	4,3	RD.X 1604..	308,30	**663**
R1007A.80.6.53-16.IK	80	6	5,1	53,0	27	60	4,3	RD.X 1604..	345,00	**802**
R1007A.100.7.53-16	100	7	5,1	53,0	32	70	4,3	RD.X 1604..	426,70	**910** [1]
R1007A.125.8.53-16	125	8	5,2	53,0	40	90	4,3	RD.X 1604..	483,40	**925** [1]
R1007A.160.9.53-16	160	9	5,1	53,0	40	120	4,3	RD.X 1604..	661,70	**960** [1]
R1007A.66.5.53-20.IK	66	5	7,0	53,0	27	48	4,3	RD.X 2006..	323,00	**664**
R1007A.80.5.53-20.IK	80	5	7,4	53,0	27	60	4,3	RD.X 2006..	399,50	**803**

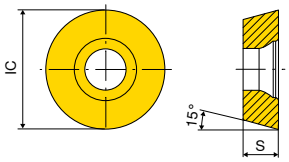
1) Without Through Coolant

Spare parts	Y7 TORX® blade Article no. 80 950 ...		WA Clamping Screw Article no. 56 950 ...		WA over clamp Article no. 56 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
Insert	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
RD.X 0702..	4,76	**032**					7,80	**109**	4,38	**303**	2,64	**006**	118,90	**191**
RD.X 07T1..	4,76	**032**					7,80	**109**	4,38	**303**	2,64	**004**	118,90	**191**
RD.X 1003..	4,76	**036**					9,28	**113**	4,38	**303**	3,40	**010**	128,60	**192**
RD.X 12T3..	4,76	**036**	2,07	**022**			9,28	**113**	4,38	**303**	3,40	**010**	128,60	**192**
RD.X 1604..	4,76	**037**			1,45	**210**	9,95	**114**	4,38	**303**	3,84	**012**	128,60	**192**
RD.X 2006..	4,76	**037**			1,45	**210**	9,95	**114**	4,38	**303**	3,84	**012**	128,60	**192**
RDHX 0501..							8,44	**108**	4,38	**303**	2,56	**002**	118,90	**191**

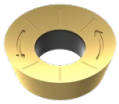
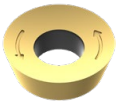
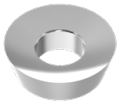
15

RDHX / RDMX / RDEX / RDPX

Designation	IC	S
	mm	mm
RDHX 0501..	5	1,50
RD.X 07T1..	7	1,99
RD.X 0702..	7	2,38
RD.X 1003..	10	3,18
RD.X 12T3..	12	3,97
RD.X 1604..	16	4,76
RDHX 2006..	20	6,00



RDHX / RDMX / RDEX / RDPX

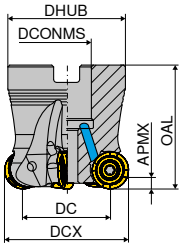
	WTN1205		WAN1240		WAX1240		-HP WAN2225		-F30P WUN4210	
										
	RDHX		RDMX		RDEX		RDPX		RDHX	
	WB		WB		WB		WB		WB	
ISO	Article no. 56 302 ...		Article no. 56 309 ...		Article no. 56 314 ...		Article no. 56 348 ...		Article no. 56 304 ...	
	EUR		EUR		EUR		EUR		EUR	
0501MOT	12,00	100								
0702MOE									11,56	611
0702MOT	12,32	111			8,58	611				
07T1MOE									11,56	621
07T1MOT	12,32	121			8,44	621				
1003MOS							12,43	231		
1003MOT	12,43	131	9,17	731	9,03	631			12,97	631
12T3MOS							13,08	241		
12T3MOT	13,08	141	10,62	741	10,29	641			15,89	641
1604MOS							16,43	251		
1604MOT	13,08	151	11,68	751	11,46	651			19,24	651
2006MOT	17,95	161							21,08	661
Steel	●		●		●					
Stainless steel	○		○				●			
Cast iron	●		○		○					
Non ferrous metals	○								●	
Heat resistant alloys			○				○			
hardened materials	●				○					

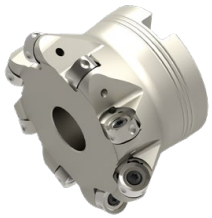
Milling guide

Machining strategy	→ 180+181	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 177–179

MaxiMill – Shell mill A 252







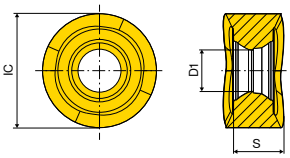
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS mm	torque moment Nm	Insert	2B/40 Article no. 50 689 ... EUR	
A252.40.R.05-10	30	40	5	2,5	40	38	16	2	RNHU 1004..	409,50	**140**
A252.42.R.05-10	32	42	5	2,5	40	38	16	2	RNHU 1004..	469,60	**142**
A252.50.R.06-10	40	50	6	2,5	40	43	22	2	RNHU 1004..	486,90	**150**
A252.52.R.07-10	42	52	7	2,5	40	43	22	2	RNHU 1004..	528,80	**152**
A252.63.R.08-10	53	63	8	2,5	40	48	22	2	RNHU 1004..	599,30	**16300**
A252.80.R.10-10	70	80	10	2,5	50	58	27	2	RNHU 1004..	681,70	**18000**
A252.40.R.04-12	28	40	4	3,0	40	38	16	3,2	RNHU 1205..	376,20	**240**
A252.50.R.05-12	38	50	5	3,0	40	43	22	3,2	RNHU 1205..	456,80	**250**
A252.52.R.05-12	40	52	5	3,0	40	43	22	3,2	RNHU 1205..	457,90	**252**
A252.63.R.06-12	51	63	6	3,0	40	48	22	3,2	RNHU 1205..	564,30	**263**
A252.66.R.07-12	54	66	7	3,0	40	48	22	3,2	RNHU 1205..	594,40	**266**
A252.80.R.08-12	68	80	8	3,0	50	58	27	3,2	RNHU 1205..	649,20	**280**
A252.100.R.10-12	88	100	10	3,0	50	78	32	3,2	RNHU 1205..	772,60	**30000**
A252.125.R.12-12	113	125	12	3,0	63	88	40	3,2	RNHU 1205..	934,70	**32500**

Spare parts	Y7 TORX® blade Article no. 80 950 ... EUR		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Power Screw Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		Y7 Torque screwdriver Article no. 80 950 ... EUR	
RNHU 1004.. (Ø40 – Ø80)	5,26	**053**			11,56	**127**			4,38	**303**	3,09	**710**	128,60	**192**
RNHU 1205.. (Ø40)	5,26	**054**	3,91	**040**	11,89	**128**	12,48	**151**	4,38	**303**	3,18	**839**	128,60	**192**
RNHU 1205.. (Ø50 – Ø125)	5,26	**054**			11,89	**128**			4,38	**303**	3,18	**839**	128,60	**192**

15

RNHU

Designation	IC	D1	S
	mm	mm	mm
RNHU 1004..	10	3,4	4,60
RNHU 1205..	12	4,4	5,30



RNHU

	-M50 CTPP235	-F50 CTPM240	-M31 CTPM245 -M31 DPX2245	-M32 CTPM245 -M32 DPX2245	-M31 CTC5240 -M31 HCF5240	-M31 CTC5240 -M31 HCF5240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	RNHU	RNHU	RNHU	RNHU	RNHU	RNHU
	NEW 1B/61	NEW 1B/61	1H/17	1H/17	1H/D4	1H/D4
ISO	Article no. 51 130 ...	Article no. 51 129 ...	Article no. 51 106 ...	Article no. 51 107 ...	Article no. 50 520 ...	Article no. 50 521 ...
	EUR	EUR	EUR	EUR	EUR	EUR
1004M4ER	18,34 12000	18,34 42000	24,81 470	24,81 470	24,81 550	
1205M4ER		19,86 42500	27,16 475	27,16 475		27,16 552
1205M4SR	19,86 12500					
Steel	●	○	●	●		
Stainless steel	○	●	●	●		
Cast iron						
Non ferrous metals						
Heat resistant alloys					●	●
hardened materials						

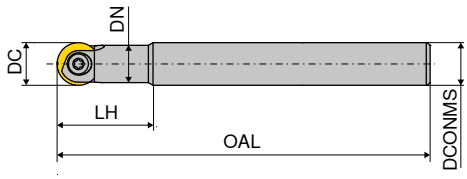
Milling guide

Grade description	→ 209+210	Cutting data appoximate values	→ 182
ISO Designation System	→ 194+195		

Copy milling cutter K 2000C / K 2001C

▲ with carbide shank









Designation	DC	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 100 ...		WA Article no. 56 101 ...	
	mm	mm	mm	mm	mm	Nm	EUR		EUR	
K2000C.6.16.100	6	5,3	16	100	8	0,6	358,60	060 [1]		
K2000C.6.20.100	6	5,8	20	100	6	0,6	358,60	061 [1]		
K2000C.6.70.150	6	5,8	70	150	6	0,6	465,50	062 [1]		
K2000C.6.100.200	6	5,8	100	200	6	0,6	564,10	063 [1]		
K2000C.8.25.80	8	7,0	25	80	8	1	379,60	081 [1]		
K2000C.8.25.100	8	7,0	25	100	8	1	379,60	082 [1]		
K2000C.8.25.150	8	7,0	40	150	8	1	421,50	083 [1]		
K2000C.10.35.80	10	8,8	35	80	10	5	458,20	101 [1]		
K2000C.10.35.120	10	8,8	35	120	10	5	471,90	102 [1]		
K2000C.10.50.150	10	8,8	50	150	10	5	523,30	103 [1]		
K2000C/K2001C.12.35.80	12	10,5	35	80	12	5	476,00	121 [1]	476,00	121
K2000C/K2001C.12.35.120	12	10,5	35	120	12	5	497,00	122 [1]	497,00	122
K2000C/K2001C.12.50.160	12	10,5	50	160	12	5	531,60	123 [1]	531,60	123
K2001C.16.40.100	16	14,0	40	100	16	5			655,40	161
K2001C.16.40.140	16	14,0	40	140	16	5			655,40	162
K2001C.16.55.175	16	14,0	55	175	16	5			714,00	163
K2001C.20.50.100	20	18,0	50	100	20	5			834,60	201
K2001C.20.50.140	20	18,0	50	140	20	5			834,60	202
K2001C.20.75.190	20	18,0	75	190	20	5			992,00	203
K2001C.25.60.160	25	22,4	60	160	25	5			1.182,00	252
K2001C.25.90.210	25	22,4	90	210	25	5			1.478,00	253

1) Without Through Coolant

Applicable inserts



ROHX-FM3, ROHX-FM4, ROHX-FM6,
ROHX-MR5, ROGX-MR4

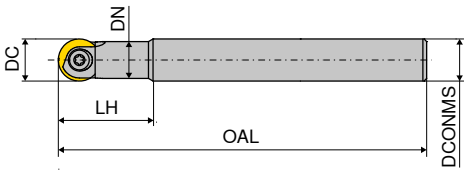


XOHX06.. -MR2, XOHX-FM1

15

Copy milling cutter K 2002C

▲ cylindrical steel shank version





Designation	DC	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 102 ...	
	mm	mm	mm	mm	mm	Nm	EUR	
K2002C.12.32.90	12	10,5	32	90	12	5	93,53	**121**
K2002C.12.32.130	12	10,5	32	130	12	5	93,53	**122**
K2002C.12.46.150	12	10,5	46	150	12	5	97,83	**123**
K2002C.16.36.100	16	14,0	36	100	16	5	99,09	**161**
K2002C.16.36.140	16	14,0	36	140	16	5	99,09	**162**
K2002C.16.53.160	16	14,0	53	160	16	5	104,40	**163**
K2002C.20.45.160	20	18,0	45	160	20	5	103,40	**202**
K2002C.20.61.175	20	18,0	61	175	20	5	123,70	**203**
K2002C.25.45.160	25	22,4	45	160	25	5	145,70	**252**
K2002C.25.70.190	25	22,4	70	190	25	5	151,00	**253**
K2002C.32.56.175	32	28,6	56	175	32	5	185,60	**322**
K2002C.32.80.210	32	28,6	80	210	32	5	195,00	**323**

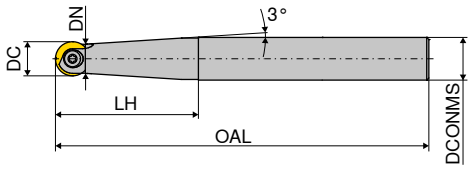
Applicable inserts

	**ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4**

	**XOHX-FM1**

Copy milling cutter K 2003C

▲ tapered execution





Designation	DC	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 104 ...	
	mm	mm	mm	mm	mm	Nm	EUR	
K2003C.6.16.90	6	5,3	16	90	10	0,6	104,90	**061**
K2003C.8.50.85	8	7,5	50	85	12	1	124,80	**081**
K2003C.8.50.140	8	7,5	50	140	12	1	124,80	**082**
K2003C.10.35.85	10	9,0	35	85	12	5	124,80	**101**
K2003C.10.35.150	10	9,0	35	150	12	5	124,80	**102**
K2003C.12.60.110	12	10,5	60	110	16	5	126,90	**121**
K2003C.12.60.160	12	10,5	60	160	16	5	126,90	**122**
K2003C.16.67.120	16	14,0	67	120	20	5	136,30	**161**
K2003C.16.67.175	16	14,0	67	175	20	5	136,30	**162**
K2003C.20.80.190	20	18,0	80	190	25	5	158,40	**201**
K2003C.25.100.210	25	22,4	100	210	32	5	197,20	**251**
K2003C.32.123.240	32	28,6	123	240	40	5	252,70	**321**

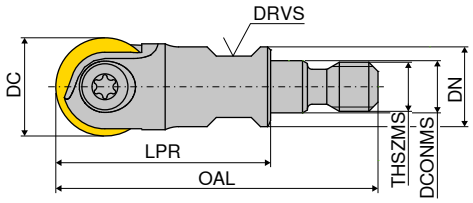
Applicable inserts

	**ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4**

	**XOHX-FM1**

Copy milling cutter K 2000G







Designation	DC	LPR	DN	OAL	DCONMS	THSZMS	DRVS	torque moment	WA Article no. 56 120 ...	
	mm	mm	mm	mm	mm		mm	Nm	EUR	
K2000G.8.25.M6	8	25	10	39,5	6,5	M6	8	1	208,70	**081** 1)
K2000G.10.25.M6	10	25	10	39,5	6,5	M6	8	5	206,50	**101** 1)
K2000G.12.25.M6	12	25	10	39,5	6,5	M6	8	5	212,90	**121** 1)
K2000G.12.26.M8	12	26	13	43,5	8,5	M8	10	5	212,90	**122**
K2000G.16.26.M8	16	26	13	43,5	8,5	M8	10	5	221,20	**161**
K2000G.20.30.M10	20	30	18	49,5	10,5	M10	15	5	225,50	**201**
K2000G.25.40.M12	25	40	21	62,0	12,5	M12	17	5	233,80	**251**
K2000G.32.45.M16	32	45	30	69,0	17,0	M16	26	5	249,50	**321**

1) Without Through Coolant

Applicable inserts

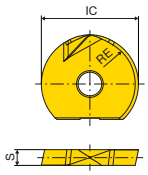
	**ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4**

	**XOHX-FM1**

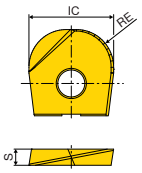
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7  Key D Article no. 80 950 ...		2A/28  Molykote Article no. 70 950 ...		WA  Clamping screw Article no. 56 950 ...		Y7  Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR	
6	4,76	**031**	8,44	**108**	4,38	**303**	6,10	**041**	118,90	**191**
8	4,76	**033**	7,80	**110**	4,38	**303**	6,10	**042**	118,90	**191**
10	4,76	**036**	9,28	**113**	4,38	**303**	6,10	**043**	131,90	**193**
12	4,76	**037**	9,95	**114**	4,38	**303**	8,33	**044**	131,90	**193**
16	4,76	**037**	9,95	**114**	4,38	**303**	8,33	**045**	131,90	**193**
20	4,76	**037**	9,95	**114**	4,38	**303**	8,33	**046**	131,90	**193**
25			12,10	**131**	4,38	**303**	8,33	**047**		
32			12,10	**131**	4,38	**303**	8,45	**048**		

ROHX / XOHX / ROGX

Designation	IC	S
	mm	mm
ROHX0616R..	6	1,60
ROHX0820R..	8	2,00
XOHX10254..	10	2,50
ROHX1025R..	10	2,50
XOHX12255..	12	2,50
RO.X1225R..	12	2,50
XOHX16307..	16	3,00
RO.X1630R..	16	3,00
XOHX20309..	20	3,00
RO.X2030R..	20	3,00
RO.X2540R..	25	4,00
RO.X3250R..	32	5,00



RO.X



XOHX

ROHX / XOHX / ROGX

	-MR5 CTPP211	-FM1 CTPP216	-FM3 CTPP216	-FM4 CTPP216	-FM4 CTPK226	-MR4 CTPK231	-FM6 CTCN211
							
	ROHX	XOHX	ROHX	ROHX	ROHX	ROGX	ROHX
	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	WB
ISO	Article no. 56 149 ...	Article no. 56 169 ...	Article no. 56 147 ...	Article no. 56 141 ...	Article no. 56 141 ...	Article no. 56 143 ...	Article no. 56 145 ...
RE mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
0616 R3 / 3,0			30,87 30200	25,73 90200			76,96 602 1)
0820 R4 / 4,0	31,38 71300		37,43 31300	24,72 71300	25,92 11300		100,20 613 1)
1025 R5 / 5,0	31,38 72400		37,43 32400	24,72 72400	25,92 12400		100,20 624 1)
102540 / 4,0		33,89 92400					
1225 R6 / 6,0			38,03 33500	25,73 73500	25,92 13500	25,22 53500	100,20 635 1)
122550 / 5,0		36,32 93500					
1630 R8 / 8,0			40,96 34600	29,56 74600	30,21 14600	29,56 54600	113,50 646 1)
163070 / 7,0		38,84 94700					
2030 R10 / 10,0			43,38 35700	33,89 75700	33,77 15700	33,89 55700	
203090 / 9,0		44,28 95900					
2540 R12,5 / 12,5			53,98 36800	50,54 76800	50,37 16800	49,94 56800	
3250 R16 / 16,0			72,33 37900	73,84 77900	74,69 17900	68,90 57900	
Steel	●	●	●	●	●	●	
Stainless steel	●	●	●	●	○	●	
Cast iron	●	●	●	●	○	●	
Non ferrous metals	○				○		●
Heat resistant alloys	●	●	●	●	○	●	
hardened materials	○	●	●	●	●		

1) Specifically for machining graphite !

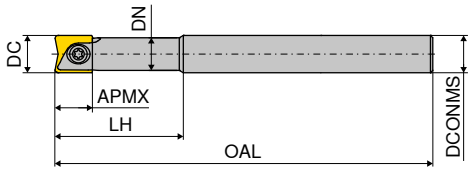
Milling guide

Depth of Cut	→ 185	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 183+184

Copy milling cutter K 2005C / K 2006C

▲ with carbide shank









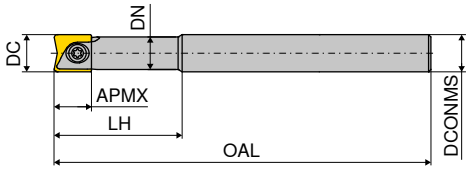
Designation	DC	APMX	DN	LH	OAL	DCONMS h6	torque moment	WA Article no. 56 110 ...		WA Article no. 56 111 ...	
	mm	mm	mm	mm	mm	mm	Nm	EUR		EUR	
K2005C.8.27.82	8	9,5	7,0	27	82	8	1	379,60	**081** [1]		
K2005C.8.27.102	8	9,5	7,0	27	102	8	1	379,60	**082** [1]		
K2005C.8.42.152	8	9,5	7,0	42	152	8	1	421,50	**083** [1]		
K2005C.10.37.82	10	11,5	8,8	37	82	10	5	458,20	**101** [1]		
K2005C.10.37.122	10	11,5	8,8	37	122	10	5	471,90	**102** [1]		
K2005C.10.52.152	10	11,5	8,8	52	152	10	5	523,30	**103** [1]		
K2005C/K2006C.12.37.82	12	14,0	10,5	37	82	12	5	476,00	**121** [1]	476,00	**121**
K2005C/K2006C.12.37.122	12	14,0	10,5	37	122	12	5	497,00	**122** [1]	497,00	**122**
K2005C/K2006C.12.52.162	12	14,0	10,5	52	162	12	5	531,60	**123** [1]	531,60	**123**
K2006C.16.42.102	16	16,0	14,0	42	102	16	5			655,40	**161**
K2006C.16.42.142	16	16,0	14,0	42	142	16	5			655,40	**162**
K2006C.16.57.177	16	16,0	14,0	57	177	16	5			714,00	**163**
K2006C.20.52.102	20	18,0	18,0	52	102	20	5			834,60	**201**
K2006C.20.52.142	20	18,0	18,0	52	142	20	5			834,60	**202**
K2006C.20.77.192	20	18,0	18,0	77	192	20	5			979,40	**203**
K2006C.25.62.162	25	23,5	22,4	62	162	25	5			1.182,00	**252**
K2006C.25.92.212	25	23,5	22,4	92	212	25	5			1.478,00	**253**

1) Without Through Coolant

Applicable inserts

	XOHX-FM2 / -FM5 / -MR2 / -MR3 / -MR6
	XOGX-MF4

Copy milling cutter K 2007C



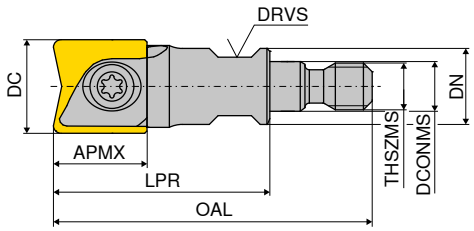


Designation	DC	APMX	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 112 ...	
	mm	mm	mm	mm	mm	mm	Nm	EUR	
K2007C.12.34.92	12	14,0	10,5	34	92	12	5	102,20	**121**
K2007C.12.34.132	12	14,0	10,5	34	132	12	5	93,53	**122**
K2007C.12.48.152	12	14,0	10,5	48	152	12	5	97,83	**123**
K2007C.16.38.102	16	16,0	14,0	38	102	16	5	99,09	**161**
K2007C.16.38.142	16	16,0	14,0	38	142	16	5	99,09	**162**
K2007C.16.55.162	16	16,0	14,0	55	162	16	5	104,40	**163**
K2007C.20.47.162	20	18,0	18,0	47	162	20	5	103,40	**202**
K2007C.20.63.177	20	18,0	18,0	63	177	20	5	123,70	**203**
K2007C.25.47.162	25	23,5	22,4	47	162	25	5	145,70	**252**
K2007C.25.72.192	25	23,5	22,4	72	192	25	5	151,00	**253**
K2007C.32.58.177	32	28,0	28,6	58	177	32	5	185,60	**322**
K2007C.32.82.212	32	28,0	28,6	82	212	32	5	195,00	**323**

Applicable inserts

	**XOHX-FM2 / -FM5 / -MR2 / -MR3 / -MR6**
	XOGX-MF4

Copy milling cutter K 2005G





Designation	DC	APMX	DN	LPR	OAL	DCONMS	THSZMS	DRVS	torque moment	WA Article no. 56 130 ...	
	mm	mm	mm	mm	mm	mm		mm	Nm	EUR	
K2005G.8.25.M6	8	9,5	10	25	39,5	6,5	M6	8	1	208,70	**081** 1)
K2005G.10.25.M6	10	11,5	10	25	39,5	6,5	M6	8	5	206,50	**101** 1)
K2005G.12.25.M6	12	14,0	10	25	39,5	6,5	M6	8	5	212,90	**121** 1)
K2005G.12.28.M8	12	14,0	13	28	45,5	8,5	M8	8	5	212,90	**122**
K2005G.16.28.M8	16	16,0	13	28	45,5	8,5	M8	10	5	221,20	**161**
K2005G.20.32.M10	20	18,0	18	32	51,5	10,5	M10	15	5	225,50	**201**
K2005G.25.42.M12	25	23,5	21	42	64,0	12,5	M12	17	5	233,80	**251**
K2005G.32.47.M16	32	28,0	30	47	71,0	17,0	M16	26	5	249,50	**321**

1) Without Through Coolant

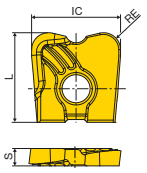
Applicable inserts

	XOHX-FM2 / -FM5 / -MR2 / -MR3 / -MR6
	XOGX-MF4

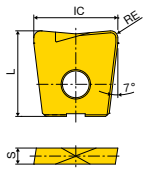
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	EUR		EUR		EUR		EUR		EUR	
8	4,76	**033**	7,80	**110**	4,38	**303**	6,10	**042**	118,90	**191**
10	4,76	**036**	9,28	**113**	4,38	**303**	6,10	**043**	131,90	**193**
12	4,76	**037**	9,95	**114**	4,38	**303**	8,33	**044**	131,90	**193**
16	4,76	**037**	9,95	**114**	4,38	**303**	8,33	**045**	131,90	**193**
20	4,76	**037**	9,95	**114**	4,38	**303**	8,33	**046**	131,90	**193**
25			12,10	**131**	4,38	**303**	8,33	**047**		
32			12,10	**131**	4,38	**303**	8,45	**048**		

XOHX / XOGX

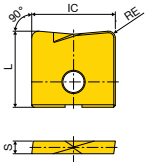
Designation	IC	S	L
	mm	mm	mm
XO.X10251..	10	2,50	11,5
XO.X12251..	12	2,50	14,0
XO.X12252..	12	2,50	14,0
XO.X16301..	16	3,00	16,0
XO.X16303..	16	3,00	16,0
XO.X20301..	20	3,00	18,0
XO.X20304..	20	3,00	18,0
XOHX06160..	6	1,60	8,0
XOHX08200..	8	2,00	9,5
XOHX08201..	8	2,00	9,5
XOHX10250..	10	2,50	11,5
XOHX12252..	12	3,00	14,0
XOHX20302..	20	3,00	18,0
XOHX25401..	25	4,00	23,5
XOHX25402..	25	4,00	23,5
XOHX25405..	25	4,00	23,5
XOHX32502..	32	5,00	28,0



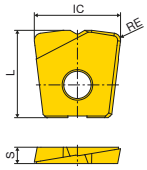
XOGX -MF4



XOHX -FM2, -MR2

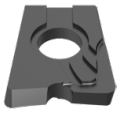
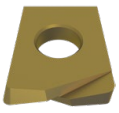
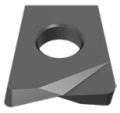


XOHX -FM5, -MR6



XOHX -MR3

XOHX / XOGX

	-MR2 CTPP211	-MR6 CTPP211	-FM2 CTPP216	-FM5 CTPP216	-MF4 CTPP216	-MR3 CTPK231	-MR2 CTCN211
							
	XOHX	XOHX	XOHX	XOHX	XOGX	XOHX	XOHX
	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	WB
ISO / RE	Article no. 56 167 ...	Article no. 56 163 ...	Article no. 56 165 ...	Article no. 56 159 ...	Article no. 56 161 ...	Article no. 56 171 ...	Article no. 56 168 ...
mm	EUR	EUR	EUR	EUR	EUR	EUR	EUR
061605 0,5	32,08 71000						76,96 610 1)
082006 0,6		34,50 71000	30,37 71000	26,53 71000			
082010 1,0	35,11 71200		30,37 71200				92,10 612 1)
102508 0,8		34,50 72100	30,37 72100	26,23 72100		38,23 32100	
102510 1,0	35,11 72200		30,37 72200		30,67 92200		97,94 622 1)
122510 1,0	37,63 73200	37,63 73200	31,38 73200	29,56 73200	33,29 93200	38,23 53200	106,10 632 1)
122520 2,0	37,63 73500		31,38 73500		33,29 93500		
163010 1,0	40,65 74200		36,32 74200		37,63 94200		131,90 642 1)
163013 1,3		40,05 74300	36,32 74300	33,89 74300			
163015 1,5						40,65 54400	
163030 3,0	40,65 74700		36,32 74500		37,63 94700		
203010 1,0	46,81 75200		40,05 75200		42,47 95200		
203016 1,6		45,59 75400	40,05 75400	38,84 75400			
203020 2,0						48,02 55500	
203040 4,0	46,81 75800		40,05 75800		42,47 95800		
254010 1,0	59,72 76200		51,75 76200				
254020 2,0		62,74 76500	51,75 76500	54,17 76500			
254050 5,0	59,72 76900		51,75 76900				
325025 2,5		88,67 77600		75,16 77600			
Steel	●	●	●	●	●	●	
Stainless steel	●	●	●	●	●	●	
Cast iron	●	●	●	●	●	●	
Non ferrous metals	○	○					●
Heat resistant alloys	●	●	●	●	●	●	
hardened materials	○	○	●	●	●		

1) Specifically for machining graphite !

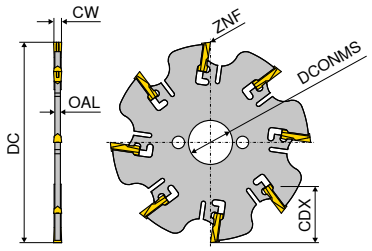
Milling guide

Depth of Cut	→ 185	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 183+184

Side and Face milling System FM

▲ For safety reasons the cutting speed must not exceed 250 m/min!

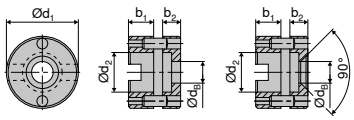
Scope of supply:
incl. ejector





Designation	DC	CW	ZNF	CDX	OAL	DCONMS	RPMX	Insert	2B Article no. 50 756 ...	
	mm	mm		mm	mm	mm	1/min.		EUR	
SF-1,8-Z 8-100	100	2,3	8	28	1,8	22	800	FM-2.3 ...	524,30	**100**
SF-2,4-Z 8-100	100	3,0	8	28	2,4	22	800	FM-3.0 ...	476,00	**102**
SF-2,8-Z 8-100	100	4,0	8	28	2,8	22	800	FM-4.0 ...	476,00	**104**
SF-3,7-Z 8-100	100	5,0	8	28	3,7	22	800	FM-5.0 ...	608,10	**106**
SF-4,7-Z 8-100	100	6,0	8	28	4,7	22	800	FM-6.0 ...	633,40	**108**
SF-1,8-Z 10-125	125	2,3	10	40	1,8	22	650	FM-2.3 ...	623,90	**110**
SF-2,4-Z 10-125	125	3,0	10	40	2,4	22	650	FM-3.0 ...	564,10	**112**
SF-2,8-Z 10-125	125	4,0	10	40	2,8	22	650	FM-4.0 ...	564,10	**114**
SF-3,7-Z 10-125	125	5,0	10	40	3,7	22	650	FM-5.0 ...	722,50	**116**
SF-4,7-Z 10-125	125	6,0	10	40	4,7	22	650	FM-6.0 ...	766,50	**118**
SF-2,4-Z 15-160	160	3,0	15	49	2,4	32	500	FM-3.0 ...	663,70	**120**
SF-2,8-Z 15-160	160	4,0	15	49	2,8	32	500	FM-4.0 ...	663,70	**122**
SF-3,7-Z 15-160	160	5,0	15	49	3,7	32	500	FM-5.0 ...	809,50	**124**
SF-4,7-Z 15-160	160	6,0	15	49	4,7	32	500	FM-6.0 ...	844,10	**126**

Drive dogs



M../2N M../2S

Type	d_1 mm	d_2 mm	d_B mm	b_1 mm	b_2 mm	Ø mm	2A Article no. 70 950 ... EUR	
M22/2N	40	22	12	14,5	10	100/125	53,16	**800**
M32/2N	58	32	18	17,5	15	160	56,31	**801**
M22/2S	40	22	12	14,5	10	100/125	59,56	**802**
M32/2S	58	32	18	17,5	15	160	65,22	**803**

Ejector



2A Article no. 70 950 ... EUR	
3,72	**804**

FM

	-N CWN35	-KXF CWN35	-N CWK12
			
	FM V5	FM V5	FM V5
ISO	**Article no. 50 491 ...**	**Article no. 50 492 ...**	**Article no. 50 491 ...**
	EUR	**EUR**	**EUR**
FM-2.3-8	10,50 **023**	10,50 **023**	9,50 **123**
FM-3.0-8	10,50 **030**	10,50 **030**	9,50 **130**
FM-4.0-8	10,50 **040**	10,50 **040**	9,50 **140**
FM-5.0-8	13,29 **050**		12,97 **150**
FM-6.0-8	13,29 **060**		12,97 **160**
Steel	●	●	
Stainless steel	●	●	
Cast iron			●
Non ferrous metals			●
Heat resistant alloys			
hardened materials			

Milling guide

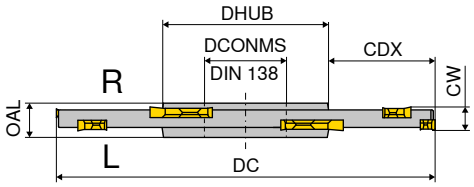
Machining strategy	→ 188	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 187

15

Saw Cutter TX

- ▲ Note: side and face milling cutters TX are cross-pitched and equipped with indexable inserts for both right-hand and left-hand version.
- ▲ ZEFP = number of inserts

Scope of supply:
side and face milling cutter, 2 spare clamping screws and 1 Torx key





Designation	DC	CW	ZNF	CDX	DCONMS	DHUB	OAL	ZEFP	Insert	torque moment	V5 Article no. 50 730 ...	
	mm	mm		mm	mm	mm	mm			Nm	EUR	
TX.STF.80X27.03.Z4	80	3	4	18,0	27	40	8	8	TX. 161702	0,9	493,90	**083**
TX.STF.100X32.03.Z5	100	3	5	25,0	32	46	8	10	TX. 161702	0,9	621,80	**103**
TX.STF.125X40.03.Z6	125	3	6	32,0	40	54	10	12	TX. 161702	0,9	679,50	**123**
TX.STF.160X40.03.Z8	160	3	8	50,0	40	54	10	16	TX. 161702	0,9	793,80	**163**
TX.STF.80X27.04.Z4	80	4	4	18,0	27	40	8	8	TX. 162302	1,3	486,50	**084**
TX.STF.100X32.04.Z5	100	4	5	25,0	32	46	8	10	TX. 162302	1,3	613,40	**104**
TX.STF.125X40.04.Z6	125	4	6	32,0	40	54	10	12	TX. 162302	1,3	669,00	**124**
TX.STF.160X40.04.Z8	160	4	8	50,0	40	54	10	16	TX. 162302	1,3	783,30	**164**
TX.STF.80X27.06.Z4	80	6	4	21,0	27	36	10	8	TX. 223202	2	319,80	**086**
TX.STF.80X22.06.Z4	80	6	4	22,0	22	33	10	8	TX. 223202	2	319,80	**080**
TX.STF.100X32.06.Z5	100	6	5	25,5	32	47	10	10	TX. 223202	2	380,60	**106**
TX.STF.125X40.06.Z6	125	6	6	32,5	40	58	10	12	TX. 223202	2	513,80	**136**
TX.STF.160X40.06.Z8	160	6	8	50,0	40	58	10	16	TX. 223202	2	681,60	**166**
TX.STF.80X27.08.Z4	80	8	4	21,0	27	36	12	8	TX. 224302	2,8	319,80	**088**
TX.STF.100X32.08.Z5	100	8	5	25,5	32	47	12	10	TX. 224302	2,8	380,60	**108**
TX.STF.125X40.08.Z6	125	8	6	32,5	40	58	12	12	TX. 224302	2,8	513,80	**138**
TX.STF.160X40.08.Z8	160	8	8	50,0	40	58	12	16	TX. 224302	2,8	660,60	**168**
TX.STF.80X27.10.Z4	80	10	4	21,0	27	36	12	8	TX. 225402	3	319,80	**090**
TX.STF.100X32.10.Z5	100	10	5	25,5	32	47	12	10	TX. 225402	3	380,60	**110**
TX.STF.125X40.10.Z6	125	10	6	32,5	40	58	14	12	TX. 225402	3	513,80	**140**
TX.STF.160X40.10.Z8	160	10	8	50,0	40	58	14	16	TX. 225402	3	681,60	**170**

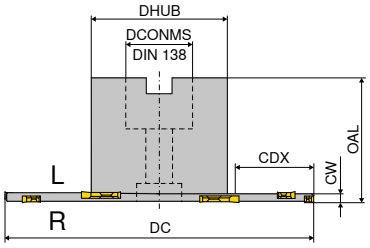
Spare parts CW	Y7 TORX® blade Article no. 80 950 ... EUR		Y7  Key D Article no. 80 950 ... EUR		2A/28  Molykote Article no. 70 950 ... EUR		V5  Clamping screw Article no. 70 950 ... EUR		Y7  Torque screwdriver Article no. 80 950 ... EUR	
3	4,76	**032**	7,80	**109**	4,38	**303**	4,71	**858**	118,90	**191**
4	4,76	**033**	7,80	**110**	4,38	**303**	2,16	**218**	118,90	**191**
6	4,76	**036**	9,28	**113**	4,38	**303**	2,81	**101**	128,60	**192**
8	4,76	**037**	9,95	**114**	4,38	**303**	2,81	**135**	128,60	**192**
10	4,76	**037**	9,95	**114**	4,38	**303**	2,76	**146**	128,60	**192**

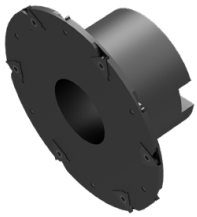
Shell side and face milling cutter TX

- ▲ Note: side and face milling cutters TX are cross-pitched and equipped with indexable inserts for both right-hand and left-hand version.
- ▲ ZEFP = number of inserts

Scope of supply:

side and face milling cutter, 2 spare clamping screws and 1 Torx key





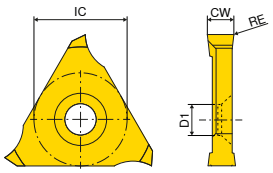
Designation	DC	CW	ZNF	CDX	DCONMS	DHUB	OAL	ZEFP	torque moment	Insert	V5 Article no. 50 734 ...	
	mm	mm		mm	mm	mm	mm		Nm		EUR	
TX.ASF.100.R.03.Z5	100	3	5	25,0	27	48	50	10	0,9	TX. 161702	565,10	**300**
TX.ASF.125.R.03.Z6	125	3	6	37,5	27	48	50	12	0,9	TX. 161702	877,60	**225**
TX.ASF.160.R.03.Z8	160	3	8	44,0	40	70	50	16	0,9	TX. 161702	940,50	**260**
TX.ASF.100.R.04.Z5	100	4	5	25,0	27	48	50	10	3,2	TX. 162302	556,80	**100**
TX.ASF.125.R.04.Z6	125	4	6	37,5	27	48	50	12	3,2	TX. 162302	804,30	**025**
TX.ASF.125.R.04.Z6	125	4	6	26,5	40	70	50	12	3,2	TX. 162302	783,30	**125**
TX.ASF.160.R.04.Z8	160	4	8	55,0	27	48	50	16	3,2	TX. 162302	980,40	**060**
TX.ASF.160.R.04.Z8	160	4	8	44,0	40	70	50	16	3,2	TX. 162302	926,90	**160**
TX.ASF.180.R.04.Z9	180	4	9	54,0	40	70	50	18	3,2	TX. 162302	1.072,00	**180**
TX.ASF.200.R.04.Z10	200	4	10	64,0	40	70	50	20	3,2	TX. 162302	1.194,00	**200**

Spare parts CW	DCONMS	V5  Washer Article no. 70 950 ... EUR		Y7 TORX® blade Article no. 80 950 ... EUR		V5  Clamping Screw Article no. 70 950 ... EUR		Y7  Key D Article no. 80 950 ... EUR		2A/28  Molykote Article no. 70 950 ... EUR		V5  Clamping screw Article no. 70 950 ... EUR		Y7  Torque screwdriver Article no. 80 950 ... EUR	
3	40	1,63	**222**	4,76	**032**	7,03	**220**	7,80	**109**	4,38	**303**	4,71	**858**	118,90	**191**
3	27	1,08	**221**	4,76	**032**	1,63	**219**	7,80	**109**	4,38	**303**	4,71	**858**	118,90	**191**
4	27	1,08	**221**	4,76	**033**	1,63	**219**	7,80	**110**	4,38	**303**	2,16	**218**	128,60	**192**
4	40	1,63	**222**	4,76	**033**	7,03	**220**	7,80	**110**	4,38	**303**	2,16	**218**	128,60	**192**

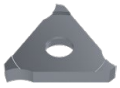
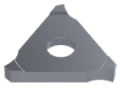
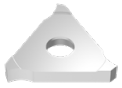
15

TX-L / TX-R

Designation	IC	D1	CW
	mm	mm	mm
TX . 1617..	10	3,95	1,7
TX . 1623..	10	3,95	2,3
TX . 2232..	13	5,50	3,2
TX . 2243..	13	5,50	4,3
TX . 2254..	13	5,50	5,4



TX-L / TX-R

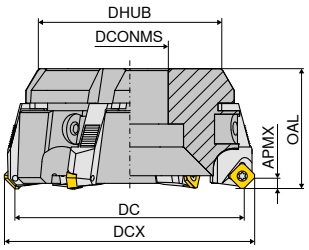
		CWX500	CWX500	CWK10	CWK10
					
		TX-L	TX-R	TX-L	TX-R
		V5	V5	V5	V5
ISO	RE	Article no. 50 382 ...	Article no. 50 381 ...	Article no. 50 382 ...	Article no. 50 381 ...
	mm	EUR	EUR	EUR	EUR
TX 161702	0,2	19,78 217	19,78 217		
TX 162302	0,2	19,56 223	19,56 223		
TX 223202	0,2	29,52 232	29,52 232	26,16 532	26,16 532
TX 224302	0,2	29,83 243	29,83 243	26,70 543	26,70 543
TX 225402	0,2	22,16 254	22,16 254	19,02 554	19,02 554
Steel		●	●		
Stainless steel		●	●		
Cast iron		●	●		
Non ferrous metals				●	●
Heat resistant alloys		●	●		
hardened materials					

Milling guide

Grade description → 209+210
Cutting data appoximate values → 187
ISO Designation System → 194+195

MaxiMill – Combi Mill Base Holder 260

▲ Basic body with clamping wedges, without cartridges





DC	ZNF	DCONMS	DHUB	OAL	WT	2B/40 Article no. 50 715 ...	
mm		mm	mm	mm	kg	EUR	
80	5	27	66	52	1	367,30	**080**
100	6	32	86	52	2	402,30	**100**
125	7	40	95	63	3	560,20	**125**
160	10	40	130	63	6	614,40	**160**
200	12	60	172	63	9	785,20	**200**
250	14	60	222	63	17	1.017,00	**250**
315	18	60	280	80	31	1.063,00	**315**
400	22	60	365	80	52	2.292,00	**400**

For information on axial runout setting, see → **page 189**

Spare parts DC	2A/28 Clamping wedge screw Article no. 70 950 ... EUR		2A/28 Clamping Wedge Article no. 70 950 ... EUR		2A/28 Key-T Article no. 70 950 ... EUR		2A/28 Molykote Article no. 70 950 ... EUR		2A/28 Eccentric Key Article no. 70 950 ... EUR	
80 - 400	2,98	**297**	17,47	**296**	7,09	**317**	4,38	**303**	12,37	**298**

Insert related diameter

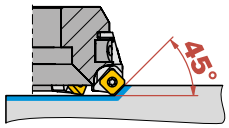
	Inserts	Nominal Ø in mm 80 DC mm	80 DCX mm	100 DC mm	100 DCX mm	120 DC mm	120 DCX mm	160 DC mm	160 DCX mm	200 DC mm	200 DCX mm	250 DC mm	250 DCX mm	315 DC mm	315 DCX mm	400 DC mm	400 DCX mm
	SD.. 0903..	80	88,4	100	108,4	123	131,4	158	166,4	198	206,4	248	256,4	313	321,4	398	406,4
	SD.. 1204..	80	94,5	100	114,5	123	137,5	158	172,5	198	212,5	248	262,5	313	327,5	398	412,5
	SE.. 1204..	80	93	100	113	123	136	158	171	198	211	248	261	313	326	398	411
	SD.. 1504..	75	94	95	114	118	137	153	172	193	212	243	262	308	327	393	412
	SP.. 1204..	82	88	102	108	125	131	160	166	200	206	250	256	315	321	400	406
	OA.. 0605..	80	85,6	100	105,6	123	128,6	158	163,6	198	203,6	248	253,6	313	318,6	398	403,6
	RP.X 1204..	80	92	100	112	123	135	158	170	198	210	248	260	313	325	398	410
	RP.X 16..	76	92	96	112	119	135	154	170	194	210	244	260	309	325	394	410
	SD.. 1205..	89		109		132		167		207		257		322		407	
	SD.. 09T3	89		109		132		167		207		257		322		407	
	LD..1504..	89		109		132		167		207		257		322		407	
	XD.T 11T3	89		109		132		167		207		257		322		407	
	XDKT 1505	89		109		132		167		207		257		322		407	
	AP.. 1003..	89		109		132		167		207		257		322		407	
	TPKW 2204..	89		109		132		167		207		257		322		407	

15

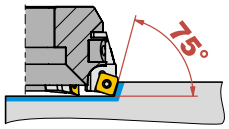
System MaxiMill 260/Combi Mill

Cassette for inserts

Face milling

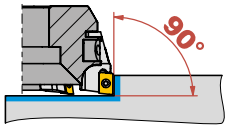


							
		SD.. 0903..	SD.. 1204..	SE.. 1204..	SD.. 1504..		OA.. 0605..
Cartridge no.		041	031	029	032		057
Article no.	70 950 ...	329	411	306	412		338



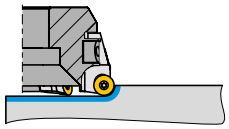
		
		SP.. 1204..
Cartridge no.		018
Article no.	70 950 ...	310

Shoulder milling



											
		AP.. 1003..	LD.. 1504..	XD.T 11T3..	XDKT 1505..		SD.. 1205..	SD.. 09T3..		TPKW 2204..	
Cartridge no.		042	051	054	056		039	055		025	
Article no.	70 950 ...	307	300	336	339		311	337		313	

Face/Copy milling



			
		RP.X 1204..	RP.X 16....
Cartridge no.		052	053
Article no.	70 950 ...	333	707

Insert	APMX	Cassette 2B/40 Article no. 70 950 ...	
	mm	EUR	
AP.. 1003..	8,0	84,26	307
LD.. 1504..	14,0	84,26	300
OA.. 0605..	3,5	84,26	338
RP.X 1204..	6,0	84,26	333
RP.X 16..	8,0	84,26	707
SD.. 0903..	4,0	84,26	329
SD.. 09T3..	8,0	84,26	337
SD.. 1204..	6,0	84,26	411
SD.. 1205..	6,0	84,26	311
SD.. 1504..	9,0	84,26	412
SE.. 1204..	6,0	84,26	306
SP.. 1204..	9,0	84,26	310
TPKW 2204..	18,0	84,26	313
XD.T 11T3	10,0	84,26	336
XDKT 1505..	14,0	84,26	339

Spare parts	Y7 TORX® blade Article no. 80 950 ... EUR		Y7  Key D Article no. 80 950 ... EUR		2A/28  Molykote Article no. 70 950 ... EUR		2A  Clamping screw Article no. 70 950 ... EUR		Y7  Torque screwdriver Article no. 80 950 ... EUR	
AP.. 1003..	4,76	033	7,80	110	4,38	303	2,36	112	118,90	191
OA.. 0605..	4,76	037	9,95	114	4,38	303	4,09	302	131,90	193
RP.X 1204.. / LD.. 1504..	4,76	036	9,28	113	4,38	303	3,14	304	128,60	192
SD.. 0903..	4,76	033	7,80	110	4,38	303	2,57	115	118,90	191
SD.. 09T3..	4,76	036	9,28	113	4,38	303	3,14	110	128,60	192
SD.. 1204.. / SE.. 1204.. / SP.. 1204.. / SD.. 1205.. / SD.. 1504.. / RP.X 16.. / TPKW 2204..	4,76	037	9,95	114	4,38	303	2,52	280	131,90	193
XD.T.. 11T3..	4,76	043	10,20	125	4,38	303	4,09	131	118,90	191
XDKT 1505..	5,26	054	11,89	128	4,38	303	3,18	839	128,60	192

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data appoximate values

Cutting Material **hard** (v_c↑) → **tough** (v_c↓)

	DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN				DRAGONSKIN		DRAGONSKIN		DRAGONSKIN					
	CERMET		CERMET																							
	CTEP210 (DCC1210)		TCM10 (CWC10)		CTCP220 (DCX1220)		CTPP225 (DPX1225)		CTCP230 (DCX1230)		CTPP231		CTPP235 (DPX1235)		CTPP236		CTPM225 (DPX2225)		CTCM235 (DCX2235)		CTPM240 (DPX2240)		CTPM241		CTPM245 (DPX2245)	
Index																										
1.1	320		280		320	170	300	160	280	170	200	100	240	140	300	180	270	160	240	140	220	130	200	100		
1.2	400		350		280	150	250	130	230	140	170	90	190	110	250	150	220	130	190	110	170	100	170	90		
1.3	350		300		320	170	300	160	280	170	200	100	240	140	300	180	270	160	240	140	220	130	200	100		
1.4	330		300		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	90	250	
1.5	400		350		300	150	280	140	250	150	170	90	210	130	270	160	230	140	210	130	190	110	170	90		
1.6	350		300		300	150	280	140	250	150	170	90	210	130	270	160	230	140	210	130	190	110	170	90		
1.7	280		250		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	90	220	
1.8	320		280		250	120	220	110	190	110	150	80	160	100	210	120	180	100	150	90	140	80	150	80	180	
1.9	250		230		280	140	250	130	230	140	200	110	200	120	250	150	220	130	200	120	180	100	180	100	250	
1.10	280		250		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	100	220	
1.11	300		250		190	100	170	90	140	90	120	70	120	70	160	100	140	80	100	60	100	60	120	80	180	
1.12	300		250		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	100	250	
1.13					300	150	280	140	250	150	170	90	210	130	270	160	230	140	210	130	190	110	170	100	250	
1.14					150	70	130	70	100	60	120	70	90	50	150	100	170	100	120	70	90	50	120	80	120	
1.15	280		250		180	90	150	90	130	80	140	80	110	70	180	140	180	110	150	90	120	70	140	90	220	
1.16	280		250		180	90	150	90	130	80	140	80	110	70	180	140	180	110	150	90	120	70	180	100	160	
2.1									90	60			80	50			170	100	110	70	80	50	210	100	240	
2.2			280						130	80			110	70			180	110	150	90	120	70	210	100	240	
2.3			250						90	60			80	50			170	100	110	70	80	50	210	100	260	
2.4									130	80			110	70			180	110	150	90	120	70	210	100	280	
2.5													190	110			280	160	250	140	190	110	210	100	180	160
2.6													190	110			280	160	260	150	210	120	210	100	200	180
2.7													190	110			280	160	260	150	210	120	210	100	150	130
3.1	380										150	110			360	90										
3.2	300		250								150	110			360	90										
3.3	400		350								150	110			230	170										
3.4	350		300								150	110			160	110										
3.5	380		330												250	180										
3.6	250														250	180										
3.7	350		300												210	160										
3.8	280														210	160										
4.1																										
4.2																										
4.3																										
4.4																										
4.5																										
4.6																										
4.7																										
4.8																										
4.9																										
4.10																										
4.11																										
4.12																										
4.13																										
4.14																										
4.15																										
4.16																										
4.17																										
4.18																										
4.19																										
5.1																							80	40		
5.2																							80	40		
5.3																							80	40		
5.4																							80	40		
5.5																							80	40		
5.6																							80	40		
5.7																							80	40		
5.8																							80	40		
5.9																							80	40		
5.10																							90	50		
5.11																							90	50		
6.1											120	50			130	60										
6.2																										
6.3																										
6.4																										
6.5																										

Cutting data appoximate values

Cutting Material **hard** (v_c↑) → **tough** (v_c↓)

	CERAMIC		CBN																			
	CTN3105 CTS3105		CTL3215 CWB3215		CTPK221		CTCK215 DCX3215		CTPK220 DPX3220		H216T CWK 26		AMZ AMZ		CTWN215 CWK 4615		CTC5240 HCF 5240		CTCS245		CTP6215 CCN6215	
Index																						
1.1					**190**	**120**	350	210	300	180												
1.2					**180**	**100**	300	180	250	150												
1.3					**190**	**120**	350	210	300	180												
1.4					**180**	**100**																
1.5					**180**	**100**	320	190	270	160												
1.6					**180**	**100**	320	190	270	160												
1.7					**180**	**100**																
1.8					**180**	**100**																
1.9					**200**	**120**	300	180	260	160												
1.10					**180**	**100**																
1.11					**120**	**70**																
1.12					**180**	**100**																
1.13					**180**	**100**	320	190	270	160												
1.14					**120**	**70**																
1.15					**210**	**120**																
1.16					**210**	**120**																
2.1																						
2.2																						
2.3																						
2.4																						
2.5																						
2.6																						
2.7																						
3.1	**400–1500**		**500–1000**		**270**	**200**	**360**	160	**320**	160	110	110	140		80	80					**280**	250
3.2	**300–800**		**500–1000**		**270**	**200**	**360**	160	**320**	160	110	110	140		80	80					**280**	250
3.3					**250**	**180**	**230**	140	**210**	130	130	130	150		80	80					**180**	150
3.4			**350–650**		**180**	**120**	**160**	100	**140**	80	130	130	150		80	80					**180**	150
3.5					**270**	**190**	**250**	150	**200**	120	130	130	150		80	80					**250**	220
3.6					**270**	**190**	**250**	150	**200**	120	130	130	150		80	80					**250**	220
3.7					**220**	**170**	**210**	130	**170**	100	130	130	150		80	80					**190**	160
3.8					**220**	**170**	**210**	130	**170**	100	130	130	150		80	80					**190**	160
4.1												**1500**		**1500**		**280**						
4.2												**1500**		**1500**		**250**						
4.3												**400**		**400**		**800**						
4.4												**350**		**350**		**800**						
4.5																**500**						
4.6												**500**		**500**		**200**						
4.7												**500**		**500**	80	**80**						
4.8												**500**		**500**	80	**80**						
4.9												**500**		**500**	80	**80**						
4.10												**300**		**300**	70	**70**						
4.11												**800**		**800**	80	**80**						
4.12												**800**		**800**	80	**80**						
4.13												**350**		**350**	80	**80**						
4.14												**350**		**350**	80	**80**						
4.15												**350**		**350**	80	**80**						
4.16												**150**		**150**	80	**110**						
4.17											**90**				80	**80**						
4.18												**90**		**90**		**90**						
4.19												**130**		**130**		**130**						
5.1																		**50**		**30–50**		
5.2																		**50**		**30–50**		
5.3																		**50**		**30–50**		
5.4																		**40**		**30–50**		
5.5																		**40**		**30–50**		
5.6																		**40**		**30–50**		
5.7																		**40**		**30–50**		
5.8																		**40**		**30–50**		
5.9																		**90**				
5.10																		**60**				
5.11																		**60**				
6.1					**180**	**120**															**50**	
6.2					**160**	**100**															**50**	
6.3			110–190																		**40**	
6.4																						
6.5																						

15

System MaxiMill 274-04/-09

Cutting data recommendations/Technology data

System Maximill 274 OFHT-04

	F			M			R		
Material	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	2,5	60–280	0,1–0,3	2,5	60–280	0,1–0,3	2,5
Stainless steel	60–270	0,1–0,25	2,5	60–270	0,1–0,3	2,5	60–270	0,1–0,3	2,5
Cast iron				130–360	0,1–0,3	2,5	130–360	0,1–0,3	2,5
Non-ferrous metals	160–1500	0,05–0,4	2,5	160–1500	0,05–0,4	2,5	160–1500	0,05–0,4	2,5
Heat resistant alloys	25–80	0,1–0,25	2,5	25–80	0,1–0,25	2,5			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

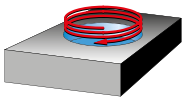
System MaxiMill 274 SFKT-09

	F			M			R		
Material	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	3,8	60–280	0,1–0,3	3,8	60–280	0,1–0,3	3,8
Stainless steel	60–270	0,1–0,25	3,8	60–270	0,1–0,3	3,8	60–270	0,1–0,3	3,8
Cast iron	110–130	0,05–0,4		130–360	0,1–0,35	3,8	130–360	0,1–0,35	3,8
Non-ferrous metals	160–1500	0,05–0,4	3,8	160–1500	0,05–0,4	3,8	160–1500	0,05–0,4	3,8
Heat resistant alloys	25–80	0,1–0,25	3,8	25–80	0,1–0,25	3,8	25–80	0,1–0,25	3,8
hardened materials									

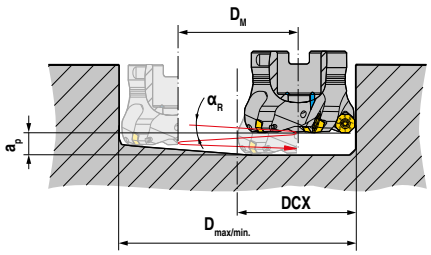
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

Helical plunge milling



$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest hole diameter for flat bottom surface
D_M = D_{max} – DCX and D_{min} – DCX



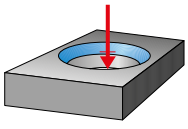
OF..04

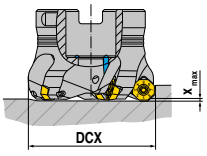
DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
25,6	45	39	2,3
30,7	55	49	1,9
37,7	69	63	1,4
45,7	85	79	1,2
55,7	105	99	0,9
68,7	131	125	0,7
85,7	165	159	0,6
105,7	205	199	0,5
130,7	255	249	0,4

SF..09

DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
27,4	45,00	42,0	1,9
32,5	55,00	52,0	1,5
39,2	69,00	66,0	1,1
47,6	85,00	82,0	0,9
57,6	105,00	102,0	0,7
70,5	131,00	128,0	0,5
87,5	165,00	162,0	0,4
107,5	205,00	202,0	0,3
132,5	255,00	252,0	0,3

Axial plunging





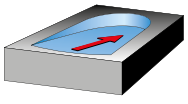
OF..04

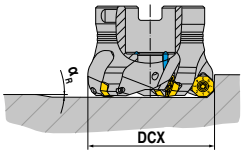
DCX mm	x_{max} mm
25,6	2,5
30,7	2,5
37,7	2,5
45,7	2,5
55,7	2,5
68,7	2,5
85,7	2,5
105,7	2,5
130,7	2,5

SF..09

DCX mm	x_{max} mm
27,4	3,7
32,5	3,5
39,2	3,2
47,6	3,1
57,6	3,1
70,5	3,0
87,5	2,9
107,5	2,7
132,5	2,7

Angled ramping





OF..04

DCX mm	$\alpha_{R\,max}$ °
25,6	14,2
30,7	9,5
37,7	6,5
45,7	4,7
55,7	3,5
68,7	2,7
85,7	2,0
105,7	1,6
130,7	1,2

SF..09

DCX mm	$\alpha_{R\,max}$ °
27,4	20,4
32,5	13,0
39,2	8,0
47,6	5,8
57,6	4,3
70,5	3,2
87,5	2,3
107,5	1,7
132,5	1,3

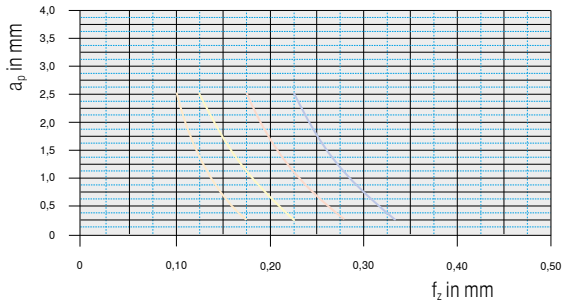
System MaxiMill 274-04

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



OF.. 04



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**OFHT040305SN-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**OFHT040305SN-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**OFHT040305SN-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**OFHT040305SN-F50**	**CTC5240** (HCF5240)	35	Emulsion

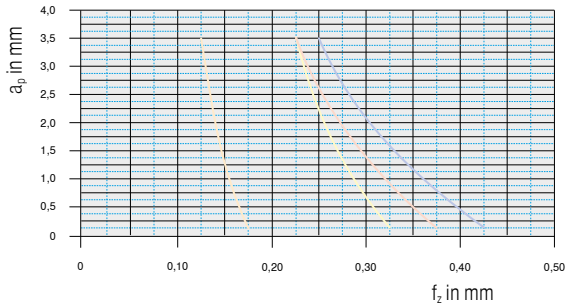
System MaxiMill 274-09

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



SF.. 09



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SFKT0903AFSR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SFHT0903AFSR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SFKT0903AFSR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SFHT0903AFSR-F50**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 274-05/-12

Cutting data recommendations/Technology data

System MaxiMill 274 OFHT-05

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	3	60–280	0,1–0,3	3	60–280	0,1–0,3	3
Stainless steel	60–270	0,1–0,25	3	60–270	0,1–0,3	3	60–270	0,1–0,3	3
Cast iron				130–360	0,1–0,3	3	130–360	0,1–0,3	3
Non-ferrous metals	160–1500	0,05–0,4	3	160–1500	0,05–0,4	3	160–1500	0,05–0,4	3
Heat resistant alloys	25–80	0,1–0,25	3	25–80	0,1–0,25	3			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

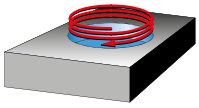
System MaxiMill 274 SFKT-12

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	6	60–280	0,1–0,3	6	60–280	0,1–0,3	6
Stainless steel	60–270	0,1–0,25	6	60–270	0,1–0,3	6	60–270	0,1–0,3	6
Cast iron	110–130	0,05–0,4		130–360	0,1–0,35	6	130–360	0,1–0,35	6
Non-ferrous metals	160–1500	0,05–0,4	6	160–1500	0,05–0,4	6	160–1500	0,05–0,4	6
Heat resistant alloys	25–80	0,1–0,25	6	25–80	0,1–0,25	6	25–80	0,1–0,25	6
hardened materials									

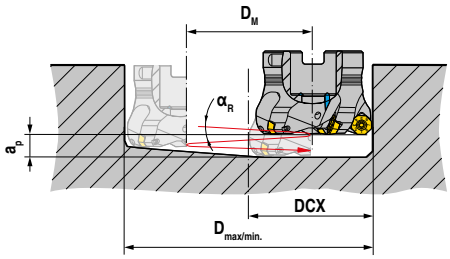
Detailed information on cutting speed for each grade can be found on → page 138+139

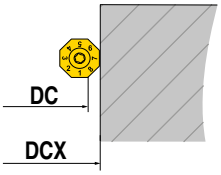
Machining strategy

Helical plunge milling



$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest hole diameter for flat bottom surface
D_M = D_{max} – DCX and D_{min} – DCX





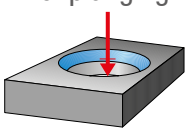
OF..05

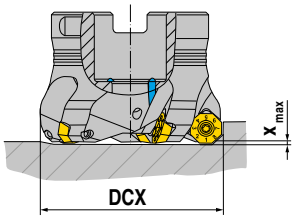
DC mm	DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
50	**58**	107	99	1,1
63	**71**	133	125	0,9
80	**88**	167	159	0,7
100	**107,9**	207	199	0,5
125	**132,9**	257	249	0,4

SF..12

DC mm	DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
47,0	**61,0**	107	105	0,5
59,9	**74,0**	133	131	0,4
76,9	**90,9**	167	165	0,3
96,9	**110,9**	207	205	0,25
121,9	**135,9**	257	255	0,2

Axial plunging





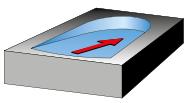
OF..05

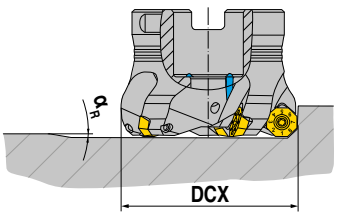
DC mm	DCX mm	X_{max} mm
50	**58**	2,2
63	**71**	1,9
80	**88**	1,8
100	**107,9**	1,1
125	**132,9**	1,4

SF..12

DC mm	DCX mm	X_{max} mm
47,0	**61,0**	3,4
59,9	**74,0**	3,2
76,9	**90,9**	3,0
96,9	**110,9**	2,5
121,9	**135,9**	2,6

Angled ramping





OF..05

DC mm	DCX mm	$\alpha_{R\,max}$ °
50	**58**	3,2
63	**71**	2,0
80	**88**	1,5
100	**107,9**	0,7
125	**132,9**	0,7

SF..12

DC mm	DCX mm	$\alpha_{R\,max}$ °
47,0	**61,0**	4,9
59,9	**74,0**	3,4
76,9	**90,9**	2,4
96,9	**110,9**	1,6
121,9	**135,9**	1,3

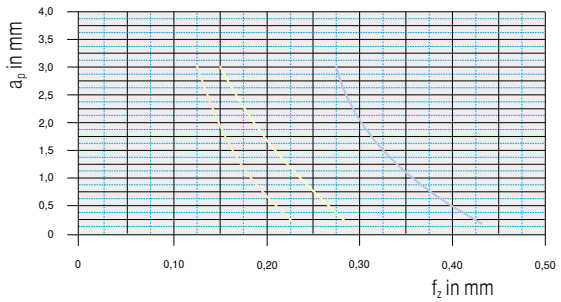
System MaxiMill 274-05

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



OF.. 05



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**OFHT050410SN-M50**	**CTCP230** (DCX1230)	200	Dry
Stainless steel	1.4571	**OFHT050410SN-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301				
Heat resistant alloys	2.4856	**OFHT050410SN-F50**	**CTC5240** (HCF5240)	35	Emulsion

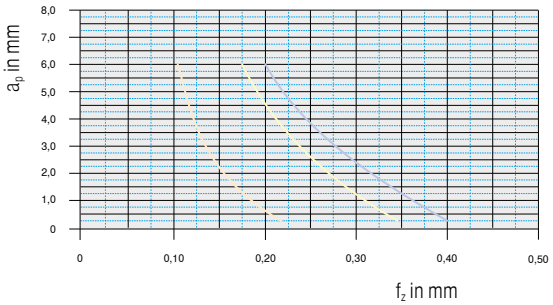
System MaxiMill 274-12

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



SF.. 12



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SFKT1204AFSR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SFKT1204AFSR-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301				
Heat resistant alloys	2.4856	**SFHT1204AFER-F40**	**CTC5240** (HCF5240	35	Emulsion

15

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 271

Cutting data appoximate values

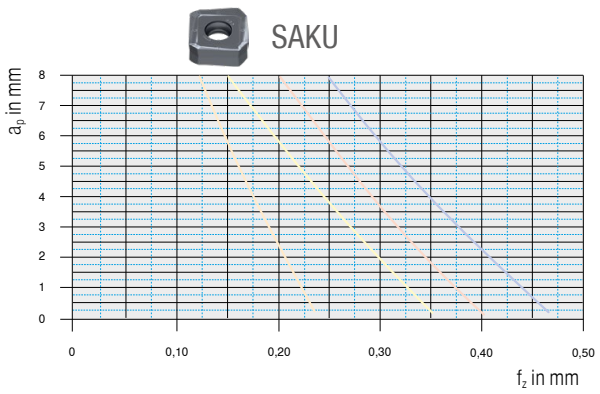
MaxiMill 271

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,2–0,3	8,4	50–340	0,2–0,5	8,4	50–340	0,2–0,5	8,4
Stainless steel	60–270	0,2–0,3	8,4	60–270	0,2–0,5	8,4	60–270	0,2–0,5	8,4
Cast iron				130–360	0,2–0,5	8,4	130–360	0,2–0,5	8,4
Non-ferrous metals									
Heat resistant alloys	25–80	0,2–0,3	8,4	25–80	0,2–0,3	8,4	25–80	0,2–0,3	8,4
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SAKU 1706ABSR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SAKU 1706ABSR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SAKU 1706ABSR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SAKU 1706ABSR-F50**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

MaxiMill 273 / 273 XAHT system

Cutting data appoximate values

MaxiMill 273

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,2–0,25	3,5	60–280	0,2–0,5	3,5	60–280	0,2–0,5	3,5
Stainless steel	130–240	0,2–0,5	3,5	60–270	0,2–0,5	3,5	60–270	0,2–0,5	3,5
Cast iron				130–360	0,2–0,5	3,5	130–360	0,2–0,5	3,5
Non-ferrous metals									
Heat resistant alloys	25–80	0,2–0,25	3,5	25–80	0,2–0,25	3,5	25–80	0,2–0,25	3,5
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

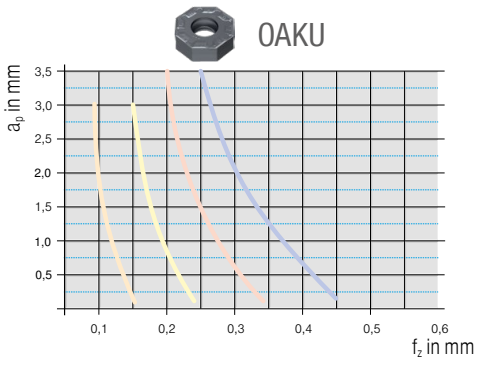
System MaxiMill 273 Wiper insert XAHT

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm						
Steel	60–350	0,05–0,15	0,20–1,00						
Stainless steel	40–250	0,05–0,15	0,20–1,00						
Cast iron	70–280	0,05–0,15	0,20–1,00						
Non-ferrous metals									
Heat resistant alloys	10–100	0,05	0,20–1,00						
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**OAKU 060508SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**OAKU 060508SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**OAKU 060508SR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**OAKU 060508ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 270-09

Cutting data recommendations/Technology data

for standard inserts

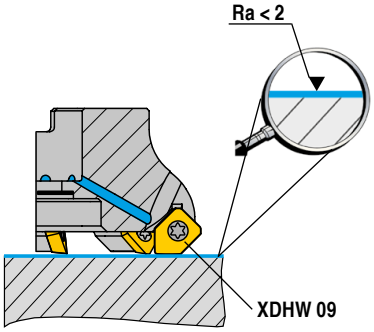
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,3	4	60–280	0,1–0,3	4	60–280	0,1–0,3	4
Stainless steel	60–270	0,1–0,25	4	60–270	0,1–0,25	4	60–270	0,1–0,25	4
Cast iron	110–130	0,05–0,4		130–360	0,1–0,35	4	130–360	0,1–0,35	4
Non-ferrous metals	160–1500	0,05–0,4	4	160–1500	0,05–0,4	4	160–1500	0,05–0,4	4
Heat resistant alloys	25–80	0,1–0,25	4	25–80	0,1–0,25	4	25–80	0,1–0,25	4
hardened materials									

for wiper inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	150–350	0,05–0,25	0,10–2,0						
Stainless steel	110–200	0,05–0,25	0,10–2,0						
Cast iron	150–280	0,05–0,25	0,10–2,0						
Non-ferrous metals	< 2000	0,05–0,25	0,10–2,0						
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy



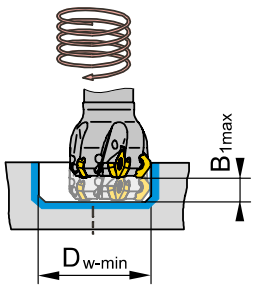
Finish milling with wiper inserts

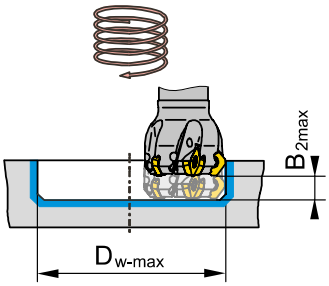
Two wiper inserts are mounted in each 125mm head




Steel	SDNT	0903AESN-29	DPX 1235	+	XDHW	0903AESN	DPX 1235
	SDNT	0903AESN-29	DCX 1230	+	XDHW	0903AESN	DCX 1230
	SDHT	0903AESN-33	DCX 1230	+	XDHW	0903AESN	DCX 1230
	SDHW	0903AESN	CWC 10	+	XDHW	0903AESN	CWC 10
Cast iron	SDNT	0903AESN-31	DCX 3215	+	XDHW	0903AEEN	DCX 3215
Non-ferrous metals	SDHT	0903AEFN-ALP	CWK 26	+	XDHW	0903AEFN	CWK 26

Helical plunge milling (without start hole)





C 270-09

DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm
6	14,4	1,5	19,0	1,5
12	28,5	1,5	31,0	1,5
16	36,5	1,5	39,0	1,5
20	44,5	1,5	47,0	1,5
25	54,5	1,5	57,0	1,5
32	68,5	1,5	71,0	1,5

A 270-09

DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm
32	68,5	1,5	71,0	1,5
40	84,5	1,5	87,0	1,5
50	104,5	1,5	107,0	1,5
63	130,5	1,5	133,0	1,5
80	164,5	1,5	167,0	1,5
100	204,5	1,5	207,0	1,5
125	254,5	1,5	257,0	1,5
160	324,5	1,5	327,0	1,5

System MaxiMill 270-12

Cutting data recommendations/Technology data

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	30–280	0,1–0,3	6	60–280	0,1–0,3	6	60–280	0,1–0,3	6
Stainless steel	60–270	0,1–0,25	6	60–270	0,1–0,25	6	60–270	0,1–0,25	6
Cast iron	150–200	0,05–0,4	6	130–360	0,1–0,35	6	130–360	0,1–0,3	6
Non-ferrous metals	160–3500	0,05–0,4	6	160–1500	0,05–0,4	6	160–1500	0,05–0,4	6
Heat resistant alloys	25–80	0,1–0,25	6	25–80	0,1–0,25	6	25–80	0,1–0,25	6
hardened materials									

for wiper inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	20–350	0,10–0,25	0,10–4,00						
Stainless steel	40–120	0,10–0,25	0,10–4,00						
Cast iron	120–290	0,10– 0,25	0,10–4,00						
Non-ferrous metals	< 2000	0,10–0,25	0,10–4,00						
Heat resistant alloys									
hardened materials									

for CBN inserts

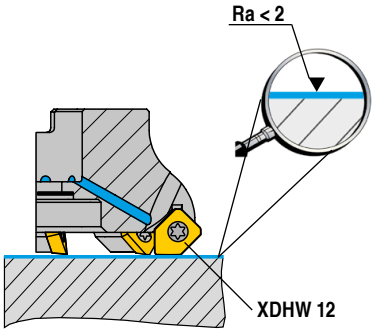
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	600–1600	0,10–0,25	0,20–1,50						
Non-ferrous metals									
Heat resistant alloys	350–700	0,08–0,15	0,20–1,00						
hardened materials	350–600	0,08–0,12	0,20–0,40						

for PCD / MDC inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron									
Non-ferrous metals	< 2000	0,05–0,25	0,10–2,00						
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy



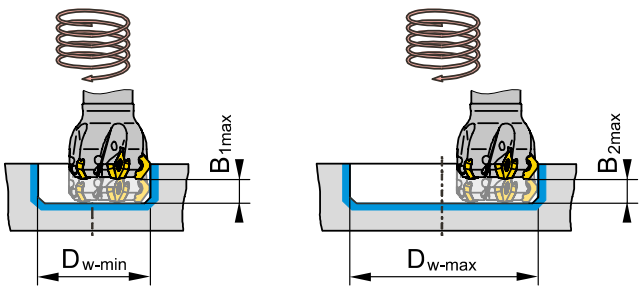
Finish milling with wiper inserts

Two wiper inserts are mounted in each 125mm head




Steel	SDMT 1204AESN-29R	DPX 1235	+	XDHW 1204AESN DPX 1235
	SDMT 1204AESN-29R	DCX 1230	+	XDHW 1204AESN DCX 1230
	SDHW 1204AESN-R	CWC 10	+	XDHW 1204AESN CWC 10
Cast iron	SDMT 1204AEEN-31	DCX 3215	+	XDHW 1204AEEN DCX 3215
	SDHW 1204AESN-R	DCX 3215	+	XDHW 1204AEEN DCX 3215
Non-ferrous metals	SDHT 1204AEFN-ALP	CWK 26	+	XDHW 1204AEFN CWK 26

Helical plunge milling (without start hole)



DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm
32	74,5	1,5	78,0	1,5
40	90,5	1,5	94,0	1,5
50	110,5	1,5	114,0	1,5
63	136,5	1,5	140,0	1,5
80	170,5	1,5	174,0	1,5
100	210,5	1,5	214,0	1,5
125	260,5	1,5	264,0	1,5
160	330,5	1,5	334,0	1,5

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 270-19

Cutting data appoximate values

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel				40–180	0,15–0,6	10	40–180	0,3–0,7	10
Stainless steel				40–120	0,15–0,5	10	40–120	0,3–0,6	10
Cast iron							50–200	0,3–0,9	10
Non-ferrous metals									
Heat resistant alloys				20–70	0,15–0,5	10			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HEC

Cutting data appoximate values

MaxiMill HEC 11

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	100–800	0,08–0,3	6	100–360	0,08–0,3	6	100–360	0,1–0,45	6
Non-ferrous metals									
Heat resistant alloys									
hardened materials									

MaxiMill HEC 12

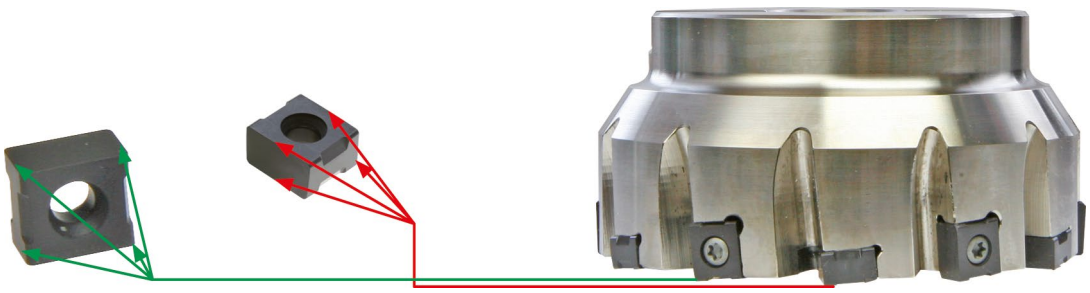
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	100–360	0,08–0,3	8	100–360	0,08–0,3	8	100–360	0,1–0,45	8
Non-ferrous metals									
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

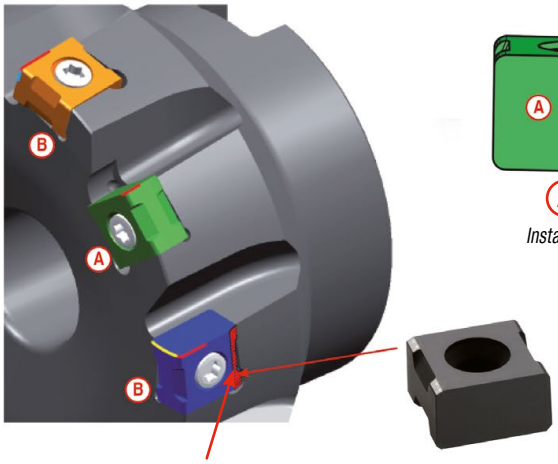
From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HEC 11

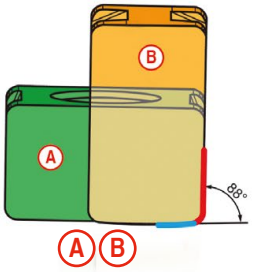
4 cutting edges per installation position



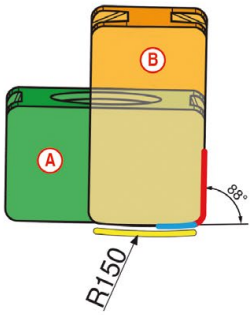
Correct assembly of standard and wiper inserts



Marking for the correct assembly



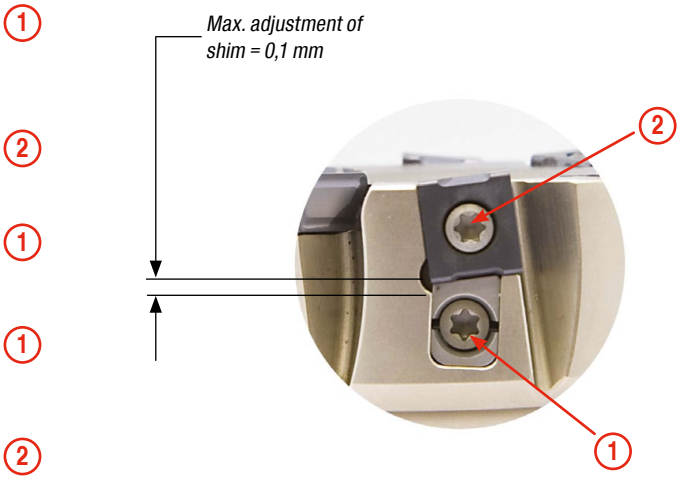
Installation position



Face machining insert — B
Insert main cutting edge — A B
Wiper Facet — B

Adjust the tools in axial direction

- Install the wedge into the cutter body and lightly clamp the clamping screw so as not to clamp.
- Install the inserts as shown and tighten to 1,0 Nm torque.
- Using pre-setting equipment, mark the highest cutting edge.
- With small adjustments of the setting screw set all cutting edges to the same height by 0,005 mm or better.
- Clamp insert with 3,2 Nm torque.



MaxiMill 491-09 system

Cutting data appoximate values

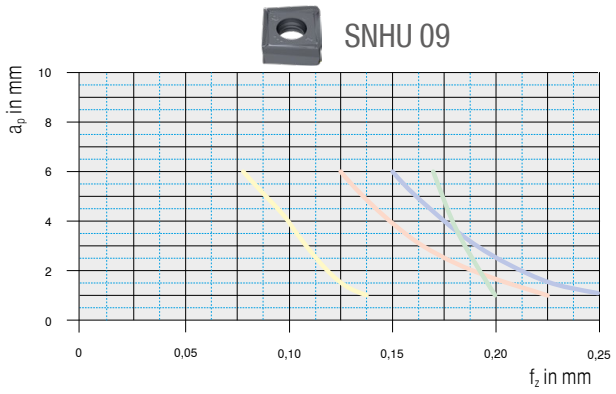
MaxiMill 491-09

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,2	6	60–280	0,1–0,2	6	60–280	0,1–0,2	6
Stainless steel	60–280	0,05–0,2	6	130–240	0,05–0,25	6	130–240	0,1–0,25	6
Cast iron	110–130	0,05–0,25	6	100–360	0,1–0,25	6	100–360	0,1–0,25	6
Non-ferrous metals	160–1500	0,05–0,25	6	160–1500	0,05–0,25	6	160–1500	0,05–0,25	6
Heat resistant alloys	25–75	0,08–0,15	6	25–75	0,08–0,15	6	25–75	0,08–0,15	6
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Non-ferrous metals	450 N/mm²	4.3	3.2315	AlMgSi1



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SNHU09T308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SNHU09T308SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SNHU09T308SR-R50**	**CTCK215** (DCX3215)	250	Dry
Non-ferrous metals	3.2315	**SNHU09T308FR-F10**	**CTWN215** (CWK4615)	500	Emulsion

From v_c > 400 m/min, the tool must be balanced!

MaxiMill 491-12 system

Cutting data appoximate values

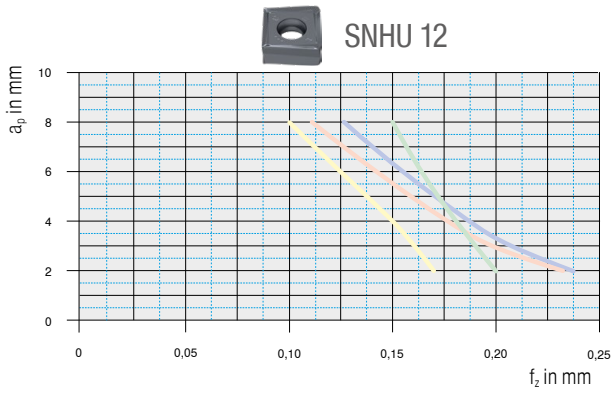
MaxiMill 491-12

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,2	8	60–280	0,1–0,2	8	60–280	0,1–0,2	8
Stainless steel	60–280	0,05–0,2	8	130–240	0,05–0,25	8	130–240	0,1–0,25	8
Cast iron	110–130	0,05–0,25	8	100–360	0,1–0,25	8	100–360	0,1–0,25	8
Non-ferrous metals	160–1500	0,05–0,25	8	160–1500	0,05–0,25	8	160–1500	0,05–0,25	8
Heat resistant alloys	25–75	0,08–0,15	8	25–75	0,08–0,15	8	25–75	0,08–0,15	8
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Non-ferrous metals	450 N/mm²	4.3	3.2315	AlMgSi1



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SNHU120408SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SNHU120408SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SNHU120408SR-R50**	**CTCK215** (DCX3215)	250	Dry
Non-ferrous metals	3.2315	**SNHU120408FR-F10**	**CTWN215** (CWK4615)	500	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 211-07

Cutting data recommendations/Technology data

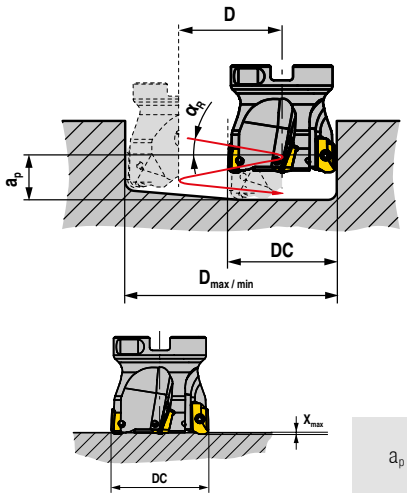
for standard inserts

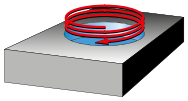
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,1–0,2	6	50–340	0,1–0,2	6	50–340	0,1–0,2	6
Stainless steel	60–280	0,05–0,2	6	60–280	0,05–0,3	6	60–280	0,1–0,3	6
Cast iron				100–360	0,1–0,3	6	100–360	0,1–0,3	6
Non-ferrous metals	160–1500	0,1–0,2	6	160–1500	0,1–0,2	6	160–1500	0,1–0,2	6
Heat resistant alloys	25–75	0,05–0,15	6	25–75	0,05–0,15	6	25–75	0,05–0,15	6
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

Helical plunge milling



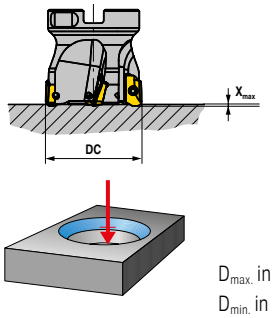


DC mm	D_{max} / RE 0,4 mm	D_{min} mm	$\alpha_{R\,max}$ °
10	19	13	5,5
12	23	17	6,0
16	31	25	3,0
20	39	33	2,0
25	49	43	1,5
32	63	57	1,2
40	79	73	0,8
50	99	93	0,7

DC mm	D mm	$\alpha_{R\,max\,360°}$ °
10	13	5,5
12	17	6,0
16	25	3,0
20	33	2,0
25	43	1,5
32	57	1,2
40	73	0,8
50	93	0,7

a_p in mm = $D * \pi * \tan \alpha_R$

Axial plunging

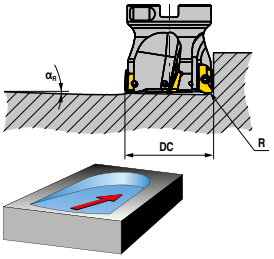


DC mm	X_{max} mm
10	0,8
12	0,8
16	0,8
20	0,8
25	0,8
32	0,8
40	0,8
50	0,8

$D_{max.}$ in mm = largest diameter for flat bottom hole

$D_{min.}$ in mm = smallest hole diameter for flat bottom surface

Angled ramping



DC mm	α °
10	11,0
12	7,9
16	4,3
20	3,0
25	2,5
32	1,6
40	1,2
50	1,0

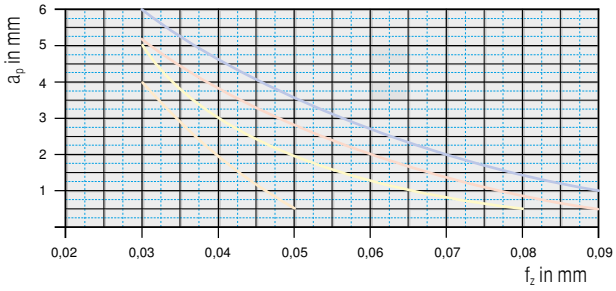
$D = D_{max} - DC / D_{min} - DC$

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XDKT 07



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDKT070308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XDKT070308SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301		**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDKT070308ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 211-11

Cutting data recommendations/Technology data

for standard inserts

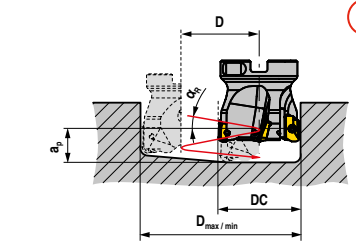
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,1–0,2	10	50–340	0,1–0,2	10	50–340	0,1–0,2	10
Stainless steel	60–280	0,05–0,2	10	60–280	0,05–0,25	10	60–280	0,1–0,25	10
Cast iron				100–360	0,1–0,25	10	100–360	0,1–0,25	10
Non-ferrous metals	160–1500	0,1–0,2	10	160–1500	0,1–0,2	10	160–1500	0,1–0,2	10
Heat resistant alloys	25–75	0,05–0,15	10	25–75	0,05–0,15	10	25–75	0,05–0,15	10
hardened materials				40–60	0,05–0,2	10			

for shell end mill

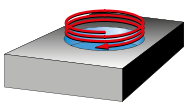
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	100–300	0,05–0,20	≤ APMX						
Stainless steel	80–200	0,05–0,20	≤ APMX						
Cast iron	110–300	0,05–0,20	≤ APMX						
Non-ferrous metals	300–2000	0,10–0,25	≤ APMX						
Heat resistant alloys	40–80	0,05–0,15	≤ APMX						
hardened materials	30–50	0,05–0,10	≤ APMX						

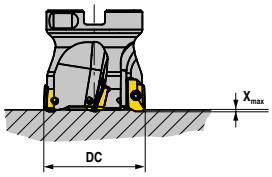
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

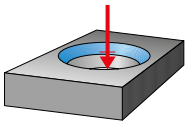


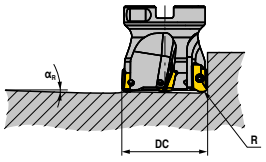
1 Helical plunge milling



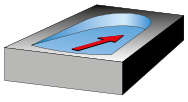


2 Axial plunging





3 Angled ramping



DC mm	1 Helical plunge milling RE = 0,8 mm		2 Axial plunging X_{max}	3 Angled ramping α_R
12	α_R	16°	1,3 mm	18°
	D_{max}	21 mm		
	D_{min}	14 mm		
16	α_R	9,5°	1,5 mm	10,8°
	D_{max}	29 mm		
	D_{min}	21 mm		
20	α_R	7°	2,0 mm	9,8°
	D_{max}	37 mm		
	D_{min}	30 mm		
25	α_R	4,5°	2,0 mm	7,5°
	D_{max}	47 mm		
	D_{min}	40 mm		
32	α_R	3,2°	1,0 mm	4,8°
	D_{max}	61 mm		
	D_{min}	53 mm		
40	α_R	2,2°	1,6 mm	2,9°
	D_{max}	77 mm		
	D_{min}	72 mm		
50	α_R	1,7°	1,6 mm	2,2°
	D_{max}	98 mm		
	D_{min}	93 mm		
63	α_R	1,5°	1,6 mm	1,8°
	D_{max}	123 mm		
	D_{min}	116 mm		
80	α_R	1,0°	1,6 mm	1,4°
	D_{max}	157 mm		
	D_{min}	153 mm		
100	α_R	0,8°	1,6 mm	1,1°
	D_{max}	107 mm		
	D_{min}	101 mm		

	maximum rpm based on overhang length. n_{max} in min^{-1}				
DC mm	l_a = 1–2 x Ø mm	l_a = 2,5 x Ø mm	l_a = 3 x Ø mm	l_a = 4 x Ø mm	l_a = 5 x Ø mm
12	55000	51500	47000	42000	37000
16	42000	38500	34100	28900	24200
20	36900	33000	28500	23900	19500
25	33200	29000	24400	19900	15400
32	30200	26000	20900	16600	11900
40	27700	23000	18000	13500	9000
50	25400	20400	15400	10800	6100
63	23300	18300	12900	8300	3700
80	21300	16100	10600	5800	
100	19600	14100	8400		

$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest diameter for flat bottom hole

a_p in mm = $D \times \pi \times \tan(\alpha_R)$ = Pitch

l_a in mm = Overhang length

System MaxiMill 211-15

Cutting data recommendations/Technology data

for standard inserts

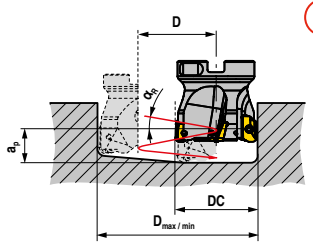
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,1–0,2	14	50–340	0,1–0,2	14	50–340	0,1–0,2	14
Stainless steel	60–280	0,05–0,2	14	60–280	0,05–0,25	14	60–280	0,1–0,25	14
Cast iron				100–360	0,1–0,25	14	100–360	0,1–0,25	14
Non-ferrous metals	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14
Heat resistant alloys	25–75	0,05–0,15	14	25–75	0,05–0,15	14	25–75	0,05–0,15	14
hardened materials				40–60	0,05–0,2	14			

for shell end mill

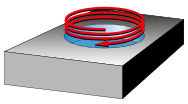
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	120–300	0,08–0,35	≤ APMX						
Stainless steel	150–200	0,08–0,35	≤ APMX						
Cast iron	130–300	0,08–0,35	≤ APMX						
Non-ferrous metals	400–2500	0,12–0,40	≤ APMX						
Heat resistant alloys	25–80	0,08–0,20	≤ APMX						
hardened materials									

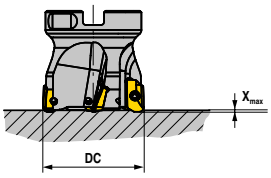
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

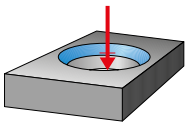


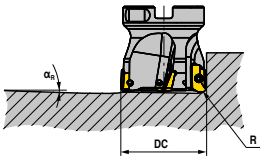
1 Helical plunge milling



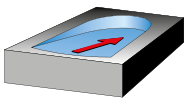


2 Axial plunging





3 Angled ramping



	1	2	3
DC mm	Helical plunge milling RE = 0,8 mm	Axial plunging X_{max}	Angled ramping α_R
25	α_R 7,5° D_{max} 48 mm D_{min} 37 mm	2,7 mm	9,5°
32	α_R 5° D_{max} 62 mm D_{min} 47 mm	2,5 mm	6,8°
40	α_R 3,2° D_{max} 78 mm D_{min} 63 mm	2,5 mm	5,1°
50	α_R 2,5° D_{max} 98 mm D_{min} 86 mm	2,5 mm	2,5°
63	α_R 1,5° D_{max} 124 mm D_{min} 111 mm	2,5 mm	2,5°
80	α_R 1,3° D_{max} 158 mm D_{min} 147 mm	2,5 mm	2,0°
100	α_R 1,1° D_{max} 198 mm D_{min} 190 mm	2,5 mm	1,5°
125	α_R 0,9° D_{max} 248 mm D_{min} 240 mm	2,5 mm	0,9°
160	α_R 0,6° D_{max} 318 mm D_{min} 310 mm	2,5 mm	0,7°

$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest diameter for flat bottom hole

a_p in mm = D x π x tan (α_R) = Pitch

l_a in mm = Overhang length

DC mm	maximum rpm based on overhang length. n_{max} in min^{-1} $l_a = 2 \times Ø$ mm	$l_a = 3 \times Ø$ mm	$l_a = 5 \times Ø$ mm
25	26560	19520	13320
32	24160	16720	9520
40	22160	14400	7200
50	20320	12320	4880
63	18640	10320	2960
80	17040	8480	
100	15680	6720	
125	14320		
160	13200		

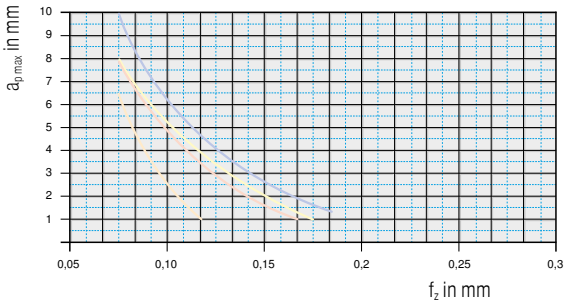
System MaxiMill 211-11

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XDKT 11



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDKT11T308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XDKT11T308SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XDKT11T308SR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDKT11T308ER-F50**	**CTC5240** (HCF5240)	35	Emulsion

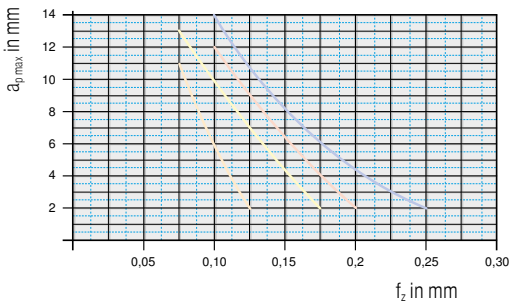
System MaxiMill 211-15

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XDKT 15



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDKT150508SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571		**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XDKT150508SR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDKT150508ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

15

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 211-20

Cutting data recommendations/Technology data

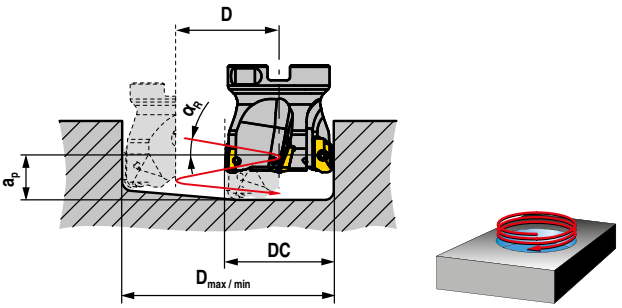
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel	130–280	0,08–0,2	19	130–280	0,08–0,3	19	180–280	0,1–0,25	19
Cast iron									
Non-ferrous metals									
Heat resistant alloys	25–80	0,08–0,2	19	25–80	0,08–0,3	19	25–80	0,1–0,15	19
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

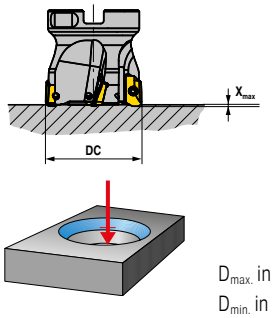
Helical plunge milling



DC mm	D_{max} / RE 0,4 mm	D_{min} mm	$\alpha_{R\,max}$ °
63	124	107	2,2
80	158	143	1,7
100	198	183	1,3

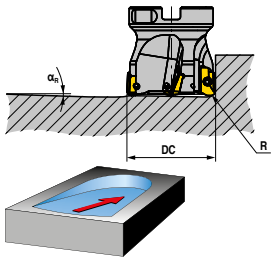
a_p in mm = $D * \pi * \tan \alpha_R$

Axial plunging



DC mm	X_{max} mm
63	2,0
80	2,0
100	2,0

Angled ramping



DC mm	α °
63	2,2
80	1,7
100	1,3

$D_{max.}$ in mm = largest diameter for flat bottom hole

$D_{min.}$ in mm = smallest hole diameter for flat bottom surface

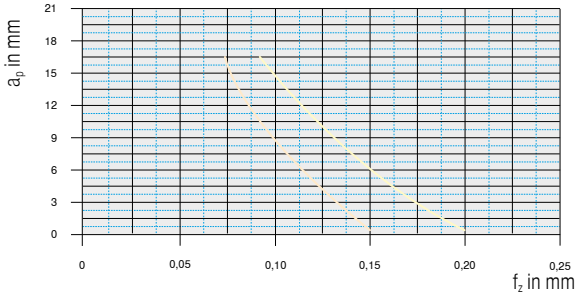
$D = D_{max} - DC / D_{min} - DC$

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XDKT 20



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312				
Stainless steel	1.4571	**XDKT200708ER-F40**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301				
Heat resistant alloys	2.4856	**XDKT200708ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 490-09

Cutting data recommendations/Technology data

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,05–0,25	7,3	50–350	0,05–0,3	7,3	50–270	0,1–0,3	7,3
Stainless steel	130–280	0,1–0,2	7,3	60–280	0,1–0,2	7,3	60–280	0,1–0,2	7,3
Cast iron	100–360	0,05–0,25	7,3	100–360	0,05–0,3	7,3	100–360	0,1–0,3	7,3
Non-ferrous metals	160–1500	0,08–0,35	7,3	160–1500	0,08–0,35	7,3	160–1500	0,08–0,35	7,3
Heat resistant alloys	25–75	0,1–0,2	7,3	25–75	0,1–0,2	7,3	25–75	0,1–0,2	7,3
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

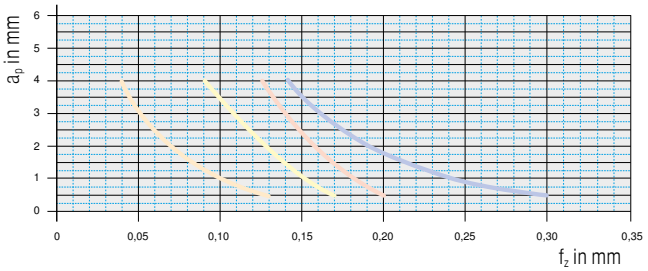
System MaxiMill 490-09 is not suitable for plunging!

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



SDNT 09

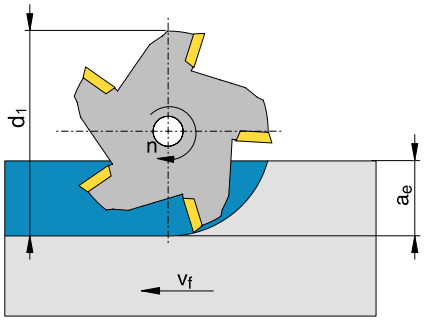


Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SDNT09T308SR-29**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SDNT09T308SR-33**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SDNT09T308SR-31**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SDNT09T308ER-M31**	**CTC5240** (HCF5240)	35	Emulsion

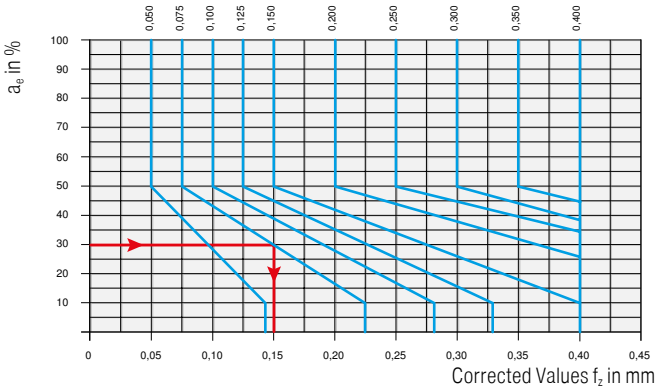
Correction of the tooth load f_z

for System 211-07/-11/-15/-20 and 490-09/-12

These values apply to an engagement width (a_e) below 50 %!



Start values f_z in mm from starting parameter diagram



Example:
Start value (f_z) = 0.075 mm
a_e = 30 %
corrected value (f_z) = 0.15 mm

System MaxiMill 490-12

Cutting data appoximate values

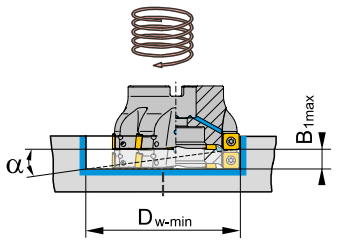
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,05–0,25	10,7	50–350	0,05–0,3	10,7	50–270	0,1–0,3	10,7
Stainless steel	130–280	0,1–0,2	10,7	60–280	0,1–0,2	10,7	60–280	0,1–0,2	10,7
Cast iron	100–360	0,05–0,25	10,7	100–360	0,05–0,3	10,7	100–360	0,1–0,3	10,7
Non-ferrous metals	160–1500	0,08–0,35	10,7	160–1500	0,08–0,35	10,7	160–1500	0,08–0,35	10,7
Heat resistant alloys	25–75	0,1–0,2	10,7	25–75	0,1–0,2	10,7	25–75	0,1–0,2	10,7
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

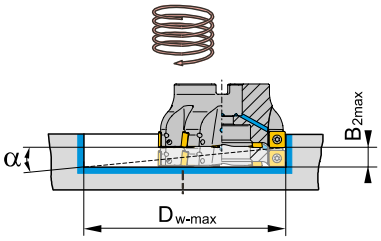
Machining strategy

Helical plunge milling (without start hole)



$$B = (D_W - DC) \times \pi \times \tan \alpha$$

D_w = Diameter of bore to be produced
DC = Nominal diameter of milling cutter
B = Depth of cut calculated for 360° helical movement



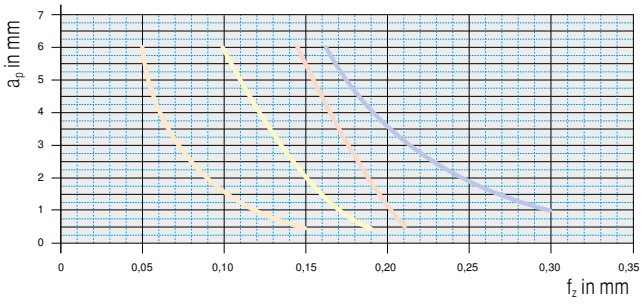
DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm	α °
50	77	2,5	98	4,8	2,0
63	103	1,8	124	3,0	1,0
80	137	2,1	158	3,0	0,8
100	177	2,1	198	2,9	0,6
125	227	1,8	248	2,4	0,4

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



SDMT 12



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SDMT1205ZZSN-29**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SDMT120512SR-33**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SDMT1205ZZSN-31**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SDMT120508ER-M31**	**CTC5240** (HCF5240)	35	Emulsion

HSC/HPC machining

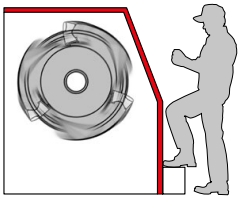
Safety advice

Suitability of the tool for HSC machining

HSC tools from CERATIZIT have been specially developed for this machining strategy and guarantee maximum operational reliability.

Observation of safety precautions of the machine manufacturer

Make sure that all safety precautions of the machine-manufacturer are observed (e.g.: closed machine guards).

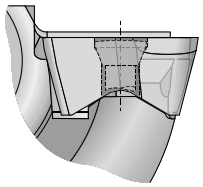


Suitability of the adapters for HSC machining

According to the milling situation, choose the optimum tool/clamping device combination.
For high speed milling applications it is necessary to dynamically balance tool and tool adapter together (see ISO 1940 directives).

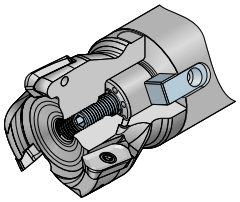
Mounting the indexable insert with centrifugal force protection

Insert clamping: EURO-patent EP 1083017A1
Make sure that the insert pocket is cleaned and the threading bore for the clamping screw is in good condition.
Check the axial and radial contact points of the insert in the pocket.
The clamping screws for positive insert clamping must be tightened with a torque of (XDHT11 = 1,8 Nm; XDH.19 = 6,0 Nm).



Optimum mounting of HSC milling cutters (DC = Ø 40–63) to milling arbors using power screw

The power screw guarantees a stable connection of tool and milling adapter and is easy to use.



Power Screw

Maximum admissible number of revolutions

Please note the maximum number of revolutions stated on the tool. This number is exclusively valid for the specific tool and must be adapted according to the selected tool adapter, total overhang length and the respective machining situation.



Optimum application range of the tool (a_e, a_p, f_z, n)

In order to guarantee productive milling, please observe the recommendations regarding the cutting parameters.

15

Failure to comply with these safety regulations automatically excludes CERATIZIT from any liability

System MaxiMill HSC-11

Cutting data appoximate values

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	110–130	0,05–0,35	10						
Non-ferrous metals	160–3000	0,05–0,35	10	160–3000	0,05–0,35	10	160–3000	0,05–0,35	10
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

	Workpiece material	Treatment / alloy		VDI 3323 Group	Hardness HB	H216T (CWK26) v_c in m/min	H216T (CWK26) v_c in m/min
N	Forged aluminium alloy	non hardenable		21	60		200–3000
		hardenable		22	100		200–2000
	Cast aluminum alloy	non hardenable	< 12% Si	23	80		200–2000
		hardenable	< 12% Si	24	90		200–1800
		non hardenable	> 12% Si	25	130		200–1000
	Copper and Copper alloys (Bronze, Brass)		Free-cutting steel alloy (1% Pb)	26			200–600
			brass, red bronze	27	90	250–1000	250–1000
			bronze	28	100		150–400
			lead-free copper and electrolytic copper	29	100		300–800
	Non metal materials		Duroplastics	29		80–1000	80–1000
			Fibre-reinforced plastics	29		70–500	70–500
			hard rubber	30		80–300	80–300

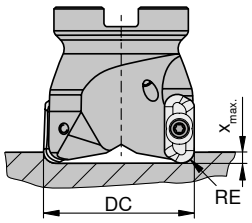
= full lubricant = minimum quantity lubrication = dry machining

System MaxiMill HSC-11

Technical data

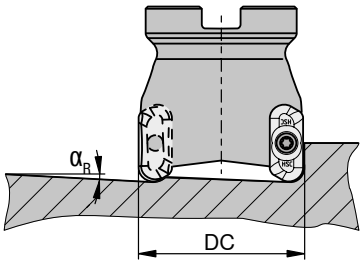
Machining strategy

Plunging



DC mm	11 RE 0,2-4,0 $x_{max.}$ mm
16	1,70
18	2,11
19	2,24
20	2,39
22	2,70
25	2,55
32	2,40
40	2,28
50	2,26
63	2,10
80	1,75
100	1,79

Linear ramping



DC mm	α_R °
16	18,8
18	16,3
19	15,3
20	14,8
22	13,8
25	10,3
32	6,8
40	4,8
50	3,5
63	2,5
80	1,8
100	1,3

Milling strategy for roughing and finishing

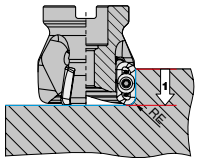
With maximum chip volume

Indexable Insert	RE mm	a_p mm	$a_{p\,max.}$ mm
XDHT 11T302FR-ALP	0,2	10	9,8
XDHT 11T304FR-ALP	0,4	10	9,6
XDHT 11T308FR-ALP	0,8	10	9,2
XDHT 11T312FR-ALP	1,2	10	8,8
XDHT 11T316FR-ALP	1,6	10	8,4
XDHT 11T320FR-ALP	2,0	10	8,0
XDHT 11T325FR-ALP	2,5	10	7,5
XDHT 11T332FR-ALP	3,2	10	6,8
XDHT 11T340FR-ALP	4,0	10	6,0
XDHT 11T350FR-ALP	5,0	10	5,0

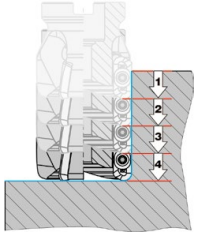
With maximum side wall quality

Indexable Insert	RE mm	$a_{p\,max.}$ mm
XDHT 11T302FR-ALP	0,2	7,8
XDHT 11T304FR-ALP	0,4	7,6
XDHT 11T308FR-ALP	0,8	7,2
XDHT 11T312FR-ALP	1,2	6,5
XDHT 11T316FR-ALP	1,6	6,8
XDHT 11T320FR-ALP	2,0	6,4
XDHT 11T325FR-ALP	2,5	5,5
XDHT 11T332FR-ALP	3,2	4,8
XDHT 11T340FR-ALP	4,0	4,0
XDHT 11T350FR-ALP	5,0	3,0

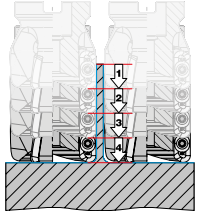
Shoulder milling



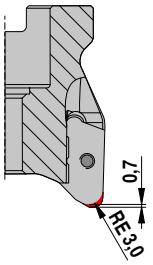
Pocket milling

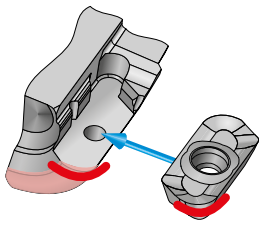


Pocket milling with thin walled components



Modification to front profile





For inserts with a corner radius larger than 3.2 mm the basic body of the tool must be modified according to the drawing above.

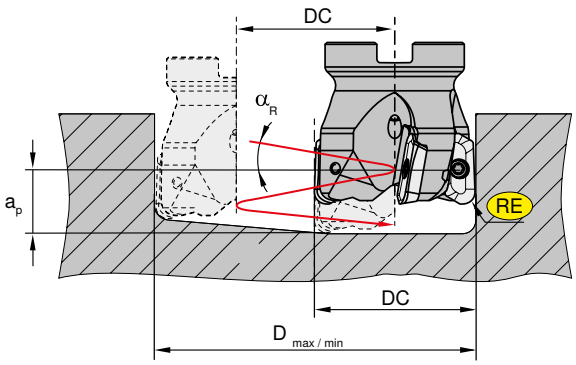
15

System MaxiMill HSC-11

Technical data

Machining strategy

Circular ramping



RE = Insert radius
α_R in mm = Maximum ramping angle (related to centre of tool)

a_p in mm = pitch → $D \times \pi \times \tan(\alpha_R)$

D in mm = pitch → D_{max} – DC and/or D_{min} – DC

For flat bottom hole

$D_{max.}$ in mm = largest drilling diameter
$D_{min.}$ in mm = smallest drilling diameter
$DN_{max.}$ in mm = Maximum hole diameter for non flat bottom

DC in mm		XDHT-11 (HSC-11)								
(DN_{max})		RE = 0,2	RE = 0,4	RE = 0,8	RE = 1,2	RE = 1,6	RE = 2,0	RE = 2,5	RE = 3,2	RE = 4,0
16	α_R	9,7°	10,0°	9,9°	9,4°	8,9°	8,4°	7,9°	7,0°	6,1°
	D_{max}	30	30	29	28	27	27	26	24	23
(31)	D_{min}	18	18	18	18	18	18	18	18	18
18	α_R	9,4°	9,1°	8,7°	8,3°	7,9°	7,5°	6,9°	6,2°	5,3°
	D_{max}	34	34	33	32	31	31	30	28	27
(35)	D_{min}	22	22	22	22	22	22	22	22	22
19	α_R	8,8°	8,6°	8,3°	7,9°	7,5°	7,5°	6,5°	5,9°	5,1°
	D_{max}	36	36	35	34	33	33	32	30	29
(37)	D_{min}	24	24	24	24	24	24	24	24	24
20	α_R	8,4°	8,2°	7,8°	7,4°	7,7°	6,7°	6,2°	5,5°	4,8°
	D_{max}	38	38	37	36	35	35	34	32	31
(39)	D_{min}	26	26	26	26	26	26	26	26	26
22	α_R	7,6°	7,4°	7,8°	6,7°	6,4°	6,5°	5,6°	5,2°	4,3°
	D_{max}	42	42	41	40	39	39	38	36	35
(43)	D_{min}	30	30	30	30	30	30	30	30	30
25	α_R	6,7°	6,5°	6,2°	5,9°	5,6°	5,3°	4,9°	4,4°	3,8°
	D_{max}	48	48	47	46	45	45	44	42	41
(49)	D_{min}	36	36	36	36	36	36	36	36	36
32	α_R	4,7°	4,7°	4,8°	4,6°	4,3°	4,1°	3,8°	3,4°	2,9°
	D_{max}	62	62	61	60	59	59	58	56	55
(63)	D_{min}	50	50	50	50	50	50	50	50	50
40	α_R	3,3°	3,3°	3,4°	3,4°	3,5°	3,3°	3,0°	2,7°	2,3°
	D_{max}	78	78	77	76	75	75	74	72	71
(79)	D_{min}	66	66	66	66	66	66	66	66	66
50	α_R	2,4°	2,5°	2,5°	2,5°	2,6°	2,6°	2,4°	2,2°	1,9°
	D_{max}	98	98	97	96	95	95	94	92	91
(99)	D_{min}	86	86	86	86	86	86	86	86	86
63	α_R	1,7°	1,7°	1,7°	1,8°	1,8°	1,8°	1,8°	1,7°	1,5°
	D_{max}	124	124	123	122	121	121	120	118	117
(125)	D_{min}	112	112	112	112	112	112	112	112	112
80	α_R	1,1°	1,1°	1,1°	1,1°	1,1°	1,1°	1,1°	1,2°	1,2°
	D_{max}	158	158	157	156	155	155	154	152	151
(159)	D_{min}	146	146	146	146	146	146	146	146	146
100	α_R	0,8°	0,8°	0,9°	0,9°	0,9°	0,9°	0,9°	0,9°	0,9°
	D_{max}	198	198	197	196	195	195	194	192	191
(199)	D_{min}	186	186	186	186	186	186	186	186	186

System MaxiMill HSC/HPC-19

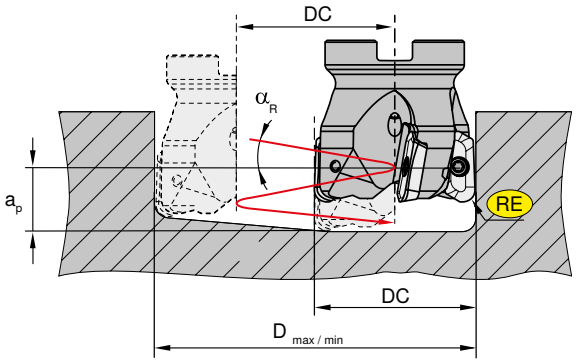
Cutting data recommendations/Technology data

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	110–130	0,05–0,35	18						
Non-ferrous metals	160–3000	0,05–0,35	18	160–3000	0,05–0,35	18	160–3000	0,05–0,35	18
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Circular ramping



RE = Insert radius
α_R in mm = Maximum ramping angle (related to centre of tool)

a_p in mm = pitch → D x π x tan (α_R)

D in mm = pitch → D_{max} – DC and/or D_{min} – DC

For flat bottom hole

$D_{max.}$ in mm = largest drilling diameter
$D_{min.}$ in mm = smallest drilling diameter
$DN_{max.}$ in mm = Maximum hole diameter for non flat bottom

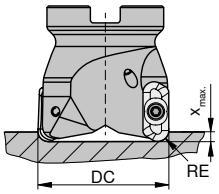
	DC mm	DN_{max} mm	α_R °	D_{max} mm	D_{min} mm
RE = 0,2 mm	**25**	49	7°02‘	48	32
	32	63	4°34‘	62	46
	40	79	3°47‘	78	62
	50	99	3°01‘	97	81
	63	125	2°17‘	124	107
	80	159		158	141
	100	199		198	181
RE = 0,4 mm	**25**	49	7°08‘	48	32
	32	63	4°37‘	62	46
	40	79	3°49‘	78	62
	50	99	3°02‘	98	81
	63	125	2°18‘	124	107
	80	159		158	141
	100	199		198	181
RE = 0,8 mm	**25**	49	7°21‘	47	32
	32	63	4°44‘	61	46
	40	79	3°53‘	77	62
	50	99	3°05‘	97	81
	63	125	2°20‘	123	107
	80	159		157	141
	100	199		197	181
RE = 2,0 mm	**25**	49	8°40‘	45	32
	32	63	5°04‘	59	46
	40	79	4°06‘	75	62
	50	99	3°13‘	95	81
	63	125	2°25‘	121	107
	80	159		155	141
	100	199		195	181
RE = 2,5 mm	**25**	49	8°24‘	44	32
	32	63	5°13‘	58	46
	40	79	4°12‘	74	62
	50	99	3°17‘	94	81
	63	125	2°27‘	120	107
	80	159		154	141
	100	199		194	181
RE = 3,2 mm	**25**	49	8°54‘	42	32
	32	63	5°26‘	56	46
	40	79	4°20‘	72	62
	50	99	3°21‘	92	81
	63	125	2°30‘	118	107
	80	159		152	141
	100	199		192	181
RE = 4,0 mm	**25**	49	9°32‘	41	32
	32	63	5°42‘	55	46
	40	79	4°30‘	71	62
	50	99	3°28‘	91	81
	63	125	2°33‘	117	107
	80	159		151	141
	100	199		191	181
RE = 5,0 mm	**25**	49	6°49‘	39	32
	32	63	3°59‘	53	46
	40	79	3°20‘	69	62
	50	99	2°13‘	89	81
	63	125	1°52‘	115	107
	80	159		149	141
	100	199		189	181

System MaxiMill HSC/HPC-19

Technical data

Machining strategy

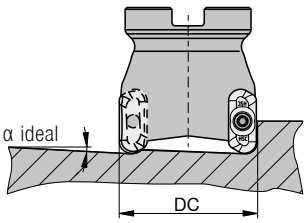
Plunging



HSC 19	DC mm	19 RE 0,2–4,0 $x_{max.}$ mm	19 RE 5,0 $x_{max.}$ mm
CHSC 19 / GHSC 19 / MHSC 19	25	5,0	4,0
CHSC 19 / GHSC 19 / MHSC 19	32–40	4,0	3,0
AHSC 19	40–100	4,0	3,0

HPC 19	DC mm	19 RE 0,2–4,0 $x_{max.}$ mm	19 RE 5,0 $x_{max.}$ mm
CHPC 19 / MHPC 19	22–25	5,0	4,0
CHPC 19 / MHPC 19	32–50	6,0	5,0
AHPC 19	40–63	6,0	5,0

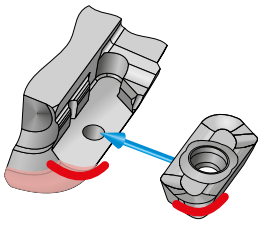
Linear ramping

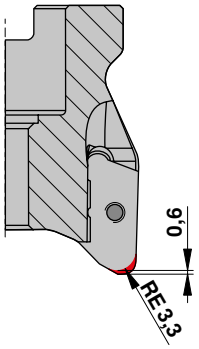


DC mm	α ideal HSC 19	α ideal HPC 19
25	11°	11°
32	7°	7°
40	5°	5°
50	4°	4°
63	3°	3°
80	2°	
100	2°	

Modification to basic body

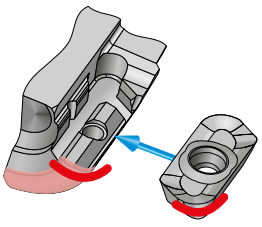
HSC 19





Modification to front profile

HPC 19



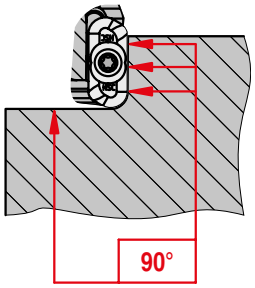
For inserts with a corner radius larger than 4.0 mm the basic body of the tool must be modified according to the drawing above.

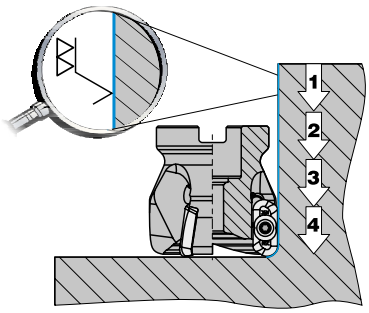
System MaxiMill HSC/HPC-19

Technical data

Machining strategy

▽ + ▽▽ Excellent side wall quality after roughing operation.
Additional finishing operations minimized or no longer required.





Milling strategy for roughing and finishing

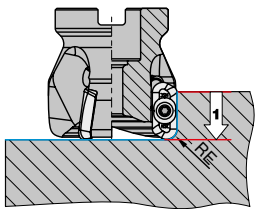
With maximum chip volume

Indexable Insert	RE mm	a_p mm	$a_{p\ max.}$ mm
XDH. 190402FR-ALP	0,2	18,0	17,8
XDH. 190404FR-ALP	0,4	18,0	17,6
XDH. 190408FR-ALP	0,8	18,0	17,2
XDH. 190420FR-ALP	2,0	18,0	16,0
XDH. 190425FR-ALP	2,5	18,0	15,0
XDH. 190432FR-ALP	3,2	18,0	14,8
XDH. 190440FR-ALP	4,0	18,0	14,0
XDH. 190450FR-ALP	5,0	17,0	13,0

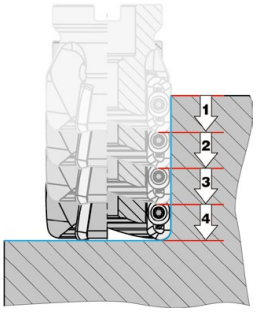
With maximum side wall quality

Shoulder milling	RE mm	$a_{p\ max.}$ mm
XDH. 190402FR-ALP	0,2	11,8
XDH. 190404FR-ALP	0,4	11,6
XDH. 190408FR-ALP	0,8	11,2
XDH. 190420FR-ALP	2,0	10,0
XDH. 190425FR-ALP	2,5	9,5
XDH. 190432FR-ALP	3,2	8,8
XDH. 190440FR-ALP	4,0	8,0
XDH. 190450FR-ALP	5,0	7,0

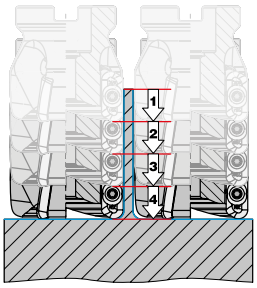
Shoulder milling



Pocket milling



Pocket milling with thin walled components



15

This information applies to the inserts type XDHT 19 and XDHX 19.

System MaxiMill HPC-04/12

Cutting data recommendations/Technology data

MaxiMill HPC-04

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	450–800	0,05–0,2	4						
Non-ferrous metals	350–3500	0,05–0,2	4	350–3500	0,05–0,2	4			
Heat resistant alloys									
hardened materials									

MaxiMill HPC-12

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	450–800	0,05–0,2	2						
Non-ferrous metals	350–3500	0,1–0,35	11	350–3500	0,1–0,35	11	350–3500	0,1–0,4	11
Heat resistant alloys									
hardened materials									

Machining strategy

What do you have to take into account?

- Machine stability.
- Stable work piece clamping and tool adapter.
- Use of coolant generally not necessary, however, this will facilitate the removal of the chips - also improved surface quality.
- Take into account thermal stress and critical temperature of 600 °C! If required for material, work with coolant.
- Avoid vibration.
- Observe balancing quality class.
- Observe chemical reactions of diamond to carbide forming elements (Fe, Ti, Ta, Co, Ni)

Excellent suitability

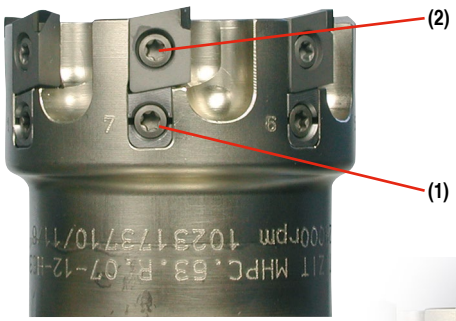
- for components made of light metals and non-ferrous metals, plastic, fibre composite materials, graphite ...
- when the simplest setting method saves cost for tool presetting.
- for high-volume production.
- for high surface quality of the work pieces.
- when long tool life is necessary to reduce tool changes and expensive machine downtime.
- when the tool is already on site (presetting, etc.)

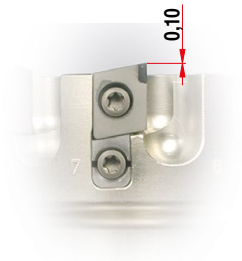
Quality class check

After assembly, clamping of the inserts and adjustment of the axial run-out the balancing quality class of the tools should be checked. When applying shell milling cutters, after assembly with an adapter balancing is necessary.

Setting wiper inserts

As in the setting procedure described above the standard inserts are adjusted to a radial run-out of = 0.02 mm. The inserts with wiper edge are then set to 0.02–0.03 mm above the highest cutting edge.





The adjustment procedure

1 Mount Adjustment wedgesin the tools (as delivered). Tighten adjustment screw (1) without deforming the wedges.

2 Mount the PCD inserts and tighten the clamping screws (2) with 1.0 Nm.

3 Mark „ highest edge“ with the help of pre-setting equipment.

4 Adjust the PCD insert by 0.02 mm turning the clamping screw (1) clockwise.

Pre-loading must be reached. Use the angled TORX screwdrivers

5 Set other cutting edges to this level, maximum deviation of 0.005 mm. Maximum length adjustment = 0.10 mm.

6 Tighten all insert tightening screws (2) to 5,0 Nm.

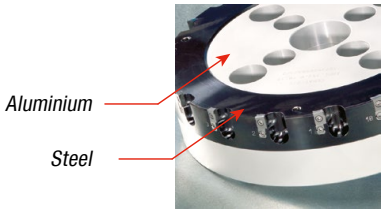
7 Check axial run-out of all inserts: Target = 0.005 mm.

Perfect precision – MaxiMill HPC-12

The adjustable high-performance tool for the finishing of aluminium components

Tool body made of steel

- For highest stability
- Maximum abrasion resistance
- Bimetallic version from diameter 160 mm easier handling and spindle protection with large tools



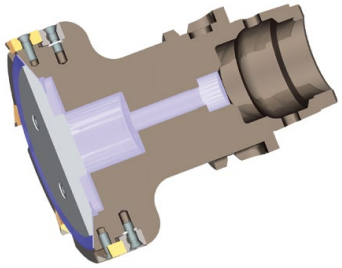
Picture shows bimetallic version

Available as shell milling cutters and monobloc type

- Direct HSK63 connection as monobloc type
- Monobloc tools balanced to G2.5 at n=20,000 min^{-1} (ISO1940)

Particularly for HSC applications with internal coolant supply

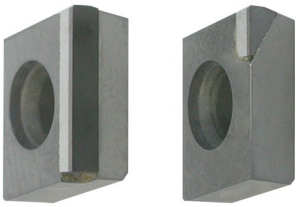
- Improved chip evacuation
- High surface quality
- Optimum application conditions
- Suitability for minimum quantity lubrication



Time is money – the system MaxiMill HPC-12 is simple and quick to adjust!

Highly positive rake angle of +25°

- Low cutting forces
- Increased parallelism of surfaces
- Minimised component deformation



Tangential concept

- Stable location for the PCD segment and maximum process security

Adapted PCD cutting edge

- High impact strength when milling!
- Maximum edge stability
- Reduced built-up edge on the work piece
- The machining of Al-Si alloys with over 12 % silicon is possible without problems

Inserts Selection

- Standard insert
- Insert with corner radius
- Insert with wiper edge

System MaxiMill 141 / 241

Cutting data recommendations/Technology data

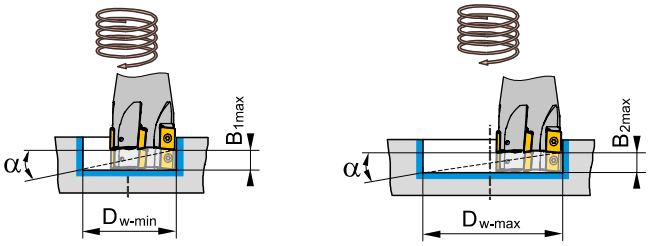
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,2	14	60–280	0,1–0,2	14	60–280	0,1–0,2	14
Stainless steel	130–240	0,05–0,2	14	130–240	0,05–0,25	14	130–240	0,1–0,25	14
Cast iron				100–360	0,1–0,25	14			
Non-ferrous metals	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14
Heat resistant alloys									
hardened materials									

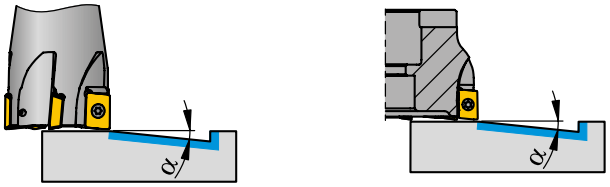
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

Helical plunge milling (without start hole)



Angled ramping



D_w = Diameter of bore to be produced
DC = Nominal diameter of milling cutter
B = Depth of cut calculated for 360° helical movement

$$B = (D_w - DC) \times \pi \times \tan \alpha$$

C 141

DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm	α °
16	20,0	0,4	30,0	1,5	2,0
20	24,0	0,4	38,0	1,9	2,0
25	34,0	0,9	48,0	2,5	2,0
32	48,0	1,7	62,0	3,2	2,0
40	64,0	1,9	78,0	3,1	1,5

A 241

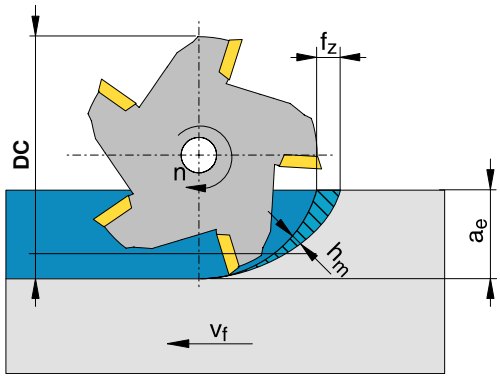
DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm	α °
40	64,0	1,9	78,0	3,1	1,5
50	84,0	1,8	98,0	2,6	1,0
63	110,0	1,2	124,0	1,6	0,5
80	144,0	1,4	158,0	1,7	0,4
100	184,0	1,3	198,0	1,6	0,3
125	234,0	1,2	248,0	1,3	0,2

Average chip thickness [h_m] – the approach

Shoulder milling

1 Select appropriate average chip thickness [h_m] for the steel from the table.

Material	Tensile strength N/mm²	h_m mm
for steel	...–800	0,16
for steel	800–1000	0,14
for steel	1000–1200	0,12
for steel	1200–...	0,10
for stainless steel	...–750	0,15
for stainless steel	750–900	0,13
for stainless steel	900–1150	0,11
for stainless steel	1150–...	0,09 *



2 Select the corrected feed rate value from the table based on the appropriate chip thickness [h_m] and depth of cut [a_e].

h_m mm	Corrected feed value f_z for h_m				
0,16	0,36	0,29	0,25	0,18	0,16
0,14	0,31	0,26	0,22	0,16	0,14
0,12	0,27	0,22	0,19	0,14	0,12
0,10	0,22	0,18	0,16	0,12	0,10
0,15	0,34	0,27	0,24	0,17	0,15
0,13	0,29	0,24	0,21	0,15	0,13
0,11	0,25	0,20	0,17	0,13	0,11
0,09 *	0,20	0,16	0,14	0,10	0,09 *
a_e =	**0,2 x DC**	**0,3 x DC**	**0,4 x DC**	**0,75 x DC**	**1 x DC**

Face milling

Material	Tensile strength N/mm²	h_m mm
for steel	...–800	0,2
for steel	800–1000	0,18
for steel	1000–1200	0,16
for steel	1200–...	0,14
for stainless steel	... –750	0,21
for stainless steel	750–900	0,19
for stainless steel	900–1150	0,17
for stainless steel	1150– ...	0,15

Procedure as shoulder milling.

h_m mm	Corrected feed value f_z for h_m			
0,20	0,40 **	0,40 **	0,33	0,28
0,18	0,40 **	0,40 **	0,29	0,25
0,16	0,40 **	0,36	0,26	0,23
0,14	0,36	0,31	0,23	0,20
0,21	0,40 **	0,40 **	0,34	0,30
0,19	0,40 **	0,40 **	0,31	0,27
0,17	0,40 **	0,38	0,28	0,24
0,15	0,39	0,34	0,24	0,21
a_e =	**0,3 x DC**	**0,4 x DC**	**0,75 x DC**	**1 x DC**

* f_z < 0,08 mm: Danger, as tool is not working and cutting
** f_z > 0,4 mm: Danger of an open space contact

System MaxiMill HFC-06

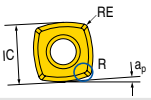
Cutting data recommendations/Technology data

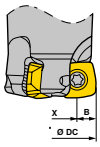
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–1,25	0,8	60–280	0,2–1,25	0,8
Stainless steel				60–270	0,2–1,25	0,8	60–270	0,2–1,25	0,8
Cast iron				130–360	0,2–1,25	0,8	130–360	0,2–1,25	0,8
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–1,25	0,8	25–75	0,2–1,25	0,8
hardened materials									

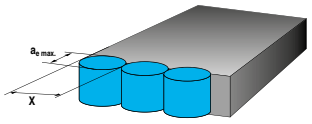
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

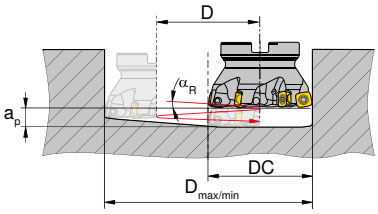
Programmed radius R = 1.2 mm

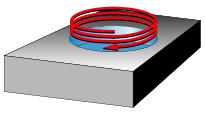


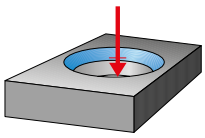


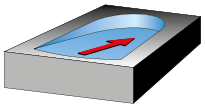


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
6,35	0,5	0,8	16–32	DC–(2 x B)	4,3	5,3	0,10	0,08	0,15	<0,7 x DC









	circular		
	Helical plunging (helical plunging into solid material)		
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °
16	31	22	4,5°
20	39	30	2,3°
25	49	40	1,3°
32	63	54	0,9°

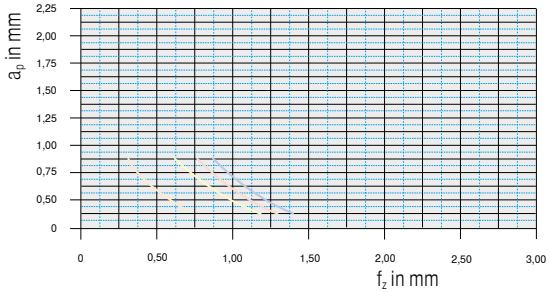
	axial	Angled
	Plunging	
DC mm	$X_{max.}$ mm	$\alpha_{R\,max.}$ °
16	0,5	5,9°
20		3,2°
25		2°
32		1,3°

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XPLX 06



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XPLX 060305SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XPLX 060305ER-M40**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XPLX 060305ER-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XPLX 060305SR-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HFC-09

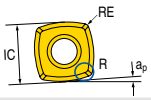
Cutting data recommendations/Technology data

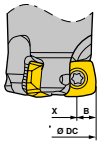
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–2,5	1	60–280	0,2–2,5	1
Stainless steel				60–270	0,2–2,5	1	60–270	0,2–2,5	1
Cast iron				130–360	0,2–2,5	1	130–360	0,2–2,5	1
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–2,5	1	25–75	0,2–2,5	1
hardened materials									

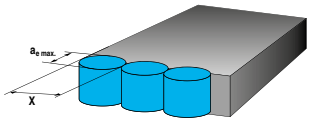
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

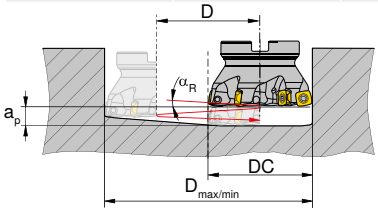
Programmed radius R = 2 mm

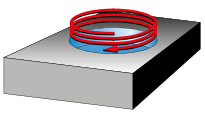


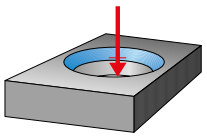


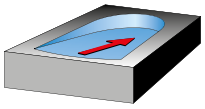


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
9	0,8	1	25–66	DC–(2 x B)	5,9	7,5	0,10	0,08	0,15	<0,7 x DC









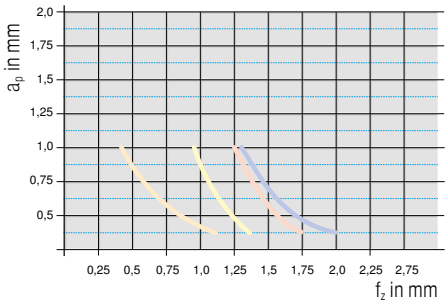
	circular				axial	Angled
	Helical plunging (helical plunging into solid material)				Plunging	
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °	**DC mm**	$X_{max.}$ mm	$\alpha_{R\,max.}$ °
25	48	35	3,1°	**25**		3,6°
32	62	49	1,7°	**32**		2,0°
35	68	55	1,4°	**35**		1,6°
40	78	65	1,0°	**40**		1,2°
42	82	69	0,9°	**42**	0,75	1,1°
50	98	85	0,8°	**50**		0,9°
52	102	89	0,7°	**52**		0,8°
63	124	111	0,7°	**63**		0,8°
66	130	117	0,6°	**66**		0,7°

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XDLX 09



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDLX09T308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XDLX09T308SR-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XDLX09T308SR-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDLX09T308ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HFC-12

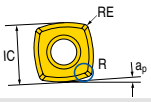
Cutting data recommendations/Technology data

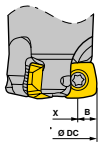
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–3,0	2	60–280	0,2–3,0	2
Stainless steel				60–270	0,2–3,0	2	60–270	0,2–3,0	2
Cast iron				130–360	0,2–3,0	2	130–360	0,2–3,0	2
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–3,0	2	25–75	0,2–3,0	2
hardened materials									

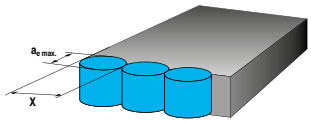
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

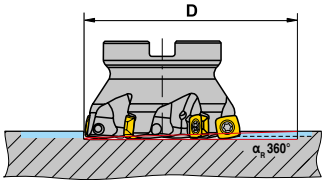
Programmed radius R = 3 mm

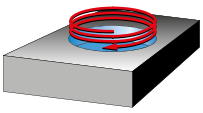


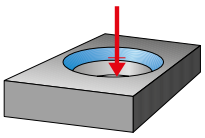


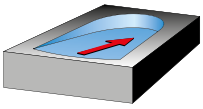


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
12	1,0	2	32–100	DC–(2 x B)	8,3	10	0,15	0,10	0,20	<0,7 x DC









	circular		
	Helical plunging (helical plunging into solid material)		
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °
32	62	44	6,1°
35	68	50	3,7°
40	78	60	2,5°
42	82	64	2,3°
50	98	80	1,3°
52	102	84	1,3°
63	124	106	0,9°
66	130	112	0,9°
80	158	140	1,1°
100	198	180	0,6°

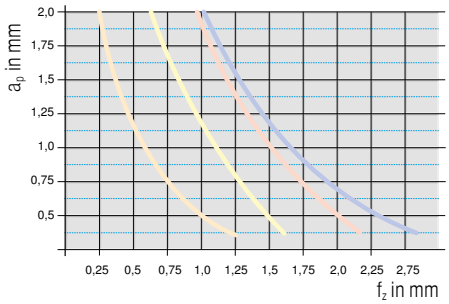
	axial	Angled
	Plunging	
DC mm	$X_{max.}$ mm	$\alpha_{R\,max.}$ °
32	1,15	7,2°
35		4,4°
40		2,9°
42		2,7°
50 + 52		1,5°
63 + 66		1,1°
80		1,3°
100		0,7°

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XOLX 12



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XOLX120410SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XOLX120410ER-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XOLX120410ER-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XOLX120410ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HFC-19

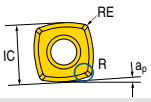
Cutting data recommendations/Technology data

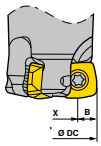
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–3,0	3,3	60–280	0,2–3,0	3,3
Stainless steel				60–270	0,2–3,0	3,3	60–270	0,2–3,0	3,3
Cast iron				130–360	0,2–3,0	3,3	130–360	0,2–3,0	3,3
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–3,0	3,3	25–75	0,2–3,0	3,3
hardened materials									

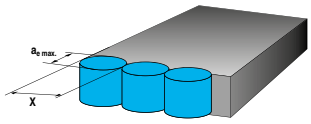
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

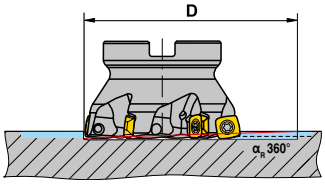
Programmed radius R = 5 mm

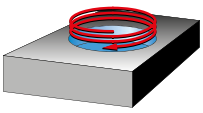


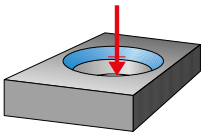


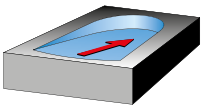


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
19,14	1,5	3,3	63–160	DC–(2 x B)	13,1	12	0,2	0,10	0,25	<0,65 x DC









	circular		
	Helical plunging (helical plunging into solid material)		
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °
63	97	123	2,5
80	131	157	1,4
100	171	197	1,0
125	221	247	0,7
160	291	317	0,5

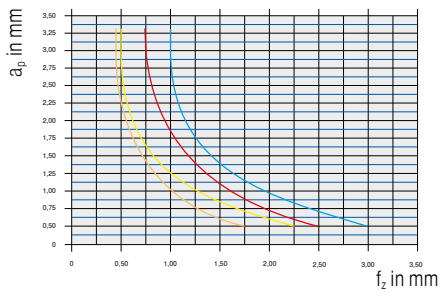
	axial	Angled	
	Plunging		
DC mm	$X_{max.}$ mm	$\alpha_{R\,max.}$ °	$a_{p\,max}$ mm
63		2,9	
80		1,8	
100	1,7	1,3	3,3
125		1,0	
160		0,7	

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



XOLX 19



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XOLX190615SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XOLX190615SR-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XOLX190615SR-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XOLX190615ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System DHFC

Cutting data recommendations/Technology data

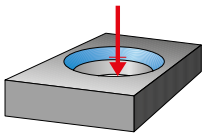
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	130–300	0,25–1,0	0,7	130–300	0,25–1,0	0,7	130–300	0,25–1,0	0,7
Stainless steel				80–210	0,25–1,0	0,6			
Cast iron				120–250	0,2–1,1	0,7	120–270	0,2–1,2	0,75
Non-ferrous metals									
Heat resistant alloys				30–90	0,15–0,75	0,6			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

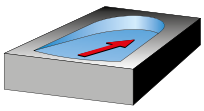
Machining strategy

Axial plunging into solid material



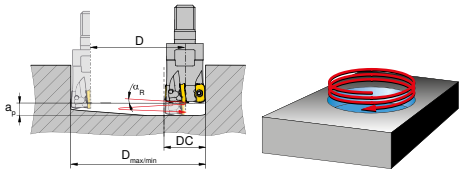
DC mm	X_{max} mm
16	0,35
20	0,40
25	0,45
32–35	0,50
40	0,55

Angled ramping



DC mm	α°	y mm
16	<2,5	7
20	<1,9	11
25	<1,5	16
32	<1,2	23
35	<1,0	26
42	<0,9	33

Circular Milling



DC mm	D_{min} mm	D_{max} mm
16	23	31
20	31	39
25	41	49
32	55	63
35	61	69
42	75	83

System MaxiMill 251

Cutting data recommendations/Technology data

for standard inserts

	F				
		05		08	
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm
Steel	50–350	0,08–0,35	2,5	0,08–0,35	4
Stainless steel	130–280	0,08–0,35	2,5	0,08–0,35	4
Cast iron	100–360			0,1–0,4	4
Non-ferrous metals	160–1500	0,05–0,4	2,5	0,05–0,4	4
Heat resistant alloys	25–75			0,08–0,35	4
hardened materials					

	M						
		10		12		16	
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm	f_z mm	a_p mm
Steel	50–350	0,08–0,4	5	0,08–0,4	6	0,08–0,4	8
Stainless steel	60–280	0,08–0,35	5	0,08–0,35	6	0,08–0,35	8
Cast iron	100–360	0,1–0,4	5	0,1–0,4	6	0,1–0,4	8
Non-ferrous metals	160–1500	0,05–0,4	5	0,05–0,4	6	0,05–0,4	8
Heat resistant alloys	25–75	0,08–0,38	5	0,08–0,38	6	0,08–0,38	8
hardened materials	40–60			0,05–0,35	6		

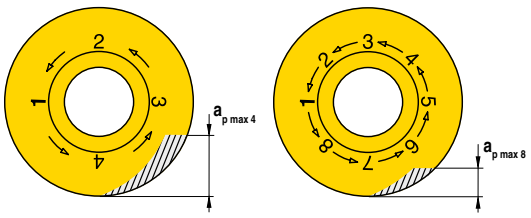
	R						
		20					
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm	f_z mm	a_p mm
Steel	50–350	0,1–0,4	10				
Stainless steel	60–280	0,08–0,35	10				
Cast iron	100–360	0,1–0,4	10				
Non-ferrous metals	160–1500	0,05–0,4	10				
Heat resistant alloys	25–75	0,08–0,38	10				
hardened materials							

Detailed information on cutting speed for each grade can be found on → page 138+139

Recommended cutting depth

Ø mm	4-position $a_{p\,max.}$ mm	4-position $a_{p\,max}$ theoretical mm	8-face $a_{p\,max.}$ mm
5	1,0	2,0	0,7
8	1,5	3,5	1,1
10	2,5	4,5	1,4
12	3,0	5,5	1,7
16	4,0	7,5	2,3
20	4,0	9,5	2,9

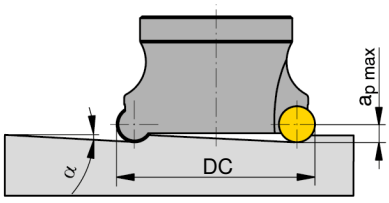
Average depth for the 4/8 index use of the insert



System MaxiMill 251

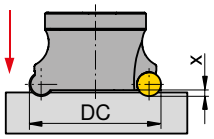
Technical data

Linear ramping



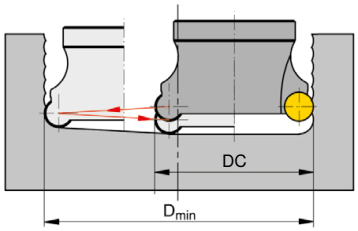
Ø DC mm	05 α °	08 α °	10 α °	12 α °	16 α °	20 α °
10	3,4					
12	16,0					
16	8,0	5,0				
20	5,5	20,0	1,3			
25	4,0	13,0	2,0	6,0		
32	3,0	8,0	3,0	4,0		
40			3,3	2,8		
42			3,1			
50			2,4	2,6	4,0	
52			2,2	2,3		
63				1,9	2,8	
66				1,6		
80				1,3	2,0	3,2
100				1,0	1,5	2,3
125						1,7

Plunging

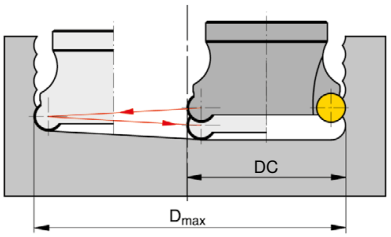


Ø DC mm	05 X max. mm	08 X max. mm	10 X max. mm	12 X max. mm	16 X max. mm	20 X max. mm
10	0,5					
12	1,3					
16	1,3	0,5				
20	1,3	2,7	0,2			
25	1,3	2,7	0,4	1,0		
32	1,3	2,7	0,8	1,1		
40			1,5	1,2		
42			1,5	1,5		
50			1,5	1,5	2,0	
52			1,5	1,5	2,0	
63				1,5	2,0	
66				1,5	2,0	
80				1,5	2,0	3,0
100				1,5	2,0	3,0
125						3,0

Circular milling into solid



$D_{min.}$ = smallest drilling diameter depending on the tool diameter



$D_{max.}$ = Maximum hole diameter Depending on the tool diameter

maximum possible hole diameter = 2 x DC – 1 mm

Ø DC mm	05 D_{min} mm	05 D_{max} mm	05 α_R °	08 D_{min} mm	08 D_{max} mm	08 α_R °	10 D_{min} mm	10 D_{max} mm	10 α_R °	12 D_{min} mm	12 D_{max} mm	12 α_R °	16 D_{min} mm	16 D_{max} mm	16 α_R °	20 D_{min} mm	20 D_{max} mm	20 α_R °
10	12	15	2,5															
12	16	19	2,1															
16	24	27	1,5	21	24	2,4												
20	32	35	1,2	27	32	1,9	26	30	1,3									
25	42	45	1,0	37	42	1,5	37	40	1,8	31	38	2,2						
32	56	59	0,7	51	56	1,2	50	54	1,5	46	52	1,7						
40							64	70	1,1	62	68	1,4						
42							68	74	1,1									
50							84	90	0,9	81	88	1,1	75	84	1,5			
52							88	94	0,9	86	92	1,0						
63										107	114	0,9	101	110	1,1			
66										113	120	0,8						
80										142	148	0,7	135	144	0,9	128	140	1,1
100										181	188	0,5	175	184	0,7	168	180	0,9
125																218	230	0,7

R100. system

Cutting data appoximate values

	v_c m/min	WTN 1205	WAN 2225	WAN 1240	WAX 1240	WUN 4210
Steel						
Non alloyed steel	**R**	150–250		100–250	100–300	
	F	200–400			150–350	
Alloyed tool steel Cast steel	**R**	150–250		100–200	100–250	
	F	200–350			150–300	
High alloyed tool steel	**R**	120–200		100–150	150–180	
	F	150–300			150–250	
Stainless steel						
	R		80–200			
	F	100–200	80–230			
Cast iron						
Grey Iron GG	**R**	150–200			160–220	
	F	200–350			160–220	
Cast iron with spheroidal graphite GGG	**R**	150–200			160–220	
	F	200–350			160–220	
Tempered cast iron	**R**	100–180			160–220	
	F	200–350			160–220	
Non-ferrous metals						
Aluminium	**R**					100–800
	F					100–800
Copper	**R**					100–400
	F					100–400
Graphite	**R**	200–800				200–800
	F	200–800				200–800
Plastics	**R**	200–800				200–800
	F	200–800				200–800
Heat resistant alloys						
Heat resistant alloys	**R**					
	F					
Titanium alloys	**R**		40–50			
	F		40–60			
hardened materials						
to 48 HRC	**R**	150–250			80–150	
	F	150–250				
to 55 HRC	**R**	100–180				
	F	100–180				
to 65 HRC	**R**	35–150				
	F	35–150				

R (Roughing)
F (Finishing)

15

System R 1000, 1002, 1007

Cutting data appoximate values

		f_z, a_p mm	WTN1205	WUN 4210	WAN2225	WAX1240	WAN1240
Steel							
	0501	f_z	0,1–0,3				
		a_p	0,1–0,3				
	07T1	f_z	0,1–0,3	0,1–0,2		0,1–0,3	
		a_p	0,1–0,5	0,1–0,2		0,1–0,7	
	0702	f_z	0,1–0,3			0,2–0,5	
		a_p	0,1–0,7			0,1–0,75	
	1003	f_z	0,1–0,3	0,15–0,3		0,2–0,7	0,2–0,9
		a_p	0,1–1,0	0,1–0,3		0,2–1,5	0,2–1,5
	12T3	f_z	0,1–0,3	0,15–0,3		0,2–0,8	0,25–1,0
		a_p	0,1–1,5	0,1–0,3		0,2–2,0	0,2–2,0
	1604	f_z	0,2–0,3			0,25–1,0	0,3–1,2
		a_p	0,2–1,5			0,2–3,0	0,25–3,0
	2006	f_z	0,25–0,4				
		a_p	0,2–2,0				
Stainless steel							
	0501	f_z	0,1–0,15				
		a_p	0,1–0,15				
	07T1	f_z	0,1–0,2	0,1–0,2			
		a_p	0,1–0,2	0,1–0,2			
	0702	f_z	0,1–0,2	0,1–0,2			
		a_p	0,1–0,2	0,1–0,2			
	1003	f_z	0,15–0,3	0,15–0,3	0,15–0,6		
		a_p	0,1–0,3	0,1–0,3	0,4–1,0		
	12T3	f_z	0,15–0,3	0,15–0,3	0,2–0,8		
		a_p	0,1–0,3	0,1–0,3	0,5–2,0		
	1604	f_z	0,15–0,3	0,15–0,3	0,3–1,0		
		a_p	0,1–0,3	0,1–0,3	0,6–3,0		
	2006	f_z		0,15–0,3			
		a_p		0,1–0,4			
Cast iron							
	0501	f_z	0,1–0,2				
		a_p	0,1–03				
	07T1	f_z	0,1–0,3	0,1–0,3		0,1–0,3	
		a_p	0,1–0,5	0,1–0,5		0,1–0,5	
	0702	f_z	0,1–0,3	0,1–0,3		0,1–0,3	
		a_p	0,1–0,7	0,1–1,0		0,1–0,7	
	1003	f_z	0,15–0,3	0,15–0,3		0,1–0,3	0,1–0,3
		a_p	0,1–1,0	0,1–1,5		0,1–1,0	0,1–1,0
	12T3	f_z	0,15–0,4	0,15–0,4		0,1–0,4	0,1–0,4
		a_p	0,1–1,5	0,1–2,0		0,1–1,5	0,1–1,5
	1604	f_z	0,2–0,5	0,2–0,5		0,2–0,5	0,2–0,5
		a_p	0,2–3,0	0,2–3,0		0,2–3,0	0,2–2,0
	2006	f_z	0,25–0,6	0,25–0,6			
		a_p	0,2–4,0	0,2–4,0			

System R 1000, 1002, 1007

Cutting data appoximate values

		f_z, a_p mm	WTN1205	WUN4210	WAN2225	WAX1240	WAN1240
Non-ferrous metals							
	0501	f_z	0,1–0,2				
		a_p	0,1–0,3				
	07T1	f_z	0,1–0,3				
		a_p	0,1–0,7				
	0702	f_z	0,1–0,3				
		a_p	0,1–1,0				
	1003	f_z	0,1–0,3				
		a_p	0,1–1,5				
	12T3	f_z	0,1–0,4				
		a_p	0,1–2,0				
	1604	f_z	0,2–0,5				
		a_p	0,2–4,0				
	2006	f_z	0,25–0,6				
		a_p	0,2–5,0				
Heat resistant alloys							
	0501	f_z					
		a_p					
	07T1	f_z					
		a_p					
	0702	f_z					
		a_p					
	1003	f_z			0,1–0,4		
		a_p			0,2–1,0		
	12T3	f_z			0,15–0,5		
		a_p			0,3–1,5		
	1604	f_z			0,15–0,5		
		a_p			0,3–2,0		
	2006	f_z					
		a_p					
hardened materials							
	0501	f_z	0,1–0,15				
		a_p	0,1–0,2				
	07T1	f_z	0,1–0,15			0,1–0,2	
		a_p	0,1–0,2			0,1–0,3	
	0702	f_z	0,1–0,2			0,1–0,2	
		a_p	0,1–0,3			0,1–0,3	
	1003	f_z	0,1–0,2			0,1–0,2	
		a_p	0,1–0,5			0,1–0,5	
	12T3	f_z	0,1–0,25			0,1–0,25	
		a_p	0,1–0,7			0,1–0,7	
	1604	f_z	0,15–0,3			0,15–0,3	
		a_p	0,2–1,0			0,2–1,0	
	2006	f_z	0,2–0,4				
		a_p	0,2–1,0				

WTN 1205

Up to 48 HRC: a_p-range as indicated in the table
Up to 55 HRC: maximum value a_p x 0,7
Up to 65 HRC: maximum value a_p x 0,5

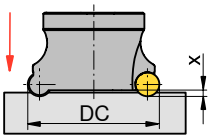
15

System R 1000, 1002, 1007

Technical data

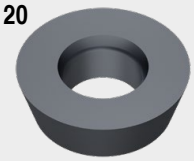
Machining strategy

Plunging

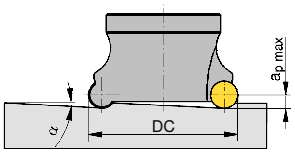


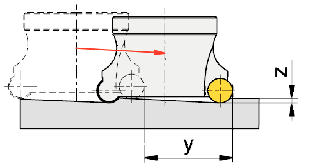
reduce f_z according to table by 30 %

→ v_c Page 178+179

	05	07	10	12	16	20
						
Ø DC mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm
8–160	1,0	1,2	2,5	3,0	4,0	5,0

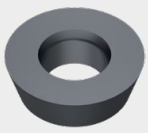
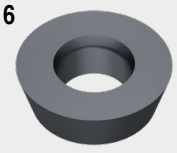
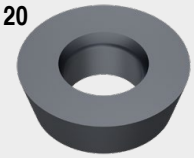
Linear ramping





y = minimum cutter movement
z = minimum cutter movement
a_p / f_z application table

→ v_c Page 178+179

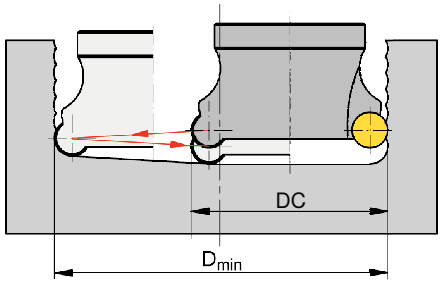
	05			07			10			12			16			20		
																		
Ø DC mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm
8	26,5	2	< 1,0															
10																		
12	14,0	4	< 1,0															
14	9,5	6	< 1,0															
15	8,1	7	< 1,0	26,5	2	< 1,2												
16	7,1	8	< 1,0	14,0	4	< 1,2												
18	5,7	10	< 1,0	11,3	6	< 1,2												
20	4,7	12	< 1,0	8,5	8	< 1,2												
22																		
24																		
25				5,3	13	< 1,2	19,7	7	< 2,5									
30				3,8	18	< 1,2	11,7	12	< 2,5									
32																		
35				3,0	23	< 1,2	8,4	17	< 2,5	13,0	13	< 3,0	38,7	5	< 4,0			
40																		
42				2,3	30	< 1,2	5,9	24	< 2,5	8,5	20	< 3,0						
50																22,6	12	< 5,0
52							4,2	34	< 2,5	5,7	30	< 3,0	10,3	22	< 4,0			
66										3,9	44	< 3,0	6,4	36	< 4,0	10,1	28	< 5,0
80										3,0	58	< 3,0	4,6	50	< 4,0	6,8	42	< 5,0
100													3,3	70	< 4,0	4,6	62	< 5,0
125													2,4	95	< 4,0	3,3	87	< 5,0
160													1,8	130	< 4,0	2,3	122	< 5,0

System R 1000, 1002, 1007

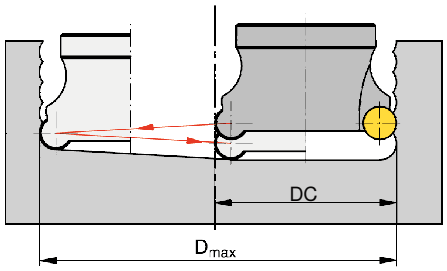
Technical data

Machining strategy

Circular ramping



D_{min} = smallest drilling diameter depending on the tool diameter



D_{max} = largest drilling diameter depending on the tool diameter

a_p / f_z according to table

→ v_c Page 178+179

	05		07		10		12		16		20	
Ø DC mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm
8	10	16										
10	12	20										
12	16	24	14	24								
14	20	28	16	28								
15	22	30	17	30								
16	24	30	20	32								
18	28	36	24	36	20	36						
20	32	40	28	40	22	40						
22							24	44				
24							26	48				
25			38	50	32	50						
30			48	60	42	60						
32									34	64		
35			58	80	72	70	48	70	40	70		
40											42	80
42			72	84	66	84	62	84				
50											62	100
52					86	104	82	104	74	104		
66							110	132	102	132	94	132
80							138	160	130	160	122	160
100									170	200	162	200
125									220	250	212	250
160									290	320	282	320

System MaxiMill 252

Cutting data recommendations/Technology data

for standard inserts

	M						
		10		12			
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm	f_z mm	a_p mm
Steel	60–240	0,08–0,35	2,5	0,08–0,35	3		
Stainless steel	60–280	0,05–0,35	2,5	0,05–0,35	3		
Cast iron							
Non-ferrous metals							
Heat resistant alloys	25–75	0,08–0,35	2,5	0,08–0,35	3		
hardened materials							

Detailed information on cutting speed for each grade can be found on → page 138+139

MaxiMill 252 – recommended cutting depth

	4-position	
Ø mm	$a_{p\,max}$ mm	$a_{p\,max}$ theoretical mm
10	2,5	4,5
12	3,0	5,5

Cutting data standard values for copy milling cutter K200.

● 1st choice ○ suitable

	R	F	R	F	R	F	R	F	suitable coolant types		
	CTPK226		CTPP211		CTPK231		CTCN211				
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	Emulsion	Com-pressed air	MMS
1.1		280–300	180–220	220–300	160–200				○	●	●
1.2		280–300	180–220	220–300	160–200				○		●
1.3		280–300	180–220	220–300	160–200				○		●
1.4		280–300	180–220	220–300	160–200				○		●
1.5		220–240	180–220	220–240	160–200				○	●	●
1.6		220–240	180–220	220–240	160–200				○		●
1.7		220–240	180–220	220–240	160–200				○	●	●
1.8		220–240	180–220	220–240	160–200				○		●
1.9		220–240	180–220	220–240	160–200				○		●
1.10		280–300	140–220	200–300	140–180				○	●	●
1.11		280–300	140–220	200–300	140–180				○		●
1.12		280–300	140–220	200–300	140–180				○		●
1.13		280–300	140–220	200–300	140–180				○		●
1.14		280–300	140–220	200–300	140–180				○		●
1.15		280–320	180–220	240–320	160–200				○	●	●
1.16		280–320	180–220	240–320	160–200				○	●	●
2.1		220–220	140–180	200–240	120–180				●		
2.2		220–220	140–180	200–240	120–180				●		
2.3		220–220	140–180	200–240	120–180				●		
2.4		220–220	140–180	200–240	120–180				●	○	
2.5		220–220	140–180	200–240	120–160				●		
2.6		180–200	140–160	180–200	120–160				●	○	
2.7		180–200	140–160	180–200	120–160				●		
3.1		280–300	160–200	200–300	120–200					●	○
3.2		280–300	160–200	200–300	120–200					●	○
3.3		280–300	160–200	200–300	120–200					●	○
3.4		300–350	180–220	240–350	180–200					●	○
3.5		300–350	180–220	240–350	180–200					●	○
3.6		300–350	180–220	240–350	180–200					●	○
3.7		300–350	180–220	240–350	180–200					●	○
3.8		240–260	160–200	220–260	160–200					●	○
4.1			240–280	300–600	300–600				●		
4.2			240–280	300–600	300–600				●		
4.3			240–280	300–600	300–600				●		
4.4			240–280	300–600	300–600				●		
4.5									●		
4.6			240–280	300–600	240–280				●		
4.7			240–280	300–600	240–280				●		
4.8			240–280	300–600	240–280				●		
4.9			240–280	300–600	240–280				●		
4.10			240–280	280–320	240–280				●		
4.11			240–280	280–320	240–280				●		
4.12			240–280	280–320	240–280				●		
4.13			500–600	500–600			400–600	600–800		●	
4.14			300–400	300–400						●	
4.15			300–400	300–400				250–300		●	
4.16			300–400	300–400				300–400	●		
4.17							400–600	600–800		●	
4.18							100–140	160–180	●		
4.19							100–140	100–140	●		
5.1					80–120				●		
5.2				80–120	80–120				●		
5.3				80–120	80–120				●		
5.4				80–120	80–120				●		
5.5				80–120	80–120				●		
5.6				80–120	80–120				●		
5.7				80–120	80–120				●		
5.8				80–120	80–120				●		
5.9				80–120	80–120				●		
5.10				60–80	60–80				●	○	
5.11				60–80	80–100				●	○	
6.1		240–260		60–80	140–160						
6.2		240–260	140–200	220–300	140–160					●	○
6.3		200–220	120–160	180–300	80–100					●	○
6.4		120–140	100–120	120–200						●	○
6.5											

Cutting data standard values for copy milling cutter K200.

● 1st choice ○ suitable

	R	F	Roughing (R)		Finishing (F)		only for -MR3 Roughing (R)		suitable coolant types		
	CTPP216		Ø 6–16	Ø 20–32	Ø 6–16	Ø 20–32	Ø 6–16	Ø 20–32	Emulsion	Com-pressed air	MMS
Index	v_c m/min	v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.1	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○	●	●
1.2	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○		●
1.3	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○		●
1.4	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○		●
1.5	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○	●	●
1.6	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○		●
1.7	260-340	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○	●	●
1.8	260-340	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○		●
1.9	260-340	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○		●
1.10	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,20	○	●	●
1.11	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.12	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.13	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.14	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.15	250-360	240-320	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○	●	●
1.16	250-360	240-320	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○	●	●
2.1	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.2	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.3	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.4	220-300	220-240	0,08-0,4	0,25-0,45	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●	○	
2.5	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.6	220-250	220-240	0,08-0,4	0,25-0,45	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,5	●	○	
2.7	220-250	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,5	●		
3.1	240-350	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5		●	○
3.2	240-350	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5		●	○
3.3	240-350	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5		●	○
3.4	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.5	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.6	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.7	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.8	280-340	220-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
4.1		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.2		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.3		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.4		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.5		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.6		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.7		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.8		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.9		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.10		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.11		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.12		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.13		600-800	0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.14		300-350	0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.15			0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.16			0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4			●		
4.17			0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.18							0,20-0,4	0,4-0,8	●		
4.19							0,20-0,4	0,4-0,8	●		
5.1		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.2		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.3		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.4		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.5		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.6		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.7		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,25-0,5	0,6-1,0	●		
5.8		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,25-0,5	0,6-1,0	●		
5.9		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,25-0,5	0,6-1,0	●		
5.10		60-80	0,08-0,35	0,4-0,5	0,08-0,3	0,25-0,4	0,25-0,5	0,6-1,0	●	○	
5.11		60-80	0,08-0,35	0,4-0,5	0,08-0,3	0,25-0,4	0,25-0,5	0,6-1,0	●	○	
6.1	240-260	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,25-0,5	0,6-1,0			
6.2	240-260	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,25-0,5	0,6-1,0		●	○
6.3	220-240	160-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5				●	○
6.4	120-140	100-140	0,25-0,35	0,4-0,5	0,08-0,2	0,18-0,35				●	○
6.5											

Maximum axial depths of cut a_p for copy milling cutter K200.



Ball nose insert									
Insert Ø in mm		6	8	10	12	16	20	25	32
		$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{pmax.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$
ROHX-FM3	**R**	0,8	1,0	1,5	2,0	3,0	4,0	5,0	6,0
	F	0,4	0,8	1,0	1,2	1,5	1,5	2,0	2,0
ROHX-FM4	**R**	0,8	1,0	2,0	3,0	4,0	5,0	6,0	8,0
	F	0,4	0,8	1,0	1,2	1,5	1,5	2,0	2,0
ROHX-FM6	**R**	0,8	1,0	1,5	2,0	3,0	4,0	5,0	6,0
	F	0,4	0,8	1,0	1,2	1,5	1,5	2,0	2,0
ROGX-MR4	**R***				4,0	6,0	8,0	12,0	16,0
	F				2,0	3,0	4,0	5,0	6,0
ROHX-MR5	**R**		1,5	2,0					
	F		0,8	1,0					

*a_p with full interference 25 % of Ø DC maximum!



Torus inserts									
Insert Ø in mm		6	8	10	12	16	20	25	32
		$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{pmax.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$
XOHX-FM5	**R**		2,0	3,0	3,0	4,0	5,0	6,0	8,0
	F		0,6	2,0	2,4	3,2	4,0	5,0	6,4
XOHX-MR6	**R**		2,0	3,0	3,0	4,0	5,0	6,0	8,0
	F		0,6	2,0	2,4	3,2	4,0	5,0	6,4
XOHX-FM1	**R**			1,5	2,0	3,0	4,0		
	F			0,8	0,8	1,0	1,0		
XOHX-FM2	**R**		1,0	1,5	2,0	3,0	4,0	5,0	
	F		0,5	0,7	0,8	1,0	1,0	1,5	
XOHX-MR2	**R**	0,8	1,0	1,5	2,0	3,0	4,0	5,0	
	F	0,5	0,5	0,7	0,8	1,0	1,0	1,5	
XOGX-MF4	**R**			1,5	2,0	3,0	4,0		
	F			0,7	0,8	1,0	1,0		
XOHX-MR3	**R**			0,5	0,6	0,8	1,0		
	F								

Ranges of application of geometry

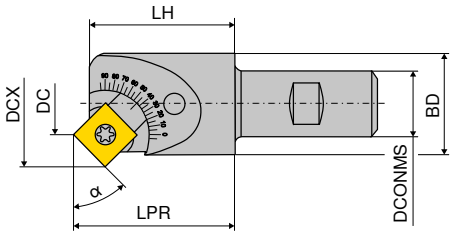
Inserts	F	M	R	Main Application
XOHX-FM1	●	●		Steel, steel casting, heat resistant steel, hardened steel to 63 HRC
XOHX-FM2	●	●		Steel, steel casting, heat resistant steel, hardened steel to 60 HRC
ROHX-FM3	●	●		Steel, steel casting, heat resistant steel
ROHX-FM4	●	●		Steel, steel casting, heat resistant steel, hardened steel to 60 HRC
XOHX-FM5	●	●		Steel, steel casting, heat resistant steel, hardened steel to 60 HRC
ROHX-FM6	●	●	●	Non ferrous metals, plastics, graphite
XOHX-MR2		●	●	long-chipping ferrous metals
XOHX-MR3		●	●	Steel, steel casting, heat resistant steel
ROGX-MR4		●	●	Steel, steel casting, heat resistant steel
XOGX-MF4	●	●		Steel, steel casting, heat resistant steel
ROHX-MR5		●	●	long-chipping ferrous metals
XOHX-MR6		●	●	long-chipping ferrous metals

System 4500-09

Cutting data recommendations/Technology data

for standard inserts

Material	09 m/min	f_z mm
Steel	120–250	0,05–0,30
Stainless steel	110–220	0,08–0,30
Cast iron	120–240	0,10–0,35
Non-ferrous metals	200–280	0,10–0,35
Heat resistant alloys		
hardened materials		



Machining strategy

Cutting angle α	$D_{min.}$ mm	$D_{max.}$ mm
0°	3,0	20,30
5°	3,8	20,90
10°	4,9	21,60
15°	5,8	22,10
20°	6,8	22,60
25°	7,9	23,00
30°	8,9	23,50
35°	10,0	23,60
40°	11,0	23,85
45°	12,3	23,90
50°	13,3	23,85
55°	14,3	23,80
60°	15,5	23,60
65°	16,4	23,40
70°	17,4	23,10
75°	18,4	22,60
80°	19,3	22,20
85°	20,0	21,50
90°	20,8	20,80

Detailed information on cutting speed for each grade can be found on → page 138+139

System 4500-12

Cutting data recommendations/Technology data

for standard inserts

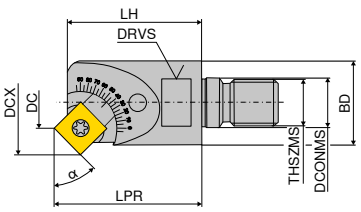
Material	12 m/min	f_z mm
Steel	120–250	0,05–0,25
Stainless steel	110–220	0,08–0,20
Cast iron	120–240	0,10–0,25
Non-ferrous metals	200–280	0,10–0,25
Heat resistant alloys		
hardened materials		

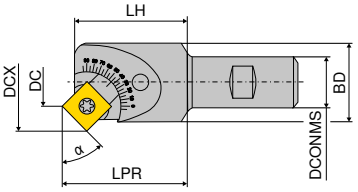
Machining strategy

Cutting angle α	$D_{min.}$ mm	$D_{max.}$ mm
0°	7,1	30,50
5°	7,8	31,40
10°	9,4	32,40
15°	10,7	33,20
20°	12,0	33,80
25°	13,4	34,40
30°	14,9	34,80
35°	16,5	35,20
40°	17,9	35,40
45°	19,3	35,45
50°	20,8	35,40
55°	22,3	35,20
60°	23,6	34,90
65°	25,0	34,60
70°	26,5	34,00
75°	27,7	33,40
80°	28,8	32,70
85°	29,9	31,90
90°	31,0	31,00

Machining strategy

Cutting angle α	$D_{min.}$ mm	$D_{max.}$ mm
0°	3,7	27,30
5°	4,7	28,20
10°	6,0	29,00
15°	7,3	29,80
20°	8,8	30,50
25°	10,0	31,00
30°	11,5	31,50
35°	13,1	31,90
40°	14,7	32,15
45°	16,0	32,20
50°	17,5	32,15
55°	19,0	32,00
60°	20,4	31,80
65°	21,8	31,30
70°	23,0	30,90
75°	24,4	30,20
80°	25,7	29,50
85°	26,7	28,70
90°	27,8	27,80





Detailed information on cutting speed for each grade can be found on → page 138+139

Cutting data for side and face milling cutters FM

Material	v_c m/min		f_z mm/z	
	CWN 35 **ISO (P35)**	CWK 12 **ISO (K10)**	FM-N	FM-KXF
St 37 / C 15	90–180		0,05–0,08	0,07–0,2
St 50 / C 50	80–150		0,04–0,08	0,07–0,2
St 60–70 / C 60	70–140		0,04–0,08	0,07–0,18
16 Mn Cr 5	50–120		0,04–0,09	0,07–0,2
42 Cr Mo4 / 50 Cr V 4	40–120		0,04–0,09	0,08–0,25
Tool steels and HSS	40–90		0,04–0,08	0,07–0,18
Corrosion resistant X-CrNi steel	30–80		0,04–0,08	0,07–0,15
Ferritic, austenitic steels	10–40		0,03–0,09	0,07–0,15
GG-10		60–180	0,04–0,1	
GG-30		60–150	0,04–0,1	
Malleable iron GT		40–100	0,04–0,11	
Aluminium		200–250	0,04–0,12	
G Al Si		200–250	0,06–0,1	
brass		50–250	0,05–0,08	
Copper Cu-E		120–250	0,04–0,08	
Red bronze		120–250	0,05–0,09	
bronze		100–250	0,05–0,1	
hard rubber		200–250	0,03–0,15	
Novotex, Pertinax		50–250	0,03–0,1	
Bakelite		50–250	0,03–0,1	

Cutting data for side and face milling cutters TX

	Material			HB	v_c m/min	h_m mm
P	Unalloyed steel	1.0711 9 S 20 1.0037 ST 37 1.0050 ST 50		125–300	160–240	0,1
	low-alloy steel	1.0070 ST 70 1.7131 16 MnCr 5 1.7218 25 CrMo 4		180–350	70–150	0,08
	High-alloy steel	1.2842 90 MnCr V 8 1.7225 42 CrMo4 V 1.2344 X 40 CrMoV		200–350	50–70	0,05
	Stainless steel	1.4002 X 6 CrA 13 1.4510 X 6 CrTi 17 1.4104 X 12 CrMoS 17		200–325	80–120	0,08
M	Stainless steel	1.4057 20 CrNi 17 2 1.4301 X 5 CrNi 18 10 1.4571 X 6 CrNiMoTi 17 12 2		180–330	120–130	0,08
K	Grey cast iron	0.6020 GG 20 0.6040 GG 40		180–260	90–100	0,1
	Cast iron with spheroidal graphite	0.7040 GGG 40 0.7070 GGG 70		160–250	60–100	0,08
N	Wrought Aluminium Alloys	non hardenable	Al Mn Al Mg Al Mg Mn	60	500–700	0,12
		hardenable	Al Mg Si Al Cu Mg Al Cu Si Mn	100	200–500	0,12
	Cast Aluminium Alloys	non hardenable < 12 % Si hardenable < 12 % Si non hardenable > 12 % Si		80–130	80–220	0,1
	Copper and copper alloys	non hardenable	Cu Ag Cu As	90–100	200–500	0,12
S	Heat resistant alloys	1.4962 X 12 CrNiWTi 16 13 1.4923 X 22 CrMoV 12 1		200–320	80–140	0,05
	Titanium alloys	3.7024 Ti 99,5 3.7154 TiAl6Zr5		120–310	80–120	0,06

Average Chip Thickness

h_m in mm

$$h_m = f_z \sqrt{\frac{a_e}{DC}}$$

Feed per tooth

f_z in mm

$$f_z = h_m \sqrt{\frac{DC}{a_e}}$$

Feed rate

v_f in mm/min

$$v_f = f_z \times z \times n$$

DC = Ø of the disc cutters

ZNF = Number of teeth of the cutter

15

System FM

Technical data

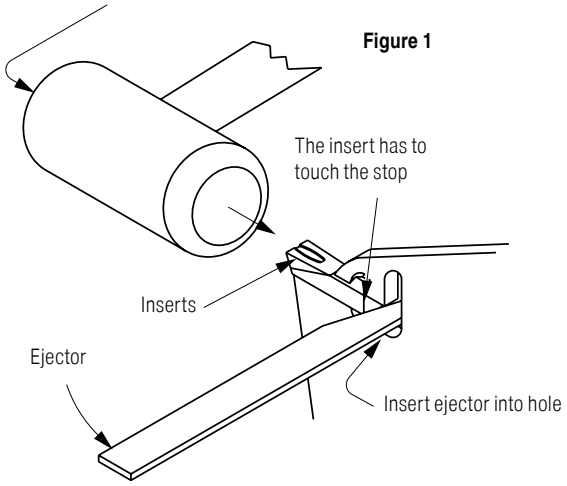
Machining strategy

Advantages:

- Self-clamping insert with double prismatic support and precise location.
- Clamping pressure increases as a function of cutting pressure (lever principle).
- No additional clamping elements like claws, screws or clamping wedges in the tool.
- The special shape of the chip groove crimps the chips, so they become smaller than the milled groove, which allows continuous chip flow.
- Every cutting insert cuts the entire width of cut, therefore the feed rate can be doubled per tool revolution compared to cross-pitched cutters (rough and finishing cutter).
- Changing the insert takes only 15 seconds per cutting edge and can be carried out in the machine without dismantling the side and face miling cutter. The insert is removed from the prism using the ejector (included in the delivery) (picture 1).
- Side and face miling cutters of the FM system can be used for both climb and conventional miling.

Move inserts to the stop using a plastic hammer

Figure 1



Remove insert with lever movement

Figure 2

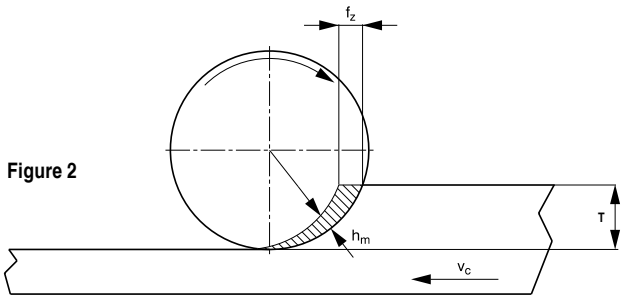
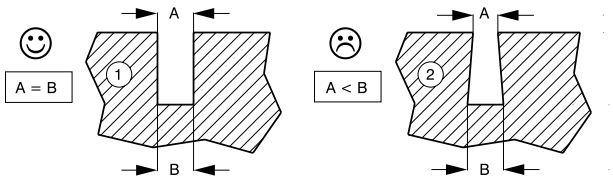


Figure 3



Information on application:

When the side and face milling cutter cuts into the workpiece a 'comma' chip is produced. The depth of cut „a_e" is important with regard to the feed rate. The average chip thickness is indicated by the parameter „h_m", which is always smaller than the feed per tooth „f_z" (see picture 2).

Make sure the chips are not too thin, as they would cause early wear of the cutting edge.

Guide values for the feed rate„f_z":

1) The feed values„f_z" in the cutting data table apply for 50–100 % of the maximum cutting depth „a_e".
2) With „a_e" < 50 % and > 30 % the feed rate should be increased by approx. 30–40 %.
3) With „a_e" < 30 % the feed rate should be increased by approx. 50 %.

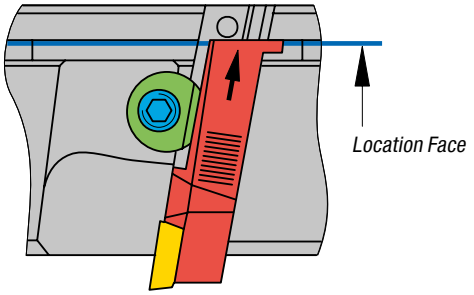
Side and face milling cutters are preferably used for climb milling (see picture 2). When climb milling, the cutting edge first cuts the largest section, therefore less friction wear is caused than in conventional milling (cutting edge goes into workpiece first).
Another advantage of climb milling is that the workpiece is pressed onto the support face - lifting of the workpiece is not possible..

Specially when slot milling make sure that the slot which is being produced does not close during machining, because otherwise the inserts are pulled out of their seat and the tool is destroyed (see picture 3).

For safety reasons the maximum cutting speed of 250 m/min. must not be exceeded.

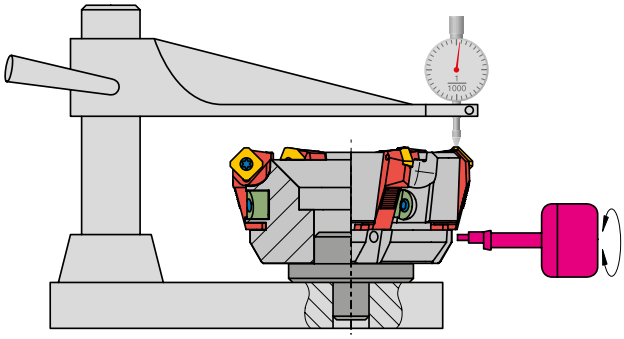
System MaxiMill 260

Setting of axial run-out for roughing



For assembly simply press cartridges onto the location face of the radial groove. The axial run-out amounts to 0.03 mm measured on the master insert.

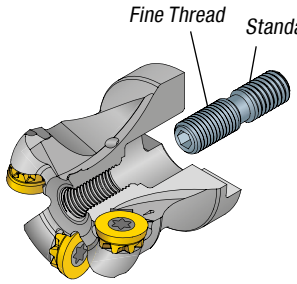
Setting of axial run-out with eccentric key and clock gauge or on optical presetting equipment



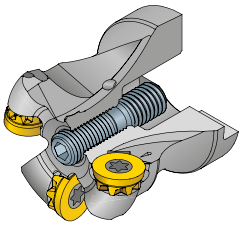
Exact setting of axial run-out up to 0.002 mm

- Clean the milling tools
- Mount cutter on appropriate setting equipment
- Loosen clamping wedge, push cassette to face and tighten wedge lightly
- Insert ecentric key into hole and turn until cassette is in desired position
- Keep ecentric key in contact with the cassette so that it remains in position.
  Tighten wedge (torque moment 10 Nm)
- The tool is now ready for use

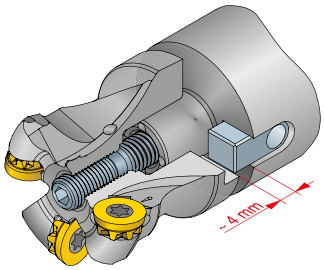
Easy and safe clamping – with the CERATIZIT power screw



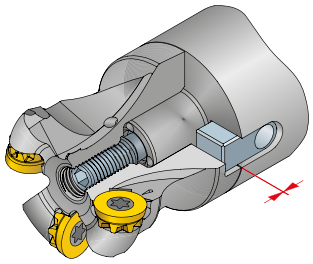
The fine-pitch part of the power screw is threaded into the milling cutter.



The power screw is turned carefully until the stop (as screw was delivered).

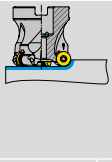
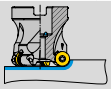
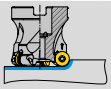


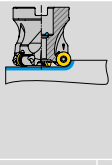
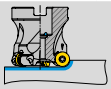
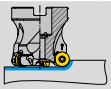
In order to guarantee an optimum connection of tool and shank, a gap of 4 mm is required between cutter body and adapter prior to final clamping.
Using standardised adpaters this is automatically guaranteed.
If necessary, you can readjust by means of the power screw with 0.5 mm/rev.



Turn clamping screw to tighten

Torque moments for clamping screws for mounting the milling cutter to the shell mill adapter

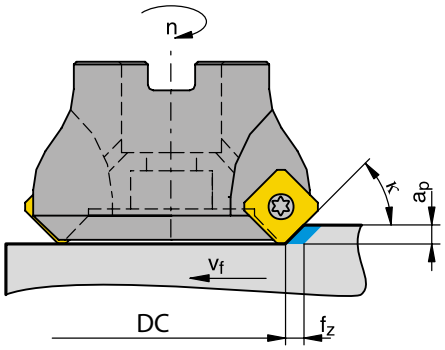
	 10 				 12 				 16 			
Cutter Ø mm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm
40			70 950 151	10			70 950 151	10				
42			70 950 151	10			70 950 151	10				
50	M10x25	80			M10x25	80					70 950 154	15
52					M10x25	80					70 950 154	15
63					M10x25	80			M10x25	80		
66					M10x25	80			M10x25	80		

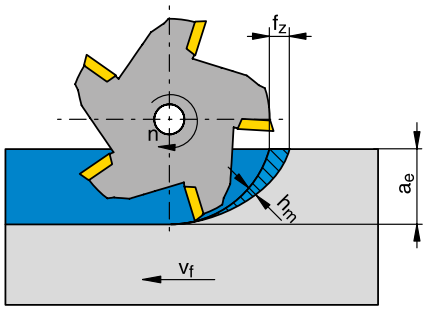
	 12 				 16 				 20 			
Cutter Ø mm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm
80	M12x30	140			M12x30	140			M12x30	140		
100	M16x35	180			M16x35	180			M16x35	180		
125					M16x35	180			M16x35	180		

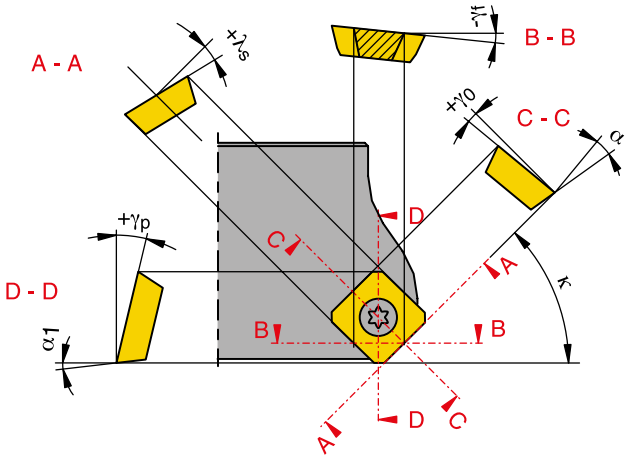
Abbreviations & dimensions

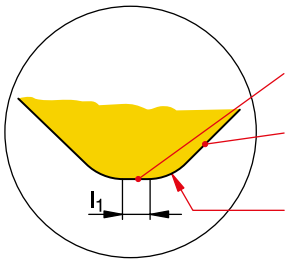
a_e	cutting width	mm
a_p	Cutting depth	mm
DC	Tool diameter	mm
D_w	Workpiece diameter	mm
f_z	Feed per tooth	mm
h_m	Average Chip Thickness	mm
ZNP	Number of teeth	
k_c	Specific cutting force	N/mm²
$k_{c1.1}$	Specific cutting force for 1 mm² chip area	N/mm²
BS	Length of wiper land	mm
m_c	Increase of specific cutting force	
n	rpm	rpm
Q	Chip volume	cm³/min
v_c	Cutting speed	m/min
v_f	Feed rate	mm/min.
ZNF	Number of Effective Teeth	

γ_0	Effective cutting angle	degree
γ_f	Side clearance angle	degree
γ_p	Axial cutting angle	degree
κ	Cutting edge angle	degree
λ_s	Angle of inclination	degree
α	Clearance angle	degree
α_1	Side clearance angle	degree









Wiper land

Main cutting edge

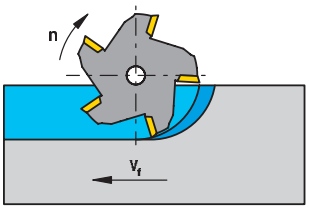
Corner radius

15

Engagement conditions

Recommended

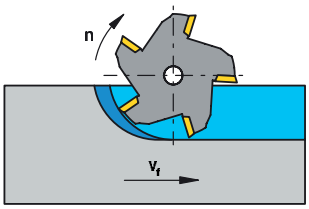
Climb milling



The feed direction of the workpiece is the same as the direction of rotation of the milling cutter in the cutting zone. The chips have maximum thickness at the beginning, chip thickness then decreases until it becomes zero at the end of the cut.

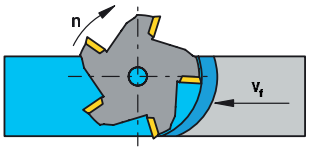
Unsuitable

Conventional milling

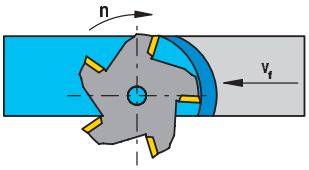


The feed direction of the workpiece is opposite to the direction of rotation of the milling cutter in the cutting zone. Chip thickness is zero at the beginning and increases until it reaches its maximum at the end of the cut.

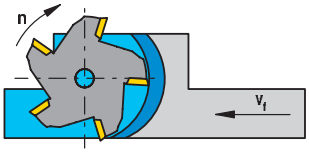
Cutter positioning



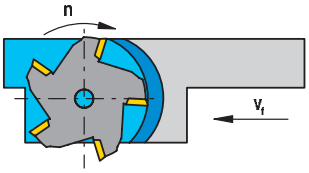
If possible the cutter should exit tangentially of the workpiece.



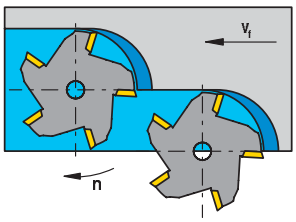
Workpiece situation



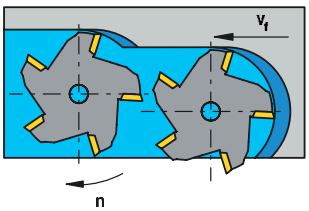
The workpiece should be clamped in such a way as to allow the cutter to emerge tangentially of the workpiece along the whole machining length.



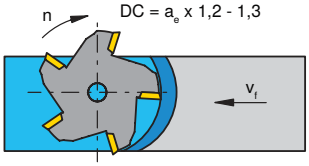
Overlapping



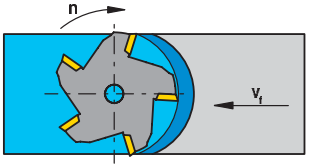
Either employ climb milling or ensure that the cutter comes out of the workpiece tangentially, as in the illustration on the left.



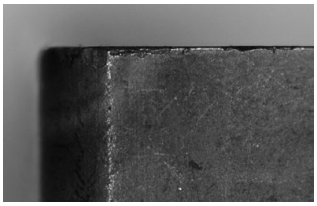
Cutter size

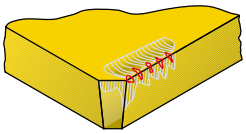


When face milling the diameter of the cutter should be 20–30 % larger than that of the workpiece.



Cutting demands when milling

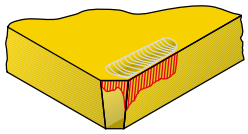




Edge chipping

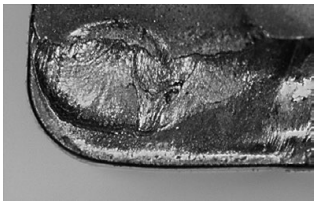
Cutting speed ↑
Feed per tooth ↓
Toughness of grade ↑
Cutting edge chamfer ↑

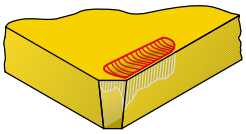




Wear on clearance face

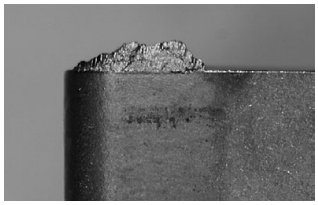
Cutting speed ↓
Feed per tooth ↑
Abrasion resistant grade ↑

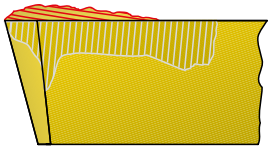




Cratering

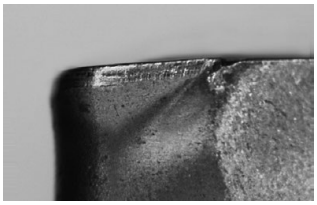
Cutting speed ↓
Feed per tooth ↓
Abrasion resistant grade ↑

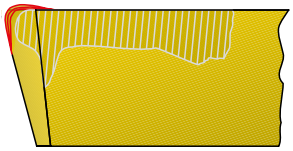




Built-up edge

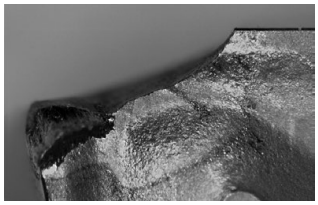
Cutting speed ↑
Feed per tooth ↑
Wear resistance ↑

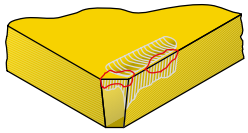




Cutting-edge deformation

Cutting speed ↓
Feed per tooth ↓
Abrasion resistant grade ↑





Cutting Edge Breakage

Cutting speed ↓
Toughness of grade ↑

15

ISO designation indexable milling inserts

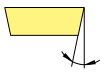
X	D	K	T	11	T3	08	S	R	-	F50
1	2	3	4	5	6	7	8	9		10

Z	N	H	W	12	05	PO	S	R	-	15	06	-	R
1	2	3	4	5	6	7	8	9		11	12		13

1 Insert shape

A	85°	
B	82°	
K	55°	
H	120°	
L	90°	
O	135°	
P	108°	
C	80°	
D	55°	
E	75°	
M	86°	
V	35°	
R		
S	90°	
T	60°	
W	80°	
X Z	Special version	

2 Clearance angle



	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special version

3 Tolerances

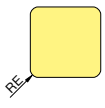


	IC ±mm	BS ±mm	S ±mm	IC = 6,35 / 9,52	IC = 12,7	IC = 15,8 / 19,05
A	0,025	0,005	0,025	●	●	●
C	0,025	0,013	0,025	●	●	●
E	0,025	0,025	0,025	●	●	●
F	0,013	0,005	0,025	●	●	●
G	0,025	0,025	0,13	●	●	●
H	0,013	0,013	0,025	●	●	●
J	0,05	0,005	0,025	●		
	0,08	0,005	0,025		●	
	0,10	0,005	0,025			●
K	0,05	0,013	0,025	●		
	0,08	0,013	0,02		●	
	0,10	0,013	0,02			●



	IC ±mm	BS ±mm	S ±mm	IC = 6,35 / 9,52	IC = 12,7	IC = 15,8 / 19,05
M	0,05	0,08	0,13	●		
	0,08	0,13	0,13		●	
	0,10	0,15	0,13			●
N	0,05	0,08	0,025	●		
	0,08	0,13	0,025		●	
	0,10	0,15	0,025			●
U	0,08	0,13	0,13	●		
	0,13	0,20	0,13		●	
	0,18	0,27	0,13			●

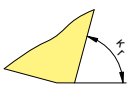
7 Wiper land / corner radius



Radius

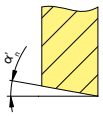
	RE in mm
M0*	
02	0,2
04	0,4
08	0,8
12	1,2

* Only with insert type "R"



1. Designation

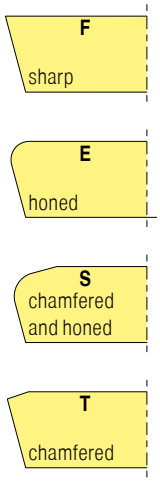
	K_r
A	45°
D	60°
E	75°
F	85°
P	90°
Z	Alternative



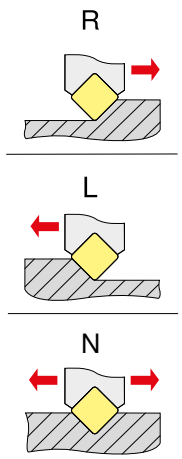
2. Designation

	α'_n
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z O	Alternative

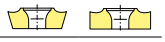
8 Cutting edge



9 Direction of cut



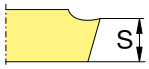
4 Characteristics

A	
F	
G	
M	
N	
Q	
R	
T	
U	
W	
X	Special version

5 Cutting length

IC mm	A	T	C/S	H	L	R	V	W	O	X	Z
4,90										07	
5,00						05					
5,56			05		08			03			
6,00											
6,35		11	06		10			04		06	
6,65	10										
6,80										11	
7,00											04
7,94			07								
8,00						08					
9,00					12						
9,30										15	
9,52	16	16	09		15			06	04		
9,57	15										
9,60										09	
10,00			10		11	10					12
12,00						12					
12,50										20	
12,70		12/22	12		20		22	08		12	
15,81			15		22			10			
16,00						16					
16,20				09							
16,74			16								
17,00			17								
17,18									06		
18,18									07		
19,05			19					13			
20,00						20					

6 Insert thickness



	S mm
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
09	9,52

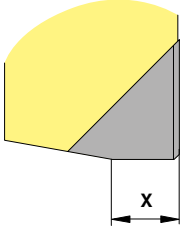
10 Chip groove

Chip breaker designation
F.. = fine
M.. = medium
R.. = roughing

Additional characteristics:
R = transition radius main/ secondary cutting edge
Q = Masterfinish

11 Manufacturer specification

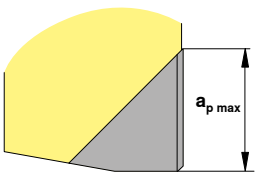
Length of the finishing cutting edge



00 = 0,0 mm
10 = 1,0 mm
12 = 1,2 mm
15 = 1,5 mm
30 = 3,0 mm
50 = 5,0 mm

12 Manufacturer specification

$a_{p\,max}$



02 = 2,0 mm
03 = 3,0 mm
04 = 4,0 mm
06 = 6,0 mm
07 = 7,0 mm
11 = 11,0 mm

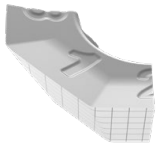
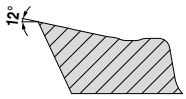
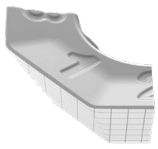
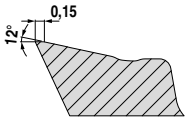
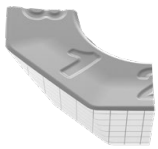
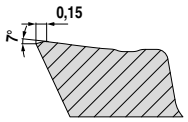
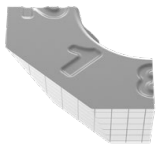
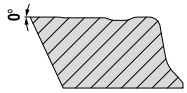
13 Manufacturer specification

F = Fine
M = Medium
R = Rough

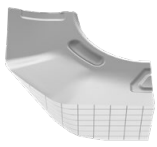
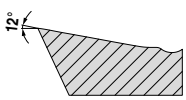
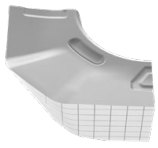
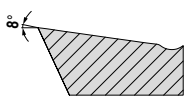
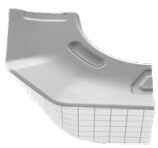
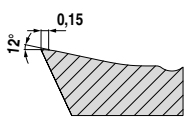
15

Chip Breakers Overview

MaxiMill 274 (OF..)

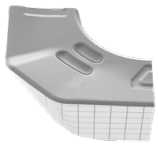
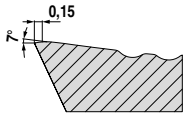
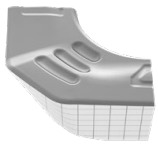
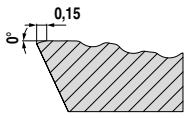
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F10 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ First choice for non-ferrous metals					0,05–0,40
	CTWN215 (CWK4615)	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials					0,10–0,25
	CTCP220/CTPP225 **(DCX1220**/DPX1225) CTPM225/**CTCM235** (DPX2225 /**DCX2235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM225/**CTCM235 CTPM240**/CTPM245 (DPX2225/**DCX2235 DPX2240**/ DPX2245)	CTPM240/**CTPM245** (DPX2240/**DPX2245)**		
	CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**			
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials					0,10–0,30
		CTCP230/CTPP235 **(DCX1230**/DPX1235) **CTPM240/CTPM225 (DPX2240/DPX2225)** **CTCK215 (DCX3215)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** **CTPM240 (DPX2240)** **CTCK215 (DCX3215)**		
EN ▲ Universal Geometry ▲ Low cutting force ▲ First choice for good flatness					0,10–0,25
	CTPM245 (DPX2245)	**CTPM245 (DPX2245)**			
	CTC5240 (HCF5240)	**CTC5240 (HCF5240)**			

MaxiMill 274 (SF..)

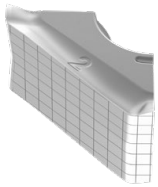
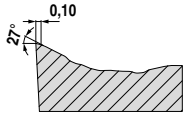
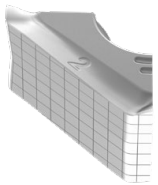
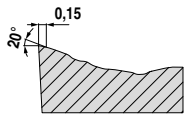
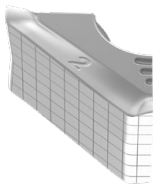
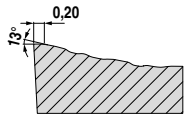
-F10 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ First choice for non-ferrous metals					0,05–0,40
	CTWN215 (CWK4615)	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		
-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys					0,10–0,25
	CTC5240 (HCF5240)	**CTC5240 (HCF5240)**			
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials					0,10–0,25
	CTCP220/CTPP225 **(DCX1220**/DPX1225) CTPM225/**CTCM235** (DPX2225 /**DCX2235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM225/**CTCM235 CTPM240**/CTPM245 (DPX2225/**DCX2235 DPX2240**/ DPX2245)	CTPM240/**CTPM245** (DPX2240/**DPX2245)**		
	CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**			

Chip Breakers Overview

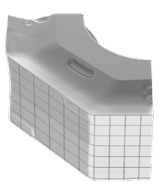
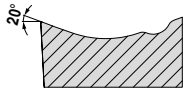
MaxiMill 274 (SF..)

	Model	Machining fine	Machining medium	Machining rough	sectional illustration	f_z in mm
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP220**/CTPP225 **(DCX1220**/DPX1225) CTPM225 (DPX2225)	**CTCP230**/CTPP235 **(DCX1230**/DPX1235) **CTPM225/CTPM240** **(DPX2225/DPX2240)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM240 (DPX2240)		0,10–0,30
-R50 ▲ Stable Geometry ▲ Medium rough machining ▲ For interrupted cuts ▲ First choice for cast iron materials			**CTCK215/CTPK220** **(DCX3215/DPX3220)**	**CTCK215/CTPK220** **(DCX3215/DPX3220)**		0,10–0,35

MaxiMill 271

-F50 ▲ Positive Geometry ▲ Medium rough machining ▲ For unstable clamoing with steel machining ▲ First choice for stainless steel materials		**CTCP220**/CTPP225 **(DCX1220**/DPX1225) **CTCM235**/CTPM225 **(DCX2235/**DPX2225) **CTCS245/CTC5240** **(HCF5240)**	**CTCP230**/CTPP235 **(DCX1230**/DPX1235) CTPM225/**CTPM240**/CTPM245 (DPX2225/**DPX2240**/ DPX2245) **CTCS245/CTC5240** **(HCF5240)**	**CTPP235** **(DPX1235)** **CTPM245** **(DPX2245)** **CTCS245/CTC5240** **(HCF5240)**		0,20–0,30
-M50 ▲ Universal Geometry ▲ Medium to heavy rough machining ▲ First choice for general steel materials		**CTCP220**/CTPP225 **(DCX1220**/DPX1225)	CTPP225/**CTCP230**/CTPP235 (DPX1225/**DCX1230**/DPX1235) CTPM225/**CTCM235**/**CTPM240** (DPX2225/**DCX2235**/**DPX2240**) **CTCK215**/CTPK220 **(DCX3215**/DPX3220)	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTCM235/**CTPM240** (DCX2235/**DPX2240)** CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50
-R50 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials			**CTCK215**/CTPK220 **(DCX3215**/DPX3220)	CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50

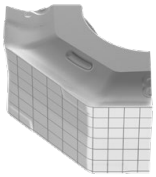
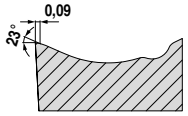
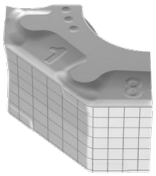
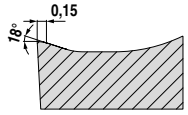
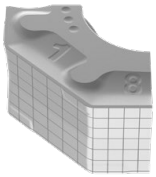
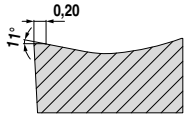
MaxiMill 273

-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		CTPM245 (DPX2245) **CTC5240** **(HCF5240)**	CTPM245 (DPX2245) **CTC5240** **(HCF5240)**	CTC5240 (HCF5240)		0,20–0,25

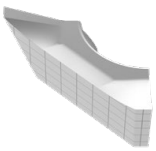
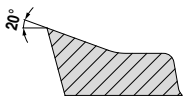
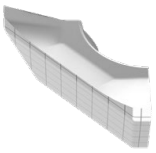
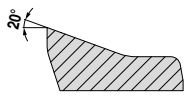
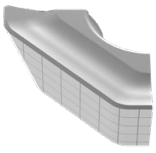
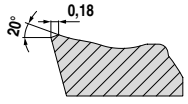
15

Chip Breakers Overview

MaxiMill 273

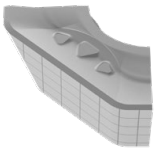
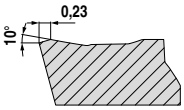
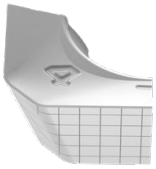
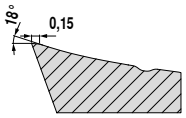
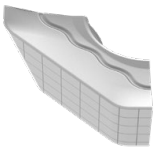
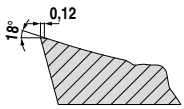
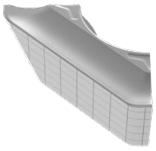
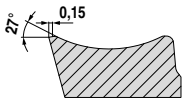
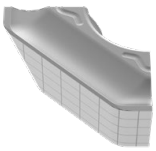
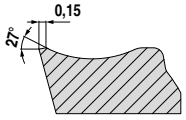
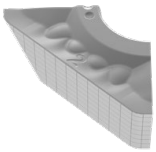
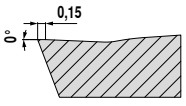
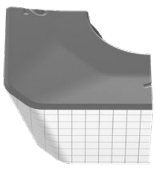
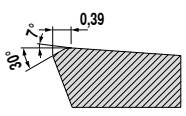
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTCP220/**CTPP225 **(DCX1220/**DPX1225)	CTPP225/**CTCP230/**CTPP235 (DPX1225/**DCX1230/**DPX1235) CTPP225/**CTPM240** (DPX1225/**DPX2240)**	CTPM240 (DPX2240)		0,20–0,25
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP220/**CTPP225 **(DCX1220/**DPX1225) CTPM225/CTCM235 (DPX2225/ DCX2235)	CTPP225/**CTCP230/**CTPP235 (DPX1225/**DCX1230/**DPX1235) CTPP225/**CTPM240** (DPX1225/**DPX2240)** **CTCK215**/CTPK220 **(DCX3215/**DPX3220)	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTCM235/**CTPM240** (DCX2235/**DPX2240)** CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50
-R50 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials			CTCK215/CTPK220 (DCX3215/DPX3220) **CTCK215**/CTPK220 **(DCX3215/**DPX3220)	CTCK215/CTPK220 (DCX3215/DPX3220) CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50

MaxiMill 270

-27 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ First choice for non-ferrous metals		**H216T** **(CWK26)**	**H216T** **(CWK26)**	**H216T** **(CWK26)**		0,05–0,40
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		**H216T**/AMZ **(CWK26**/AMZ)	**H216T**/AMZ **(CWK26**/AMZ)	**H216T**/AMZ **(CWK26**/AMZ)		0,05–0,40
-29 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP230**/CTPP235 **(DCX1230**/DPX1235)	CTCP230/**CTPP235** (DCX1230/**DPX1235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)**		0,10–0,30

Chip Breakers Overview

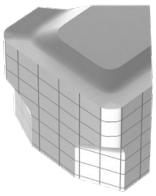
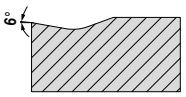
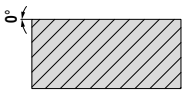
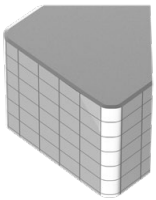
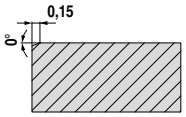
MaxiMill 270

	Model	Machining			sectional illustration	f_z in mm
		fine	medium	rough		
-31 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials			**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		0,10–0,35
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTPM245 (DPX2245)** CTCS245	**CTPM245 (DPX2245)** **CTCS245**	CTPM245 (DPX2245) CTCS245		0,10–0,20
-M31 ▲ Positive Geometry ▲ Smooth running ▲ Universal application ▲ For heat resistant materials, titanium and super alloys		CTC5240 (HCF5240)	CTC5240 (HCF5240)	CTC5240 (HCF5240)		0,10–0,25
-33 ▲ Positive Geometry ▲ Light rough machining ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**		0,10–0,25
-33P ▲ Positive Geometry ▲ Reduced built up edge ▲ First choice for stainless steel materials			**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**		0,10–0,25
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTPP235 (DPX1235)	**CTPP235 (DPX1235)**	**CTPP235 (DPX1235)**		0,20–0,60
-R50 ▲ Stable Geometry ▲ Medium rough machining ▲ For interrupted cuts ▲ First choice for cast iron materials		**CTCP230**/CTPP235 (**DCX1230**/DPX1235) **CTPM225** **CTCK215**	CTCP230/**CTPP235** (DCX1230/**DPX1235**) **CTPM225** **CTCK215**	**CTCP230/CTPP235** (**DCX1230/DPX1235**) **CTPM225** **CTCK215**		0,30–0,80

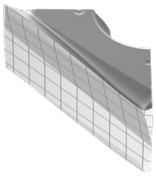
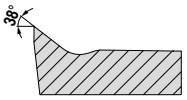
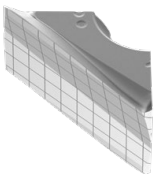
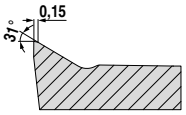
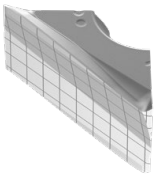
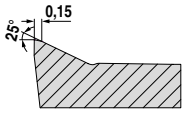
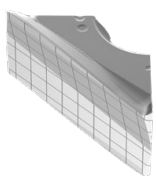
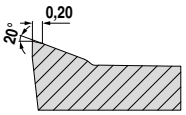
15

Chip Breakers Overview

MaxiMill HEC

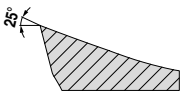
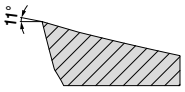
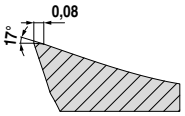
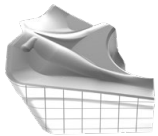
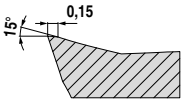
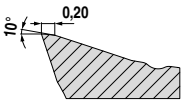
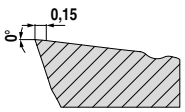
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-R50 ▲ Positive Geometry ▲ For thin-walled components ▲ For low powered machines ▲ For cast iron materials	 **CTCK215 (DCX3215)**	**CTPK220 (DPX3220)**			0,08–0,25
-ER ▲ Stable cutting edge ▲ Universal application ▲ High surface quality through parallel land ▲ First choice for cast iron materials	 **CTEP210 (DCC1210)** **CTCK215**/CTEP210 **(DCX3215**/DCC1210)	**CTPK220 (DPX3220)**			0,08–0,30
-SR ▲ Stable cutting edge ▲ Aligned with ceramics & CBN as a cutting material ▲ Stable component clamping and machine ▲ For cast iron materials	 **CTN3105**/CTL3215 **(CTS3105)**				0,10–0,25

MaxiMill 491

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F10 ▲ Very positive geometry ▲ Sharp cutting edge ▲ Prevents sticking and edge build up ▲ First Choice for non-ferrous metal	 CTWN215 (CWK4615) **CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		0,05–0,25
-F50 ▲ Positive geometry ▲ Finishing and light roughing ▲ First choice for stainless steel materials	 **CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**			0,10–0,20
-M50 ▲ Universal geometry ▲ Light to medium roughing ▲ First choice for general steel materials		**CTCP230**/CTPP235 **(DCX1230**/DPX1235) **CTPM240 (DPX2240)**	**CTPP235/**CTCP230 **(DPX1235**/DCX1230) **CTPM240 (DPX2240)**		0,10–0,25
-R50 ▲ Stable geometry ▲ Strong roughing geometry ▲ For heavily interrupted cutting ▲ First choice for cast iron materials		**CTCK215**/CTPK220 **(DCX3215**/DPX3220)	**CTPK220**/CTCK215 **(DPX3220**/DCX3215)		0,10–0,30

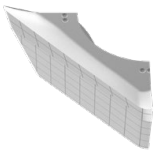
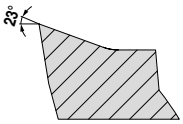
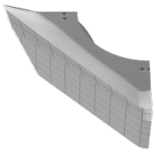
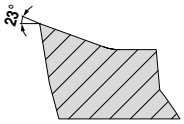
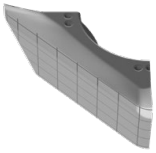
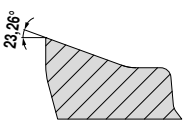
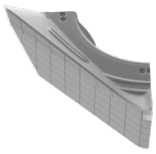
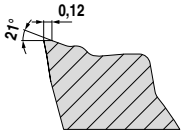
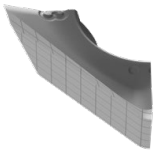
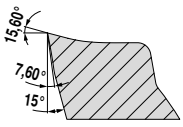
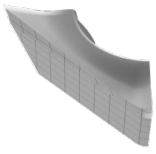
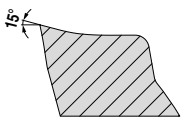
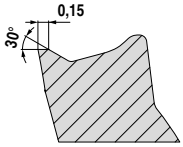
Chip Breakers Overview

MaxiMill 211

	Model	Machining			sectional illustration	f_z in mm
		fine	medium	rough		
-F20 ▲ Highly positive geometry ▲ First choice for non-ferrous metals		**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		0,10–0,20
-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		**CTC5240/CTCS245**	CTPM245 **CTC5240/CTCS245**	**CTPM245** **CTC5240/CTCS245**		0,05–0,15
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTCP220**/CTPP225 (**DCX1220**/DPX1225) **CTCM235**/CTPM225 (**DCX2235**/DPX2225)	**CTCP230**/CTPP235 (**DCX1230**/DPX1235) CTPM225/**CTPM240/CTPM245** (DPX2225/**DPX2240/ DPX2245**)	CTCP230/**CTPP235** (DCX1230/**DPX1235**) CTPM240/**CTPM245** (DPX2240/**DPX2245**)		0,10–0,20
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCM235**/CTPM225 (**DCX2235**/DPX2225)	**CTCP230**/CTPP235 (**DCX1230**/DPX1235) CTPM225/**CTPM240** (DPX2225/**DPX2240**) **CTCK215**/CTPK220 (**DCX3215**/DPX3220)	CTCP230/CTPP235 (DCX1230/DPX1235) CTPM225/CTPM240 (DPX2225/DPX2240) CTCK215/**CTPK220** (DCX3215/**DPX3220**)		0,10–0,25
-R50 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials		**CTCK215 (DCX3215)**	CTPM225/**CTPM240/CTCM235** (DPX2225/**DPX2240/DCX2235**) **CTCK215 (DCX3215)**	CTCP230/CTPP235 (DCX1230/DPX1235) CTPM225/**CTPM240/CTCM235** (DPX2225/**DPX2240/DCX2235**) **CTCK215 (DCX3215)**		0,10–0,30
-R60 ▲ Highly stable geometry ▲ For stable clamping ▲ First choice for hard machining		**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**		0,05–0,20

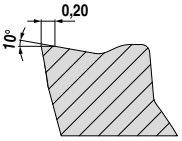
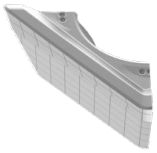
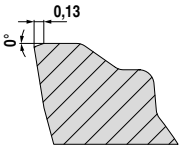
Chip Breakers Overview

MaxiMill 490

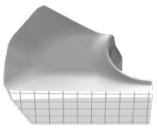
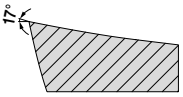
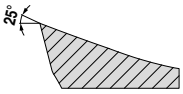
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-27 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ For finish machining of titanium alloys		**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		0,10–0,20
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		**AMZ**/H216T **(AMZ**/CWK26) AMZ/**H216T** (AMZ/**CWK26)**	AMZ/H216T **(AMZ/CWK26)**	AMZ/H216T **(AMZ**/CWK26)		0,08–0,35
-F10 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ For heat resistant materials		**CTCS245**	**CTCS245**		0,05–0,20
-29 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM240 (DPX2240)	CTCP230/**CTPP235** (DCX1230/**DPX1235)**		0,10–0,25
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		CTPM245 (DPX2245)	**CTPM245 (DPX2245)** **CTCS245**	**CTCS245**		0,10–0,20
-M31 ▲ Positive Geometry ▲ Universal application ▲ Smooth running ▲ For heat resistant materials, titanium and super alloys		**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		0,10–0,20
-33 ▲ Positive Geometry ▲ Light rough machining ▲ First choice for stainless steel materials		CTPM240 (DPX2240)	**CTPM240 (DPX2240)**		0,10–0,20

Chip Breakers Overview

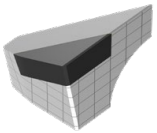
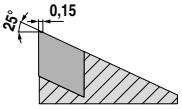
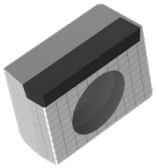
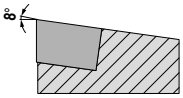
MaxiMill 490

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-31 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials		**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		0,10–0,30
-SR ▲ Stable Geometry ▲ Light to medium finishing ▲ Aligned with cermet ▲ For steel materials		**TCM10 (CWC10)** TCM10 (CWC10) TCM10 (CWC10)	**TCM10/CTPP235 (CWC10/DPX1235)**	**CTPP235 (DPX1235)**		0,05–0,25

MaxiMill HSC/HPC

-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		H216T (CWK26) **H216T (CWK26)**	**H216T (CWK26)**	**H216T (CWK26)**		0,05–0,35
-F20 ▲ Highly positive geometry ▲ First choice for non-ferrous metals		**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		0,10–0,20

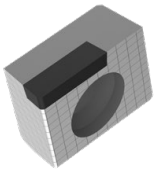
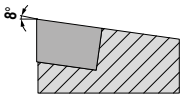
MaxiMill HPC

-SR ▲ Highly positive geometry ▲ Universal application ▲ Low cutting forces ▲ Minimum burr formation ▲ High surface quality through parallel land		**CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**		0,10–0,30
-ER ▲ Positive Geometry ▲ Medium to heavy rough machining ▲ Reduced burr formation ▲ Finishing of cast iron and hardened steel		**CTL3215 (CWB3215)** **CTD4205 (CWD4205)** **CTL3215 (CWB3215)**	**CTL3215 (CWB3215)** **CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**		0,10–0,35

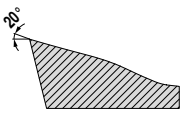
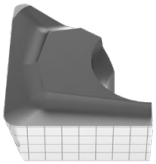
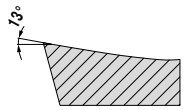
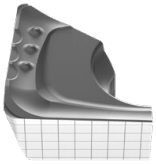
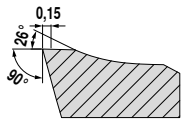
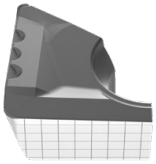
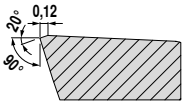
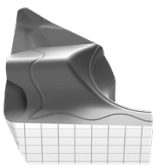
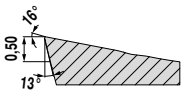
15

Chip Breakers Overview

MaxiMill HPC

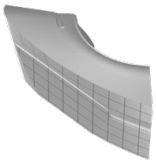
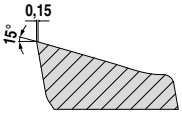
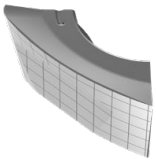
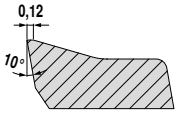
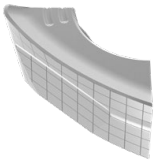
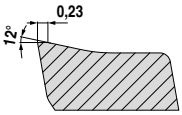
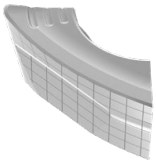
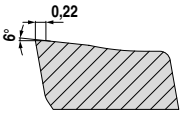
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-FR ▲ Positive Geometry ▲ For medium to heavy rough machining ▲ Reduced burr formation					0,10–0,35
	CTD4205 (CWD4205)	**CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**		

MaxiMill 141/241/242

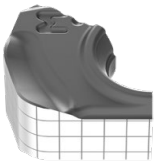
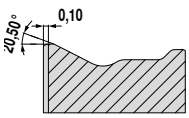
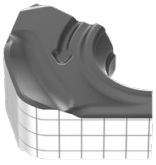
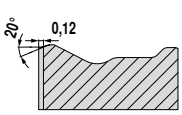
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals					0,05–0,25
	H216T (CWK26)	**H216T (CWK26)**	**H216T (CWK26)**		
-29 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP230**/CTPP235 **(DCX1230)**/DPX1235)	CTCP230/**CTPP235** (DCX1230/**DPX1235)**		0,10–0,30
-33 ▲ Positive Geometry ▲ Light rough machining ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**		0,10–0,30
-SR ▲ Stable Geometry ▲ Light to medium finishing ▲ Aligned with cermet ▲ For steel materials		**CTCP230 (DCX1230)**	**CTCP230 (DCX1230)**		0,15–0,35
-ER ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		CTC5240 (HCF5240)	**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		0,10–0,25

Chip Breakers Overview

MaxiMill HFC

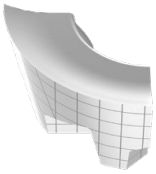
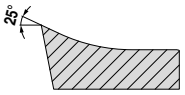
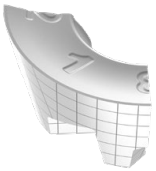
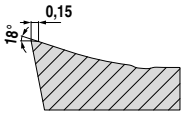
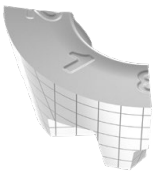
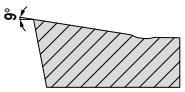
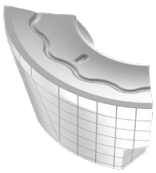
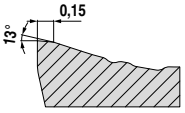
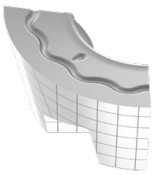
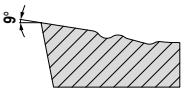
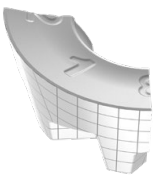
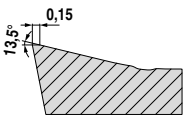
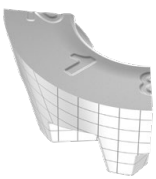
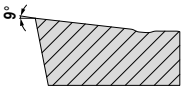
	Model	Machining			sectional illustration	f_z in mm
		fine	medium	rough		
-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys						0,20–1,25
			CTPM245 (DPX2245)	CTPM245 (DPX2245)		
		CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**	**CTC5240/CTCS245 (HCF5240)**		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ For heat resistant materials						0,20–1,50
		CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**	**CTC5240/CTCS245 (HCF5240)**		
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTCP220/**CTPP225/CTCP230** (DCX1220/**DPX1225/DCX1230**)	CTPP225/**CTCP230/CTPP235** (DPX1225/**DCX1230/DPX1235**)	CTCP230/**CTPP235** (DCX1230/**DPX1235**)		0,50–3,00
		CTPM225 (DPX2225)	**CTCM235/CTPM240**/CTPM245 **(DCX2235/DPX2240**/DPX2245)	**CTPM240/CTPM245 (DPX2240/DPX2245)**		
			CTCK215 (DCX3215)	**CTCK215 (DCX3215)**		
-R50 ▲ Stable Geometry ▲ For stable machining conditions ▲ First choice for heavily interrupted cuts ▲ First choice for general steel materials			**CTPP235 (DPX1235)**	**CTPP235 (DPX1235)**		0,50–3,00

DHFC

-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTPP236	**CTPP236**	CTPP236		0,25–1,20
		CTPM241	**CTPM241**	CTPM241		
-R50 ▲ Stable Geometry ▲ For stable machining conditions ▲ First choice for heavily interrupted cuts ▲ First choice for general steel materials			**CTPP231**/CTPP236	CTPP231/**CTPP236**		0,30–1,20
			CTPK221	**CTPK221**		

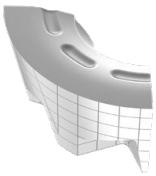
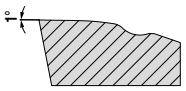
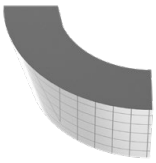
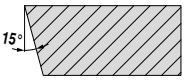
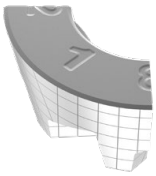
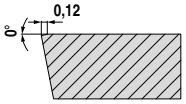
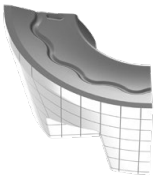
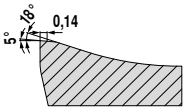
Chip Breakers Overview

MaxiMill 251

	Model	Machining fine	Machining Medium	Machining rough	sectional illustration	f_z in mm
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		H216T (CWK26) **H216T (CWK26)**	**H216T (CWK26)**	**H216T (CWK26)**		0,05–0,40
-F50 ▲ Positive Geometry ▲ Low cutting forces ▲ For unstable workholding ▲ First choice for austenitic stainless steel materials		CTCP230/**CTPP235** (DCX1230/**DPX1235**) CTPP225/**CTCM235**/CTPM240 (DPX1225/**DCX2235**/DPX2240) **CTCS245**	CTCP230/**CTPP235** (DCX1230/**DPX1235**) CTPP225/**CTCM235/CTPM240** (DPX1225/**DCX2235/DPX2240**) **CTCS245**	CTCM235/**CTPM240** (DCX2235/**DPX2240**) **CTCS245**		0,08–0,35
-M30 ▲ Medium rough machining ▲ Combines low cutting force and stability ▲ First choice for martensitic stainless steel materials		CTPP225/**CTCM235**/CTPM240 (DPX1225/**DCX2235**/DPX2240)	**CTPP235 (DPX1235)** CTPP225/**CTCM235/CTPM240** (DPX1225/**DCX2235/DPX2240**)	**CTPP235 (DPX1235)** CTPP225/CTCM235/**CTPM240** (DPX1225/DCX2235/**DPX2240**)		0,08–0,35
-M31 ▲ Positive Geometry ▲ Universal application ▲ Smooth running ▲ For heat resistant materials, titanium and super alloys		**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		0,08–0,35
-M32 ▲ Medium rough machining ▲ Low cutting force and good stability ▲ First choice for martensitic stainless steel materials		CTPM245 (DPX2245)	**CTPM245 (DPX2245)**	**CTPM245 (DPX2245)**		0,08–0,35
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP230**/CTPP235 (**DCX1230**/DPX1235)	**CTCP230/CTPP235 (DCX1230/DPX1235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235**)		0,10–0,40
-R30 ▲ Sateble Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials			**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		0,10–0,40

Chip Breakers Overview

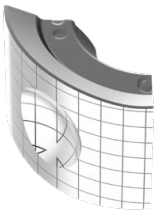
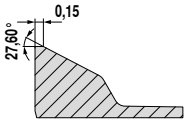
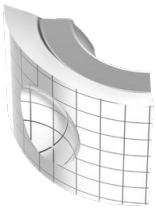
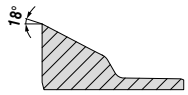
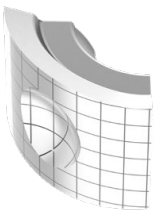
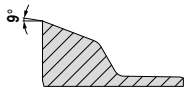
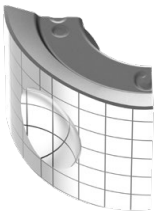
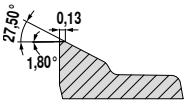
MaxiMill 251

Model	Machining			sectional illustration	f_z in mm
	fine	Medium	rough		
-R60 ▲ Highly stable geometry ▲ For stable clamping ▲ First choice for hard machining					0,05–0,35
	CTP6215 (CCN6215)	**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**		
-FN ▲ Highly positive geometry ▲ First choice for non-ferrous metals					0,10–0,40
	H216T (CWK26)	**H216T (CWK26)**	**H216T (CWK26)**		
-SN ▲ Robust insert ▲ For poor machining conditions ▲ First choice for cast iron/steel matrerials					0,10–0,40
	TCM10/CTCP230 **(CWC10**/DCX1230)	TCM10/**CTCP230/CTPP235** (CWC10/**DCX1230/DPX1235**)	CTCP230/**CTPP235** (DCX1230/**DPX1235**)		
	TCM10/CTPM225 (CWC10/ DPX2225)	**CTPM225 (DPX2225)**	CTPM225 (DPX2225)		
	TCM10/CTCK215 (CWC10/DCX3215)	**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		
-EN ▲ Universal Geometry ▲ Low cutting force ▲ First choice for good flatness					0,15–0,50
	CTCK215 (DCX3215)	**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		

15

Chip Breakers Overview

MaxiMill 252

Model	Machining			sectional illustration	f_z in mm
	fine	Medium	rough		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	CTPM240 (DPX2240)		0,08–0,35
-M31 ▲ Positive Geometry ▲ Universal application ▲ Smooth running ▲ For heat resistant materials, titanium and super alloys		CTPM245 (DPX2245) **CTC5240 (HCF5240)**	**CTPM245 (DPX2245)** **CTC5240 (HCF5240)**		0,08–0,35
-M32 ▲ Medium rough machining ▲ Low cutting force and good stability ▲ First choice for martensitic stainless steel materials		CTPM245 (DPX2245)	**CTPM245 (DPX2245)**		0,05–0,35
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTPP235 (DPX1235)	**CTPP235 (DPX1235)**		0,10–0,40

Grade description

CTCP220 / DCX1220
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P20**
- The wear-resistant grade for dry machining steels

CTCP225 / DPX1225
- Carbide, TiAlTaN-coated
- ISO | **P25** | **K25**
- The wear-resistant grade for wet machining of steels

CTCP230 / DCX1230
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P30** | **K25** | M25
- The first choice for dry machining steel at high cutting speeds

CTPP235 / DPX1235
- Carbide, TiAlTaN-coated
- ISO | **P25** | **K25**
- The wear-resistant grade for wet machining of steels

CTPM225 / DPX2225
- Carbide, TiAlTaN-coated
- ISO | P25 | **M25**
- The wear-resistant choice for machining austenitic steels

CTCM235 / DCX2235
- Carbide, TiCN-Al_2O_3-coated
- ISO | P40 | **M35**
- The tough alternative for general steel machining
- Well suited to martensitic steel materials

CTPM240 / DPX2240
- Carbide, TiAlTaN-coated
- ISO | P40 | **M40**
- The first choice for machining austenitic steels

CTCK215 / DCX3215
- Carbide, TiCN-Al_2O_3-coated
- ISO | **K15**
- The first choice for machining cast iron materials at high cutting speeds

CTPK220 / DPX3220
- Carbide, TiAlTaN-coated
- ISO | **K20**
- Optimal for machining high-strength cast iron materials in the tougher application range

CTEP210 / DCC1210
- Cermet, TiCN-Al_2O_3-coated
- ISO | **P10** | **K05**
- The coated cermet grade with reserves of toughness for finish machining at high cutting speeds

CTWN215 / CWK4615
- Carbide, uncoated
- ISO | K15 | **N15**
- Uncoated carbide grade for machining non-ferrous metals

AMZ
- Carbide, TiAlN-coated
- ISO | P10 | K10 | **N10** | S10
- The coated carbide grade for aluminium machining

CTC5240 / HCF5240
- Carbide, TiN-TiB_2-coated
- ISO | **S40**
- The special grade for machining titanium and titanium alloys

CTD4205 / CWD4205
- Carbide, uncoated
- ISO | **N05**
- Polycrystalline diamond grade for machining non-ferrous metals and non-metallic materials

H216T / CWK26
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

TCM10 / CWC10
- Cermet, uncoated
- ISO | **P15** | **M10** | K10
- The uncoated cermet grade for finish machining stainless and hardened steel
- Particularly wear resistant thanks to high heat resistance

CTP6215 / CCN6215
- Carbide, TiAlN-coated
- ISO | **K15** | **H15**
- The coated carbide grade for hard machining

15

Grade description

WAN1240
- Carbide, coated
- ISO | **P40** | M40 | K40
- Coated, tough special grade for machining steel at medium to high cutting speeds
- Also suitable for machining cast iron as a secondary application

WAX1240
- Carbide, coated
- ISO | **P40** | K40
- High-strength special grades for medium and rough machining of steel at medium cutting speeds and an extremely high feed per tooth

WAN2225
- Carbide, coated
- ISO | **M25** | S25
- Fine grain size with high toughness and temperature resistance
- For rough and finish machining of rust and acid-resistant steels in both wet and dry cutting

WUN4210
- Carbide, uncoated
- ISO | **N10**
- Uncoated standard grade for medium machining of non-ferrous metals and graphite

WTN1205
- Carbide, coated
- ISO | **P05** | **K05** | N05 | S05 | **H05**
- Coated special grade for machining steel, hardened steel, cast iron, graphite and plastics

CTPK211
- Carbide, TiAlN-coated
- ISO | M15 | **K10** | **N10** | S10 | H10
- The coated standard grade for fine machining of cast iron and non-ferrous metals at medium cutting speeds

CTPP236
- Carbide, TiAlN-TiN coated
- ISO | **P35** | M35 | **K30**
- The tough special grade for medium and rough machining of steel at high cutting speeds
- This grade is also suitable for machining cast iron and stainless steel

CTPP231
- Carbide, coated
- ISO | **P30** | K25
- A very tough special grade for medium and rough machining of steel at medium cutting speeds and an extremely high feed per tooth

CTPM241
- Carbide, AlTiN-coated
- ISO | P40 | **M40** | **S40**
- The tough carbide grade for machining stainless and heat-resistant steels

CTPP216
- Carbide, TiAlN-coated
- ISO | **P10** | M10 | **K10** | H10
- Highly wear-resistant carbide grade with high cutting edge stability for finish machining of high-strength materials, unalloyed tool steels, cast iron and hardened steel up to 54 HRC

CTPP211
- Carbide, coated
- ISO | **P10** | **M10** | K10
- Wear-resistant carbide grade for medium and rough machining of steel and stainless steel
- Well suited to dry machining

CTPK231
- Carbide, coated
- ISO | **P30** | **K30**
- Tough carbide grade for medium and rough machining of steel and cast iron materials
- Well suited to dry machining

CTPK226
- Carbide, coated
- ISO | P30 | **K30** | **H30**
- Extremely wear-resistant ultra-fine grain carbide grade for machining cast iron materials and hardened steels up to 62 HRC

CTCN211
- Carbide, coated
- ISO | **N10**
- Diamond-coated carbide grade especially for machining graphite and non-ferrous metals

Grade description

C	T	C	P	2	2	0
D	C	X	1	2	2	0

(Example)

Degree of hardness

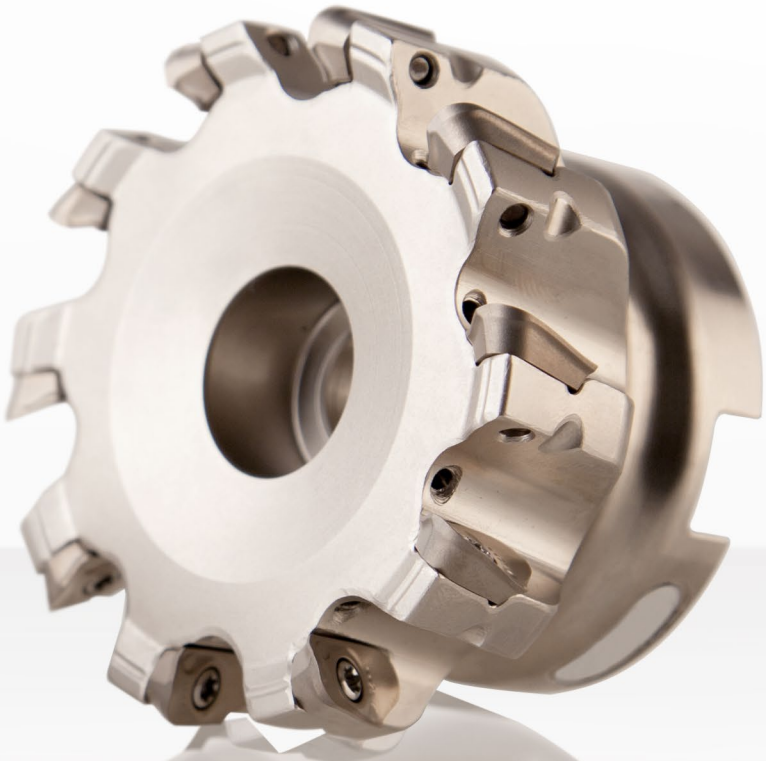
05	ISO 05
10	ISO 10
15	ISO 15
...	

Application

1	Turning
2	Milling
3	Grooving
4	Drilling
5	Thread turning
6	Others
7	Several processes

Main application – material

1|P	Steel
2|M	Stainless steel
3|K	Cast iron
4|N	Light and non ferrous metals
5|S	Super alloys, titanium
6|H	Hard materials
7|X	Universal application



New products for machining technicians

NEW ABS adapters



Work with flexibility and process-security with the modular ABS coupling system for rotating and stationary tools.



Solid drilling and bore machining

1 HSS drilling

2 Solid carbide drilling

3 Indexable insert drilling

4 Reaming and Countersinking

5 Spindle Tooling

Threading

6 Taps and thread formers

7 Circular and Thread Milling

8 Thread turning

Turning

9 Turning Tools

10 EcoCut

11 Grooving Tools

12 Miniature turning tools

Milling

13 HSS Milling Cutters

14 Solid Carbide milling cutters

15 Milling tools with indexable inserts

Tool Clamping

16 Adapters

17 Accessories

18 Material examples and article no. index

Table of contents

Symbol explanation	2
Toolfinder	
Machine interface	3
Rotating toolholders	4+5
Adapters, stationary	
– HSK-T and PSC tool holders	6+7
– VDI adapters for star turrets	8
– VDI adapters for disc turrets	9
Product programme	10–223
Technical Information	
Driven Tools	224–226
Quick-Change	227+228
Technical Data DIN 69871, MAS-BT, PSC	229
Technical Data HSK-A, HSK-E	230
Technical Information for Polygon Shank Adapters	231
High Pressure Milling Chuck	232
Transmittable torques and static clamping torques	233

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Version


Without coolant supply (Form A)


Axial coolant (Form AD)


Coolant supply either via the flange, or central (Form AD / B)


With eroded cooling ducts


Adapter with two additional coolant holes

SZID = For tool size

Types

Centro-P – Precision collet chuck with high holding forces, suitable for all machining

Centro-P WD – Collet with pull-out protection, specifically for use with Centro-P precision collet chucks

Centro-P Coated – Coated precision collet for Centro-P precision collet chuck

TG – Specially matched adapter for ThermoGrip® shrinking process

NC 2010 – Short drill chuck for all drilling applications

Coated – Coated collet for universal application

ER-B 2 µm
Collets Description
▲ Type - Version
▲ Concentricity

ABS – **KOMET ABS** – modular coupling system for rotating and stationary tools

Toolfinder – Machine interface

DIN 69871 – SK steep taper adapters



- SK 30
- SK 40
- SK 50

Toolfinder – Adapters, rotating 4+5
Product programme 10–49

JIS B 6339 – BT steep taper adapters



MAS-BT / MAS-BT-FC with face contact

- BT 30
- BT 40
- BT 50
- BT-FC 30
- BT-FC 40
- BT-FC 50

Toolfinder – Adapters, rotating 4+5
MAS-BT product range 50–83
MAS-BT-FC product range 84–92

HSK hollow taper adapters with face contact



ISO 12164 – HSK-A / HSK-E

- HSK-A 32
- HSK-A 40
- HSK-A 50
- HSK-A 63
- HSK-A 100
- HSK-E 25
- HSK-E 32
- HSK-E 40
- HSK-E 50

Toolfinder – Adapters, rotating 4+5
HSK-A product range 93–133
HSK-E product range 134–138

ISO 12164-3 – HSK-T

- HSK-T 63
- HSK-T 100

Toolfinder – Adapters, stationary 6+7
Product programme 139–156

ISO 26623-1 – PSC polygon hollow adapters with face contact



PSC, rotating

- PSC 32
- PSC 40
- PSC 50
- PSC 63
- PSC 80

Toolfinder – Adapters, rotating 4+5
Product programme 157–173

PSC, stationary

- PSC 32
- PSC 40
- PSC 50
- PSC 63
- PSC 80
- PSC 80X

Toolfinder – Adapters, stationary 6+7
Product programme 174–187

ISO 10889 – VDI tool holders with cylindrical shank



- VDI 16
- VDI 20
- VDI 25
- VDI 30
- VDI 40
- VDI 50

Toolfinder – Adapters, stationary 8+9
Product programme 188–205
Driven Tools 224–226

Toolfinder – Adapters, rotating

	Holder Type		Finishing	Roughing – Finishing	Roughing	DIN 69871	JIS B 6339		ISO 12164		ISO 26623-1
						SK	MAS-BT	MAS-BT-FC	HSK-A	HSK-E	PSC
Accuracy	Maximum	Centro-P									
		▲ ER Precision Collet chuck	●	●	●	10–12	50–52	84	93–95	134+135	157
		▲ OZ precision collet chuck	●	●	●	13	53		96		
		High Pressure Milling Chuck	●	●	○	14–16	54–56	86	97–99		158
		Hydraulic chuck	●			17+18	57+58	87	100+101		
		Heat Shrink Adapter	●	○		19–22	59+60	85	102–107	136	159+160
		Micro-Precision Collet Chuck	●						119	137	
	High	Cylindrical shank adapter									
		▲ Weldon		○	●	23–25	61+62	88	108–112		161
		▲ Whistle Notch		○	●	26+27	63+64		113		162
		Indexable insert drill adapter				28	65		114		163
		Collet Chuck									
		▲ ER Collet chuck	●	○		29	66	89	115–117		164+165
		▲ OZ Collet Chuck	●	○		30	67				
		NC 2010 short drill chuck				31	68		118		
		Quick change tapping chuck with minimum length compensation				32+33	69+70		120+121		166
		Quick change tap chuck with length compensation				34	71		122		167
		Quick change tap chuck without length compensation				34	71		122		
		ABS adapters				35+36	72+73		123+124		

● = **Main Application** ○ = Extended application

Toolfinder – Adapters, rotating

	Holder Type		Finishing	Roughing – Finishing	Roughing	DIN 69871 SK	JIS B 6339 MAS-BT	JIS B 6339 MAS-BT-FC	ISO 12164 HSK-A	ISO 12164 HSK-E	ISO 26623-1 PSC
Accuracy	Medium	Adapter for milling cutters with threaded end		○	●	37+38	74		125+126		168
		Face mill adapter									
		▲ Combination shell mill adapter	●	●	●	39	75		127		169+170
		▲ Shell mill adapter	●	●	●	40+41	76+77	90	128–130		
		▲ Large diameter facemill adapter	●	●	●	42	78				
		Drill chuck adapter				43	79				
		Milling adapter sleeve for Morse taper shanks with external thread		○	●	44	80				
		Taper adapter for Morse taper				45	81		131		171

Overview Accessories

		DIN 69871 SK	JIS B 6339 MAS-BT	JIS B 6339 MAS-BT-FC	ISO 12164 HSK-A	ISO 12164 HSK-E	ISO 26623-1 PSC
Intermediate/reducing adapter for SK adapters		46	82				
Blank		47	83		132		172
Test bar		47	83		133		173
Pull stud		48+49	91+92				
Coolant pipe/key					138		173

Collets and quick change adapters can be found on → **Pages 206–223.**

Toolfinder – Stationary adapters – HSK-T and PSC tool holders

Toolholders for negative turning inserts

	Type Machining	Illustration	HSK-T ISO 12164	PSC ISO 26623
	DCLN 95° Internal + External		139	174
CN..	DCMN 95° External		139	
	DCMN+ DDMN External		140	
	DCMN+ DDMN External		140	
	DDUN 93° Internal + External		140	
DN..	DDJN 93° Internal + External		141	174
	DDHN 107,5° Internal + External		141	
	DDMN 48° External		142	
SN..	DSDN 45° External		142	
VN..	DVMN 50° External		143	
WN..	DWLN 95° Internal + External		143	175

Toolholders for positive turning inserts

	Type Machining	Illustration	HSK-T ISO 12164	PSC ISO 26623
	SCLC 95° Internal + External		144	
CC..	SCMC 50° External		144	
	SDJC 93° Internal + External		145	175
DC..	SDNC 62,5° Internal + External			176
	SDMC 48° External		145	
	PRDC 0° External		146	
RC..	PRSC Internal + External		146	
	SVUC 93° Internal + External		147	
	SVJC 93° Internal + External		147	
VC..	SVHC 107,5° Internal + External		148	
	SVMC 50° External		148	

Multifunction tools – EcoCut

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
2,25xD		152	

Toolfinder – Stationary adapters – HSK-T and PSC tool holders

Holders for grooving and threading inserts

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
0°		153	
90°		153	

Toolholders for threading inserts

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Internal thread			179
External thread			179

Boring bars for negative inserts

	Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
 CN..	DCLN 95°		149	
 DN..	DDUN 93°		149	
 WN..	DWLN 95°		150	

Boring bars for positive inserts

	Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
 CC..	SCLC 95°		151	177
 DC..	SDUC 93°		151	177
 VC..	SVUC 93°		152	
	SVQC 107,5°			178

Basic holder

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Square shank holder 0°		155	180
Square shank holder 45°		155	181
Square shank holder 90°		156	180
Square shank holder 2 face 0°			181
Square shank holder 3 face 0°		155	181
Boring bar holder		156	182+183

Extension / Reduction / Adapter

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Extension			184
Reduction			185+186

Parting blade holders

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Parting Blade Holder GX / LX / FX / SX		154	
Radial Grooving Holders, right / left			180

Others

Protection plug			187
Hollow nose keys			187

16

Toolfinder – Stationary adapters – VDI adapters for star turrets







Toolholders above

Upper turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C1/C2/D1/D2	188–191	B2/B3/B6/B7/C3/C4/D1/D2	188–191
	Part Off Holder	double	201	double – overhead	201
	Adapter VDI to VDI	left-hand	202	left-hand	202
	Boring bar holder	left-hand	202+203	left-hand	202+203

Lower turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C3/C4/D1/D2	188–191	B2/B3/B6/B7/C1/C2/D1/D2	188–191
	Part Off Holder	double – overhead	201	double	201
	Adapter VDI to VDI	right-hand	202	right-hand	202
	Boring bar holder	right-hand	202+203	right-hand	202+203

Toolholders below

Upper turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C3/C4/D1/D2	188–191	B2/B3/B6/B7/C1/C2/D1/D2	188–191
	Part Off Holder	double	201	double – overhead	201
	Adapter VDI to VDI	right-hand	202	right-hand	202
	Boring bar holder	right-hand	202+203	right-hand	202+203

Lower turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C1/C2/D1/D2	188–191	B2/B3/B6/B7/C3/C4/D1/D2	188–191
	Part Off Holder	double – overhead	201	double	201
	Adapter VDI to VDI	left-hand	202	left-hand	202
	Boring bar holder	left-hand	202+203	left-hand	202+203

Toolfinder – Stationary adapters – VDI adapters for disc turrets







Upper turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	**Square Shank Adapters**	B1/B5/C1/C2/D1	188–191	B3/B7/C3/C4/D2	188–191
	**Cylindrical Shank Adapters**	E/E1/E2/E3/E4	191–194	E/E1/E2/E3/E4	191–194
	**Taper Adapters**	F1	195	F1	195
	**Part Off Holder**	right-hand	196+197	overhead right	196+197
	**Drill Chucks**	NC 2010	198	NC 2010	198
	**Tapping Chucks**	GSF/GML	199	GSF/GML	199

Lower turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	**Square Shank Adapters**	B4/B8/C3/C4/D2	188–191	B2/B6/C1/C2/D1	188–191
	**Cylindrical Shank Adapters**	E/E1/E2/E3/E4	191–194	E/E1/E2/E3/E4	191–194
	**Taper Adapters**	F1	195	F1	195
	**Part Off Holder**	overhead left	196+197	left-hand	196+197
	**Drill Chucks**	NC 2010	198	NC 2010	198
	**Tapping Chucks**	GSF/GML	199	GSF/GML	199

Accessories

 **Bar stop** 198

 **Test arbors** 200

 **Tool holders** 200+201

 **Bar pullers** 204

 **Gripper accessories** 205

 **Protection plug** 205

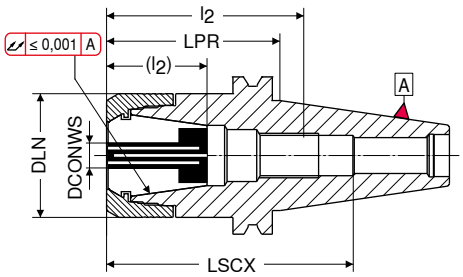
16

ER Precision Collet chuck

- ▲ For standard or sealed nuts
- ▲ Maximum size collet to ISO tolerance field H10
- ▲ For clamping a roll key is required
- ▲ p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





Adapter	DCONWS	LPR	DLN	LSCX	l_2 (l_2)	for collet	AD G 2,5 n_{max} 25000 Y8 Article no. 84 424 ...		AD/B G 2,5 n_{max} 25000 Y8 Article no. 84 414 ...	
	mm	mm	mm	mm	mm		EUR		EUR	
SK 30	2 - 16	70	40	66	35 - 49 (18 - 31)	430E (ER25)	120,60	**016**		
SK 30	2 - 20	70	50	75	50 - 75 (29 - 40)	470E (ER32)	130,70	**020**		
SK 40	1 - 10	70	30	110	28 - 45 (16 - 31)	426E (ER16)	90,50	**102**		
SK 40	1 - 10	100	30	140	28 - 45 (16 - 31)	426E (ER16)	100,60	**103**		
SK 40	1 - 10	130	30	140	28 - 50 (14 - 34)	426E (ER16)			137,80	**510**
SK 40	1 - 10	160	30	200	28 - 45 (16 - 31)	426E (ER16)			155,80	**910**
SK 40	2 - 16	45	40	85	35 - 60 (20 - 42)	430E (ER25)			109,60	**816**
SK 40	2 - 16	70	40	110	35 - 60 (20 - 42)	430E (ER25)	90,50	**162**		
SK 40	2 - 16	100	40	113	35 - 60 (20 - 42)	430E (ER25)	100,60	**163**		
SK 40	2 - 16	130	40	140	38 - 67 (21 - 49)	430E (ER25)			147,80	**516**
SK 40	2 - 16	160	40	118	35 - 60 (20 - 42)	430E (ER25)			165,90	**916**
SK 40	2 - 16	200	40	148	35 - 60 (20 - 42)	430E (ER25)			200,10	**917**
SK 40	2 - 20	50	50	85	52 - 70 (26 - 52)	470E (ER32)	95,53	**201**		
SK 40	2 - 20	70	50	111	55 - 75 (42 - 62)	470E (ER32)	90,50	**202**		
SK 40	2 - 20	100	50	114	52 - 70 (32 - 52)	470E (ER32)	100,60	**203**		
SK 40	2 - 20	130	50	114	50 - 74 (36 - 55)	470E (ER32)			147,80	**620**
SK 40	2 - 20	160	50	119	52 - 70 (32 - 52)	470E (ER32)			165,90	**920**
SK 40	3 - 26	70	63	105	48 - 55	472E (ER40)	120,70	**261** 1)		
SK 40	3 - 26	100	63	120	48 - 62	472E (ER40)	140,80	**262** 1)		
SK 50	1 - 10	70	30	100	28 - 45 (16 - 35)	426E (ER16)	165,90	**106**		
SK 50	1 - 10	100	30	130	28 - 55 (16 - 41)	426E (ER16)	200,10	**107**		
SK 50	1 - 10	160	30	190	28 - 55 (16 - 41)	426E (ER16)	286,60	**108**		
SK 50	2 - 16	70	40	120	35 - 64 (20 - 48)	430E (ER25)	165,90	**166**		
SK 50	2 - 16	100	40	150	35 - 64 (20 - 48)	430E (ER25)	200,10	**167**		
SK 50	2 - 20	70	50	120	59 - 85 (40 - 70)	470E (ER32)			165,90	**320**
SK 50	2 - 20	100	50	150	53 - 81 (35 - 63)	470E (ER32)			200,10	**520**
SK 50	2 - 20	160	50	200	53 - 83 (35 - 65)	470E (ER32)			286,60	**720**
SK 50	3 - 26	70	63	120	48 - 60	472E (ER40)	176,00	**266**		

1) Non standard groove before tool change collar not according to DIN, not suitable for automatic tool change

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 3 mm longer

Spare parts, ER precision collet chuck

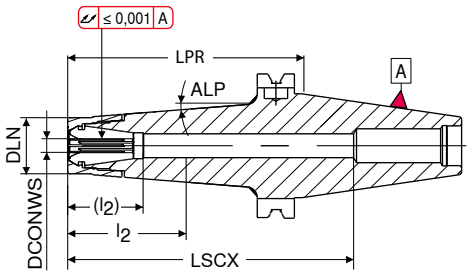
Spare parts	Y8 Lock nut IK		Y8 Lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	EUR		EUR			EUR			EUR	
426E (ER16)	35,19	011	28,15	001	M11x1 - SW6	14,08	341	M11x1 - SW6	9,93	337
430E (ER25)	38,22	013	31,16	003	M18x1,5 - SW6	15,90	432	M18x1,5 - SW6	11,42	431
470E (ER32)	40,23	015	33,15	005	M22x1,5 - SW6	15,90	402	M22x1,5 - SW6	11,42	401
472E (ER40)	54,30	017	45,25	007				M28x1,5 - SW6	10,35	400

ER Precision tapered collet chuck

- For special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	ALP	Y8 Article no. 84 417 ... EUR	
SK 40	1 - 10	100	24	140	28 - 48 (20 - 35)	426E (ER16)	4,5°	114,60	410
SK 40	1 - 10	160	24	200	28 - 48 (20 - 35)	426E (ER16)	2,5°	152,80	910

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8 Tapered lock nut IK		Y8 Tapered lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	EUR		EUR			EUR			EUR	
426E (ER16)	41,23	033	33,15	031	M11x1 - SW6	14,08	341	M11x1 - SW6	9,93	337

Accessories



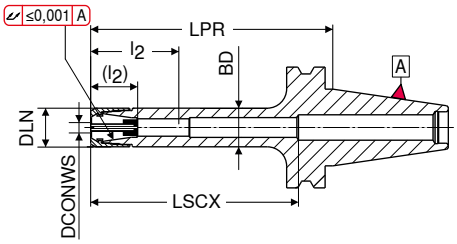
ER collet	Sealing ring	Roll key	Roll key device	Pull studs	Others
→ 208–211, 213	→ 207	→ 17|36	→ 17|36	→ 48–49	→ 17|34

ER Precision collet chuck, slim version

- For Mini Clamping Nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





Adapter	DCONWS mm	LPR mm	DLN mm	BD mm	LSCX mm	l_2 (l_2) mm	for collet	AD G 2,5 n_{max} 25000 Y8 Article no. 84 411 ... EUR		AD/B G 2,5 n_{max} 25000 Y8 Article no. 84 412 ... EUR	
SK 30	1 - 7	50	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	125,70	**007**		
SK 30	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	135,70	**008**		
SK 40	1 - 7	70	16	16	60	15 - 32 (7 - 22)	4008E (ER11)			117,70	**207**
SK 40	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)			117,70	**407**
SK 40	1 - 7	130	16	16	110	15 - 32 (7 - 22)	4008E (ER11)			155,90	**607**
SK 40	1 - 7	160	16	16	68	18 - 36 (12 - 26)	4008E (ER11)			174,00	**907**
SK 40	1 - 10	70	22	22	90	28 - 50 (14 - 36)	426E (ER16)			117,70	**210**
SK 40	1 - 10	100	22	22	110	28 - 50 (14 - 36)	426E (ER16)			117,70	**310**
SK 40	1 - 10	130	22	22	140	28 - 50 (14 - 36)	426E (ER16)			155,90	**410**
SK 40	1 - 10	160	22	22	170	28 - 50 (14 - 36)	426E (ER16)			174,00	**510**

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for collet	Mini lock nut IK Y8 Article no. 84 950 ... EUR		Mini lock nut Y8 Article no. 84 950 ... EUR			Stop screw 2 Y8 Article no. 83 950 ... EUR			Stop screw 1 Y8 Article no. 83 950 ... EUR	
4008E (ER11)			33,15	**041**	M8x1 - SW4	13,53	**340**	M8x1 - SW4	9,93	**336**
426E (ER16)	41,22	**035**	33,15	**034**	M11x1 - SW6	14,08	**341**	M11x1 - SW6	9,93	**337**

Accessories









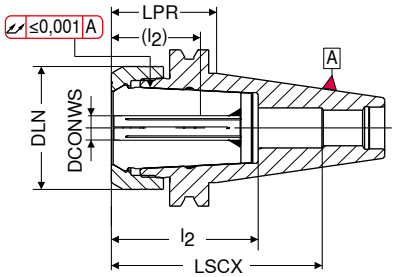
ER collet	Sealing ring	Device	Roll key	Roll key device	Pull studs	Others
→ 208–211, 213	→ 207	→ 17|35	→ 17|36	→ 17|36	→ 48–49	→ 17|34

OZ Precision Collet Chuck

- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P







AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 406 ... EUR	
SK 40	2 - 25	43	50	80	53 - 65 (37 - 48)	462E	110,70	**025**
SK 50	2 - 25	50	50	110	55 - 66 (36 - 50)	462E	211,10	**725**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8  Lock nut IK Article no. 84 950 ... EUR			Y8  Stop screw 2 Article no. 83 950 ... EUR		Y8  Stop screw 1 Article no. 83 950 ... EUR	
for collet							
462E	42,22	**020**	M22x1,5 - SW6	15,90	**402**	M22x1,5 - SW6	11,42	**401**

Accessories


OZ Collet → 217


Sealing ring → 217


Roll key → 17|36


Roll key device → 17|36


Pull studs → 48–49


Others → 17|34

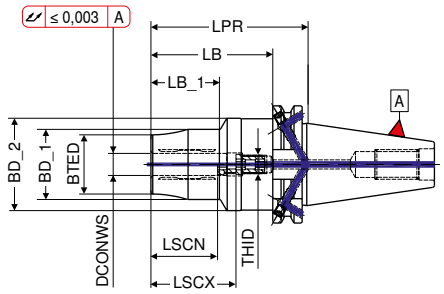
16

High pressure chuck, short version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Article no. 83 422 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR	
short	SK 40	16	90	36	42	50	42	49	39	71	M12x1	415,20	116
	SK 40	20	95	42	48	50	45	51	41	76	M16x1	370,10	120
	SK 40	25	110	51	57	50	60	57	47	91	M16x1	415,20	125
	SK 40	32	120	57	63	50	65	61	51	101	M16x1	415,20	132

→ Min clamping depth, page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

Y7



Clamping key - T

Y7



Pressure pin

Y7



Pressure screw

Y7



Stop screw IK

Spare parts DCONWS		Article no. 80 397 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
16	SW5	4,24	050	Ø5 x 16	3,03	433	TR10x1,5x14	13,74	430	M12x1x18	7,16	446
20	SW5	4,24	050	Ø6 x 16	3,18	434	TR10x1,5x14	13,74	430	M16x1x18,5	7,88	448
25	SW5	4,24	050	Ø6 x 16	3,18	434	TR10x1,5x14	13,74	430	M16x1x22	12,48	449
32	SW5	4,24	050	Ø6 x 16	3,18	434	TR10x1,5x14	13,74	430	M16x1x25	15,52	450

Accessories



Reduction sleeve
→ 17|32



Pull studs
→ 48–49

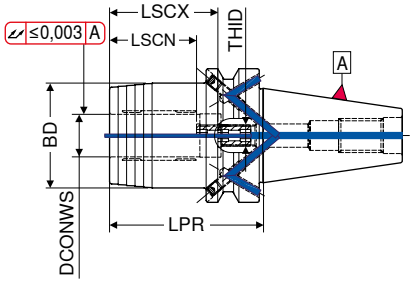


Others
→ 17|34

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 427 ... EUR	
	mm	mm	mm	mm	mm			
SK 40	20	64,5	49	51	40	M16x1x13,5	241,20	**120**

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

Spare parts		Y7 Cylindrical screw Article no. 83 950 ... EUR			Y7 Clamping key – T Article no. 80 397 ... EUR			Y7 Pressure screw Article no. 83 950 ... EUR			Y7 Stop screw IK Article no. 83 950 ... EUR	
83 427 120	M5x5 - SW2,5	1,85	**157**	SW5	4,24	**050**	M10x1x14	4,28	**429**	M16x1x13,5 - SW8	9,34	**424**

Accessories


Reduction sleeve
→ 17|32


Pull studs
→ 48–49

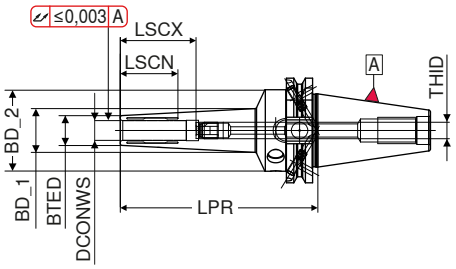

Others
→ 17|34

High pressure chuck, slim 3°

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:

Base body with backstop screw, pressure screw and screw plug







AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LSCX	LSCN	THID	Article no. 83 421 ...	
		mm	mm	mm	mm	mm	mm	mm		EUR	
long	SK 40	3	120	9	17,40	49,5	28	12	M3	417,40	103
	SK 40	4	120	10	18,40	49,5	28	16	M3	417,40	104
	SK 40	5	120	11	19,40	49,5	28	20	M3	417,40	105
	SK 40	6	120	12	20,40	49,5	37	27	M5	355,40	106
	SK 40	8	120	14	22,40	49,5	37	27	M6	355,40	108
	SK 40	10	120	16	24,50	49,5	41	31	M8x1	355,40	110
	SK 40	12	120	18	26,60	49,5	46	36	M10x1	355,40	112
	SK 40	16	120	24	32,30	49,5	49	39	M12x1	575,60	116
	SK 40	20	120	28	36,40	49,5	51	41	M16x1	575,60	120
	SK 40	6	160	16	34,37	49,5	37	27	M5	512,80	206
	SK 40	8	160	18	35,45	49,5	37	27	M6	512,80	208
	SK 40	10	160	20	37,10	49,5	41	31	M8x1	512,80	210
	SK 40	12	160	22	38,72	49,5	46	36	M10x1	512,80	212
	SK 40	6	200	16	38,72	49,5	37	27	M5	607,10	306
	SK 40	8	200	18	39,74	49,5	37	27	M6	607,10	308
	SK 40	10	200	20	41,40	49,5	41	31	M8x1	607,10	310
	SK 40	12	200	22	43,02	49,5	46	36	M10x1	607,10	312

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

Y7



Cylindrical screw

Y7



Clamping key - T

Y7



Pressure screw

Y7



Stop screw IK

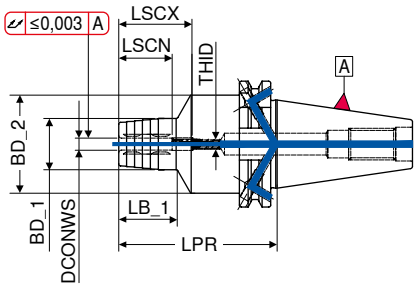
Spare parts for Article no.		Article no. 83 950 ... EUR			Article no. 80 397 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
83 421 103	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 421 104	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 421 105	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 421 106	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 421 108	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 421 110	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 421 112	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421
83 421 116	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M12x1x13,5 - SW5	8,11	422
83 421 120	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M16x1x13,5 - SW8	9,34	424
83 421 206	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 421 208	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 421 210	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 421 212	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 421 306	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 421 308	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 421 310	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 421 312	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420

Hydraulic chuck, short and slim version

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS mm	LPR mm	BD_1 mm	BD_2 mm	LSCX mm	LSCN mm	LB_1 mm	THID	Article no. 83 402 ... EUR	
short and slim	SK 40	6	80,5	26	49,5	37	27	29,5	M5	368,10	106
	SK 40	8	80,5	28	49,5	37	27	30,0	M6	368,10	108
	SK 40	10	80,5	30	49,5	41	31	35,0	M8x1	368,10	110
	SK 40	12	80,5	32	49,5	46	36	40,0	M10x1	319,80	112
	SK 40	16	80,5	38	49,5	49	39	45,0	M12x1	368,10	116
	SK 40	20	80,5	42	49,5	51	41	47,0	M16x1	319,80	120
	SK 40	25	80,5	55	63,0	57	47	28,0	M16x1	368,10	125
	SK 40	32	80,5	63	70,0	61	51	25,5	M16x1	368,10	132
	SK 50	6	80,5	26	49,5	37	27	29,5	M5	514,80	306
	SK 50	8	80,5	28	49,5	37	27	30,0	M6	514,80	308
	SK 50	10	80,5	30	49,5	41	31	35,0	M8x1	514,80	310
	SK 50	12	80,5	32	49,5	46	36	40,0	M10x1	466,70	312
	SK 50	16	80,5	38	49,5	49	39	45,0	M12x1	514,80	316
	SK 50	20	80,5	42	49,5	51	41	42,0	M16x1	466,70	320
	SK 50	25	100,0	55	63,0	57	47	48,0	M16x1	514,80	325
	SK 50	32	100,0	63	70,0	61	51	61,0	M16x1	514,80	332

→ Min. clamping depth, Page 233

Y7



Pressure screw

Y7



Stop screw IK

Y7



Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
6	M8x1x10	5,48	439				M5x12,5 - SW2,5	8,11	418
8	M8x1x10	5,48	439	M6x14 - SW2	8,11	417	M6x12,5 - SW3	8,11	419
10	M10x1x12	5,48	440				M8x1x13,5 - SW3	8,11	420
12	M10x1x12	5,48	440				M10x1x13,5 - SW5	8,11	421
16	M10x1x12	5,48	440				M12x1x13,5 - SW5	8,11	422
20 - 32	M10x1x12	5,48	440				M16x1x13,5 - SW8	9,34	424

Accessories



Reduction sleeve
→ 17|32



Pull studs
→ 48–49



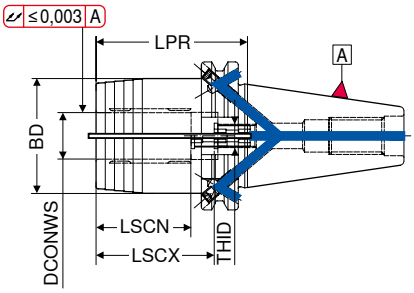
Others
→ 17|34

Hydraulic chuck, short and stable version

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Article no. 83 425 ...	
	mm	mm	mm	mm	mm		EUR	
SK 40	20	64,5	49,5	51	41	M16x1	205,50	120
SK 50	32	81,0	72,0	61	51	M16x1	258,00	332

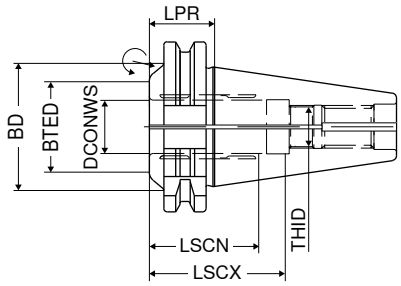
→ Min. clamping depth, Page 233

Hydraulic chuck, extra short

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 83 403 ...	
	mm	mm	mm	mm	mm	mm		EUR	
SK 40	20	24,5	34	48	51	41	M16x1	295,70	120

→ Min. clamping depth, Page 233

Y7



Pressure screw

Y7



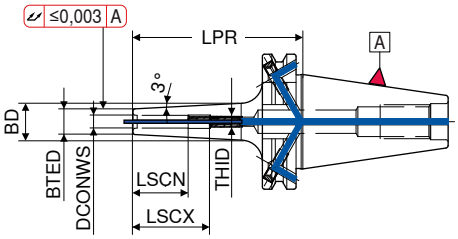
Stop screw IK

Spare parts DCONWS		Article no. 83 950 ...			Article no. 83 950 ...	
		EUR			EUR	
20 - 32	M10x1x12	5,48	440	M16x1x13,5 - SW8	9,34	424

Heat shrink adapter, slim 3°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG







AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 84 320 ...	
		mm	mm	mm	mm	mm	mm		EUR	
short	SK 40	3	80	9	14	28	12	M6	152,10	103
	SK 40	4	80	10	15	28	16	M6	147,90	104
	SK 40	5	80	11	16	30	20	M6	147,90	105
	SK 40	6	80	12	17	36	26	M5	128,90	106
	SK 40	8	80	14	19	36	26	M6	128,90	108
	SK 40	10	80	16	21	41	31	M8x1	128,90	110
	SK 40	12	80	18	23	47	37	M10x1	128,90	112
	SK 40	14	80	20	26	47	37	M10x1	128,90	114
	SK 40	16	80	22	28	50	40	M12x1	128,90	116
	SK 40	18	80	24	30	50	40	M12x1	128,90	118
	SK 40	20	80	26	32	52	42	M16x1	128,90	120
long	SK 40	3	120	9	16	12	12		170,90	203
	SK 40	4	120	10	17	16	16		165,70	204
	SK 40	5	120	11	18	20	20		165,70	205
	SK 40	6	120	12	22	36	26	M5	148,90	206
	SK 40	8	120	14	24	36	26	M6	148,90	208
	SK 40	10	120	16	26	41	31	M8x1	148,90	210
	SK 40	12	120	18	28	47	37	M10x1	148,90	212
	SK 40	14	120	20	30	47	37	M10x1	148,90	214
	SK 40	16	120	22	32	50	40	M12x1	148,90	216
	SK 40	18	120	24	34	50	40	M12x1	148,90	218
	SK 40	20	120	26	36	52	42	M16x1	148,90	220
extra-long	SK 40	3	160	9	19	12	12		192,90	303
	SK 40	4	160	10	20	16	16		188,70	304
	SK 40	5	160	11	21	20	20		188,70	305
	SK 40	6	160	12	24	36	26	M5	172,00	306
	SK 40	8	160	14	26	36	26	M6	172,00	308
	SK 40	10	160	16	28	41	31	M8x1	172,00	310
	SK 40	12	160	18	30	47	37	M10x1	172,00	312
	SK 40	14	160	20	32	47	37	M10x1	172,00	314
	SK 40	16	160	22	34	50	40	M12x1	172,00	316
	SK 40	18	160	24	36	50	40	M12x1	172,00	318
	SK 40	20	160	26	38	52	42	M16x1	172,00	320

→ Min. clamping depth, Page 233

Y7



Stop screw IK

Y7



Stop screw IK

Spare parts DCONWS

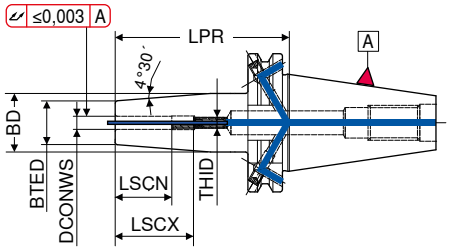
		Article no. 83 950 ...			Article no. 83 950 ...	
		EUR			EUR	
3 - 5	M6x14 - SW2	8,11	417			
6				M5x12,5 - SW2,5	8,11	418
8				M6x12,5 - SW3	8,11	419
10				M8x1x13,5 - SW3	8,11	420
12 - 14				M10x1x13,5 - SW5	8,11	421
16 - 18				M12x1x13,5 - SW5	8,11	422
20				M16x1x13,5 - SW8	9,34	424

16

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG







AD/B
G 2,5 n_{max} 25000
Y8



AD
G 2,5 n_{max} 25000
Y8

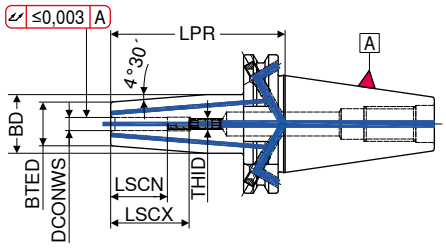
	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 300 ...		Article no. 84 300 ...	
		mm	mm	mm	mm	mm	mm		EUR		EUR	
short	SK 30	3	80	10	17	22	12	M6			149,90	003
	SK 30	4	80	15	22	26	16	M6			145,70	004
	SK 30	5	80	15	22	30	20	M6			145,70	005
	SK 30	6	80	21	27	36	26	M5			126,90	006
	SK 30	8	80	21	27	36	26	M6			126,90	008
	SK 30	10	80	24	32	41	31	M8x1			126,90	010
	SK 30	12	80	24	32	47	37	M10x1			126,90	012
	SK 30	14	80	27	34	47	37	M10x1			126,90	014
	SK 30	16	80	27	34	50	40	M12x1			126,90	016
	SK 30	18	80	33	42	50	40	M12x1			126,90	018
	SK 30	20	80	33	42	52	42	M16x1			126,90	020
	SK 40	3	80	10	17	22	12	M6	111,10	103		
	SK 40	4	80	15	22	26	16	M6	111,10	104		
	SK 40	5	80	15	22	30	20	M6	111,10	105		
	SK 40	6	80	21	27	36	26	M5	105,90	106		
	SK 40	8	80	21	27	26	26	M6	105,90	108		
	SK 40	10	80	24	32	41	31	M8x1	105,90	110		
	SK 40	12	80	24	32	47	37	M10x1	105,90	112		
	SK 40	14	80	27	34	47	37	M10x1	105,90	114		
	SK 40	16	80	27	34	50	40	M12x1	105,90	116		
	SK 40	18	80	33	42	50	40	M12x1	105,90	118		
	SK 40	20	80	33	42	52	42	M16x1	105,90	120		
	SK 40	25	100	44	53	58	48	M16x1	105,90	125		
long	SK 40	3	120	10	20	12	12		133,20	203		
	SK 40	4	120	15	22	16	16		133,20	204		
	SK 40	5	120	15	22	20	20		133,20	205		
	SK 40	6	120	21	27	36	26	M5	133,20	206		
	SK 40	8	120	21	27	36	26	M6	133,20	208		
	SK 40	10	120	24	32	41	31	M8x1	133,20	210		
	SK 40	12	120	24	32	47	37	M10x1	133,20	212		
	SK 40	14	120	27	34	47	37	M10x1	133,20	214		
	SK 40	16	120	27	34	50	40	M12x1	133,20	216		
	SK 40	18	120	33	42	50	40	M12x1	133,20	218		
	SK 40	20	120	33	42	52	42	M16x1	133,20	220		
	SK 40	25	120	44	53	58	48	M16x1	134,20	225		
extra-long	SK 40	3	160	10	20	12	12		182,40	303		
	SK 40	4	160	15	22	16	16		178,20	304		
	SK 40	5	160	15	22	20	20		178,20	305		
	SK 40	6	160	21	27	36	26	M5	159,40	306		
	SK 40	8	160	21	27	36	26	M6	159,40	308		
	SK 40	10	160	24	32	41	31	M8x1	159,40	310		
	SK 40	12	160	24	32	47	37	M10x1	159,40	312		
	SK 40	14	160	27	34	47	37	M10x1	159,40	314		
	SK 40	16	160	27	34	50	40	M12x1	159,40	316		
	SK 40	18	160	33	42	50	40	M12x1	159,40	318		
	SK 40	20	160	33	42	52	42	M16x1	159,40	320		
	SK 40	25	160	44	53	58	48	M16x1	159,40	325		

→ Min. clamping depth, Page 233

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG







AD/B
G 2,5 n_{max} 25000

NEW Y8

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	Article no. 84 317 ... EUR	
short	SK 40	3	80	10	17	28	12	M6	162,60	103
	SK 40	4	80	15	22	28	16	M6	157,30	104
	SK 40	5	80	15	22	30	20	M6	157,30	105
	SK 40	6	80	21	27	36	26	M5	138,40	106
	SK 40	8	80	21	27	36	26	M6	138,40	108
	SK 40	10	80	24	32	41	31	M8x1	138,40	110
	SK 40	12	80	24	32	47	37	M10x1	138,40	112
	SK 40	14	80	27	34	47	37	M10x1	138,40	114
	SK 40	16	80	27	34	50	40	M12x1	138,40	116
	SK 40	18	80	33	42	50	40	M12x1	138,40	118
	SK 40	20	80	33	42	52	42	M16x1	138,40	120
	SK 40	25	100	44	53	58	48	M16x1	138,40	125
	SK 40	32	100	44	53	62	52	M16x1	138,40	132

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth



Stop screw IK



Stop screw IK



Sealing screw

Spare parts DCONWS		Y7 Article no. 83 950 ... EUR			Y7 Article no. 83 950 ... EUR			Y7 Article no. 83 950 ... EUR		
3 - 5	M6x14 - SW2	8,11	417					M2x6	0,48	512
6				M5x12,5 - SW2,5	8,11	418		M2x6	0,48	512
8				M6x12,5 - SW3	8,11	419		M2x6	0,48	512
10				M8x1x13,5 - SW3	8,11	420		M2x6	0,48	512
12 - 14				M10x1x13,5 - SW5	8,11	421		M2x6	0,48	512
16 - 18				M12x1x13,5 - SW5	8,11	422		M2x6	0,48	512
20 - 25				M16x1x13,5 - SW8	9,34	424		M2x6	0,48	512
32	M16x1 - SW5	4,81	511					M2x6	0,48	512

Accessories



Shrink fit extension
→ 17|10



Pull studs
→ 48–49



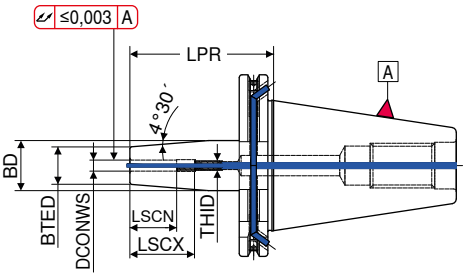
Others
→ 17|34

16

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG







AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 84 301 ...	
		mm	mm	mm	mm	mm	mm		EUR	
short	SK 50	6	80	21	27	36	26	M5	179,40	106
	SK 50	8	80	21	27	36	26	M6	179,40	108
	SK 50	10	80	24	32	41	31	M8x1	179,40	110
	SK 50	12	80	24	32	47	37	M10x1	179,40	112
	SK 50	14	80	27	34	47	37	M10x1	179,40	114
	SK 50	16	80	27	34	50	40	M12x1	179,40	116
	SK 50	18	80	33	42	50	40	M12x1	179,40	118
	SK 50	20	80	33	42	52	42	M16x1	179,40	120
	SK 50	25	100	44	53	58	48	M16x1	179,40	125
	SK 50	32	100	44	53	62	52	M16x1	179,40	132
long	SK 50	6	120	21	27	36	26	M5	196,10	206
	SK 50	8	120	21	27	36	26	M6	196,10	208
	SK 50	10	120	24	32	41	31	M8x1	196,10	210
	SK 50	12	120	24	32	47	37	M10x1	196,10	212
	SK 50	14	120	27	34	47	37	M10x1	196,10	214
	SK 50	16	120	27	34	50	40	M12x1	196,10	216
	SK 50	18	120	33	42	50	40	M12x1	196,10	218
	SK 50	20	120	33	42	52	42	M16x1	196,10	220
	SK 50	25	120	44	53	58	48	M16x1	196,10	225
	SK 50	32	120	44	53	62	52	M16x1	196,10	232
extra-long	SK 50	6	160	21	27	36	26	M5	219,20	306
	SK 50	8	160	21	27	36	26	M6	219,20	308
	SK 50	10	160	24	32	41	31	M8x1	219,20	310
	SK 50	12	160	24	32	47	37	M10x1	219,20	312
	SK 50	14	160	27	34	47	37	M10x1	219,20	314
	SK 50	16	160	27	34	50	40	M12x1	219,20	316
	SK 50	18	160	33	42	50	40	M12x1	219,20	318
	SK 50	20	160	33	42	52	42	M16x1	219,20	320
	SK 50	25	160	44	53	58	48	M16x1	219,20	325
	SK 50	32	160	44	53	62	52	M16x1	219,20	332

→ Min. clamping depth, Page 233

Y7



Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR	
6	M5x12,5 - SW2,5	8,11	418
8	M6x12,5 - SW3	8,11	419
10	M8x1x13,5 - SW3	8,11	420
12 - 14	M10x1x13,5 - SW5	8,11	421
16 - 18	M12x1x13,5 - SW5	8,11	422
20 - 32	M16x1x13,5 - SW8	9,34	424

Accessories



Shrink fit extension
→ 17|10



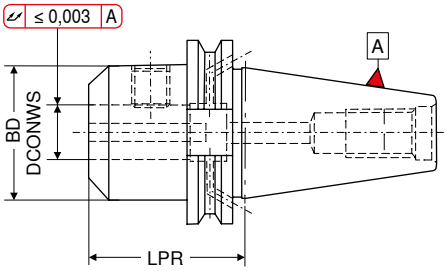
Pull studs
→ 48–49



Others
→ 17|34

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat





	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 402 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 402 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 82 401 ...		ADe G 6,3 n_{max} 8000 Y8 Article no. 82 403 ...	
		mm	mm	mm	EUR		EUR		EUR		EUR	
short	SK 30	6	50	25	82,21	006						
	SK 30	8	50	28	74,87	008						
	SK 30	10	50	35	74,87	010						
	SK 30	12	50	42	74,87	012						
	SK 30	14	63	44	74,87	014						
	SK 30	16	63	48	74,87	016						
	SK 30	18	63	50	74,87	018						
	SK 30	20	70	52	89,65	020						
extra short	SK 40	16	35	48			44,21	416	52,18	416	65,39	416
	SK 40	20	35	50			44,21	420	52,18	420	65,39	420
	SK 40	25	40	50			48,33	425	56,31	425	70,43	425
	SK 40	32	75	72			61,08	432			87,13	432

SK 50 adapters and other lengths can be found on the next 2 pages

Spare parts DCONWS $_{H4}$	Y8 Grubscrew Article no. 83 950 ... EUR		W7 Grubscrew Article no. 62 950 ... EUR	
6			M6x10	0,66 006
8			M8x10	0,77 008
10			M10x12	1,02 010
12			M12x16	1,03 012
14			M12x16	1,03 012
16			M14x16	1,28 016
18			M14x16	1,28 016
20			M16x16	1,55 020
25	M16x10	0,86 275		
32	M14x10	0,78 259		

Accessories



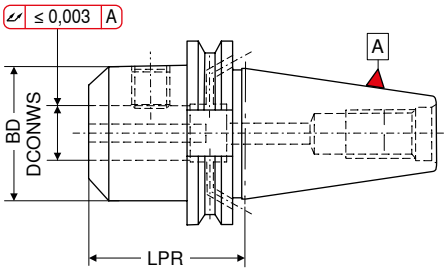
Pull studs
→ 48–49



Others
→ 17|34

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



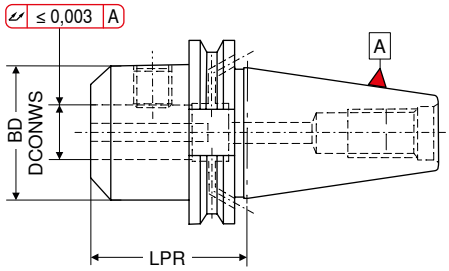


	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 402 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 401 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 81 403 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 82 403 ...		AD/Be G 2,5 n_{max} 18000 Y8 Article no. 82 404 ...	
		mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
short	SK 40	6	50	25	40,91	106	48,88	106			57,78	106	65,75	106
	SK 40	8	50	28	40,91	108	48,88	108			57,78	108	65,75	108
	SK 40	10	50	35	38,61	110	46,59	110			55,40	110	63,37	110
	SK 40	12	50	42	38,61	112	46,59	112			55,40	112	63,37	112
	SK 40	14	50	44	38,61	114	46,59	114			55,40	114	63,37	114
	SK 40	16	63	48	41,82	116	49,80	116			63,10	116	71,07	116
	SK 40	18	63	50	41,82	118	49,80	118			63,10	118	71,07	118
	SK 40	20	63	52	41,82	120	49,80	120			63,10	120	71,07	120
	SK 40	25	100	65	45,86	125	53,74	125			67,13	125	75,02	125
	SK 40	32	100	72	49,89	132	57,96	132			73,83	132		
	SK 40	40	120	90	54,57	140								
	SK 50	6	63	25	61,53	306	69,43	306			89,78	306		
	SK 50	8	63	28	61,53	308	69,43	308			88,96	308		
	SK 50	10	63	35	58,88	310	66,86	310			82,26	310		
	SK 50	12	63	42	58,88	312	66,86	312			82,26	312		
	SK 50	14	63	44	58,88	314	66,86	314			82,26	314		
	SK 50	16	63	48	59,06	316	67,04	316			89,78	316		
	SK 50	18	63	50	59,06	318	67,04	318			89,78	318		
	SK 50	20	63	52	59,06	320	67,04	320			89,78	320		
	SK 50	25	80	65	64,57	325	72,45	325			96,30	325		
	SK 50	32	100	72	65,48	332	73,55	332			100,90	332		
	SK 50	40	120	90	68,33	340								
long	SK 40	6	100	25	42,64	506	50,54	506	69,20	506				
	SK 40	8	100	28	42,64	508	50,54	508	69,20	508				
	SK 40	10	100	35	40,26	510	48,24	510	66,27	510				
	SK 40	12	100	42	40,26	512	48,24	512	66,27	512				
	SK 40	14	100	44	39,99	514	47,96	514	66,27	514				
	SK 40	16	100	48	44,21	516	52,18	516	75,50	516				
	SK 40	18	100	50	44,02	518	51,91	518	75,50	518				
	SK 40	20	100	52	44,21	520	52,18	520	75,50	520				
	SK 40	40	120	80					96,05	540				
	SK 50	6	100	25	68,14	706								
	SK 50	8	100	28	68,14	708								
	SK 50	10	100	35	65,39	710								
	SK 50	12	100	42	65,39	712								
	SK 50	14	100	44	65,39	714								
	SK 50	16	100	48	65,57	716								
	SK 50	18	100	50	65,57	718								
	SK 50	20	100	52	65,57	720								
	SK 50	25	100	65	69,43	725								

Spare parts and accessories on → **page 23**

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



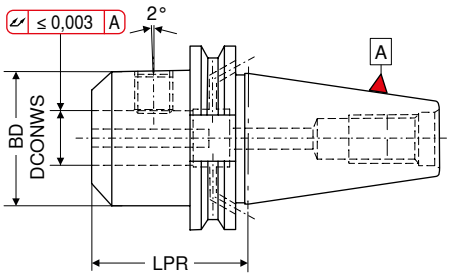


	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000		AD/B G 2,5 n_{max} 18000		AD/Be G 6,3 n_{max} 8000		AD/Be G 2,5 n_{max} 18000	
					Y8		Y8		Y8		Y8	
					Article no. 82 402 ...		Article no. 82 401 ...		Article no. 82 403 ...		Article no. 82 404 ...	
		mm	mm	mm	EUR		EUR		EUR		EUR	
medium length	SK 40	6	130	25	47,14	206	55,49	206			73,55	206
	SK 40	8	130	28	47,14	208	55,49	208			73,55	208
	SK 40	10	130	35	44,39	210	52,73	210			70,98	210
	SK 40	12	130	42	44,39	212	52,73	212			70,98	212
	SK 40	14	130	44	44,39	214	52,73	214			70,98	214
	SK 40	16	130	48	45,22	216	53,19	216			76,21	216
	SK 40	18	130	50	45,22	218	53,19	218			76,21	218
	SK 40	20	130	52	45,22	220	53,19	220			76,21	220
	SK 50	6	130	25	73,46	906			91,71	906		
	SK 50	8	130	28	73,46	908			91,71	908		
	SK 50	10	130	35	72,08	910			90,09	910		
	SK 50	12	130	42	72,08	912			90,09	912		
	SK 50	14	130	44	72,08	914			90,09	914		
	SK 50	16	130	48	72,18	916			95,40	916		
	SK 50	18	130	50	72,18	918			95,40	918		
	SK 50	20	130	52	72,18	920			95,40	920		
	SK 50	25	130	65	74,11	925			97,20	925		
extra-long	SK 40	6	160	25	49,07	606	57,04	606				
	SK 40	8	160	28	49,07	608	57,04	608				
	SK 40	10	160	35	46,49	610	54,48	610				
	SK 40	12	160	42	46,49	612	54,48	612				
	SK 40	14	160	44	46,49	614	54,48	614				
	SK 40	16	160	48	46,68	616	54,75	616				
	SK 40	18	160	50	46,68	618	54,75	618				
	SK 40	20	160	52	46,68	620	54,75	620				
	SK 40	25	160	65	49,89	625	57,96	625				
	SK 50	6	160	25	76,39	806						
	SK 50	8	160	28	76,39	808						
	SK 50	10	160	35	76,21	810						
	SK 50	12	160	42	76,21	812						
	SK 50	14	160	44	76,21	814						
	SK 50	16	160	48	76,67	816						
	SK 50	18	160	50	76,67	818						
	SK 50	20	160	52	76,67	820						
	SK 50	25	160	65	76,48	825						
	SK 50	32	160	72	76,85	832						

Spare parts and accessories on → **page 23**

Cylindrical Shank Adapter (Whistle Notch)

- For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
- The groove in the flat face is a characteristic feature of the Whistle Notch version





	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 406 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 407 ...	
		mm	mm	mm	EUR		EUR	
short	SK 40	6	50	25	50,45	106	59,34	106
	SK 40	8	50	28	50,45	108	59,34	108
	SK 40	10	50	35	46,77	110	55,76	110
	SK 40	12	50	42	46,77	112	55,76	112
	SK 40	14	50	44	46,77	114	55,76	114
	SK 40	16	63	48	51,35	116	60,26	116
	SK 40	18	63	50	51,35	118	60,26	118
	SK 40	20	63	52	51,35	120	60,26	120
	SK 40	25	100	65	65,30	125		
	SK 40	32	100	72	61,35	132		
	SK 50	6	63	25	86,11	306		
	SK 50	8	63	28	86,11	308		
	SK 50	10	63	35	82,26	310		
	SK 50	12	63	42	82,26	312		
	SK 50	14	63	44	82,26	314		
	SK 50	16	63	48	82,72	316		
	SK 50	18	63	50	82,72	318		
	SK 50	20	63	52	82,72	320		
	SK 50	25	80	65	90,27	325		
	SK 50	32	100	72	91,71	332		
medium length	SK 40	6	130	25	63,56	206	72,45	206
	SK 40	8	130	28	63,56	208	72,45	208
	SK 40	10	130	35	59,89	210	68,88	210
	SK 40	12	130	42	59,89	212	68,88	212
	SK 40	16	130	48	63,92	216	72,82	216
	SK 40	20	130	52	63,92	220	72,82	220
	SK 40	25	130	65	76,48	225	89,33	225
	SK 50	6	130	25	99,99	406		
	SK 50	8	130	28	99,99	408		
	SK 50	10	130	35	96,30	410		
	SK 50	12	130	42	96,30	412		
	SK 50	16	130	48	97,20	416		
	SK 50	20	130	52	97,20	420		
	SK 50	25	130	65	101,80	425		
	SK 50	32	130	72	101,80	432		

Spare parts cylindrical shank adapters (Whistle Notch)

Spare parts DCONWS $_{H4}$		W7 Grubscrew Article no. 62 950 ... EUR			Y8 Stop screw IK Article no. 83 950 ... EUR	
6	M6x10	0,66	006	M5x35	1,83	033
8	M8x10	0,77	008	M6x35	1,50	034
10	M10x12	1,02	010	M8x35	1,63	035
12 - 14	M12x16	1,03	012	M10x35	1,63	036
16 - 18	M14x16	1,28	016	M12x40	2,00	037
20	M16x16	1,55	020	M16x45	2,25	272
25	M18x2x20	2,84	025	M20x35	2,50	290
32	M20x2x20	3,15	032	M20x35	2,50	290

Accessories



Pull studs

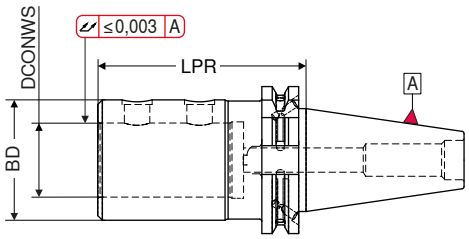
→ 48–49



Others

→ 17|34

Indexable insert drill adapter DIN 69871 SK







AD/B
G 6,3 n_{max} 15000

2E/45

Adapter	DCONWS	LPR	BD	Article no. 10 840 ...	
	mm	mm	mm	EUR	
SK 40	20	80	40	129,30	**120**
SK 40	25	85	45	129,30	**125**
SK 40	32	90	52	129,30	**132**
SK 50	20	80	40	164,30	**220**
SK 50	25	85	45	164,30	**225**
SK 50	32	90	52	164,30	**232**
SK 50	40	90	65	164,30	**240**
SK 50	50	100	75	164,30	**250**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling.**

2A/28



Grubscrew

Spare parts DCONWS		Article no. 10 950 ...	
		EUR	
20	M10x1x10	3,84	**001**
25 - 32	M12x1x10	3,84	**002**
40 - 50	M16x1x12	3,84	**003**

Accessories



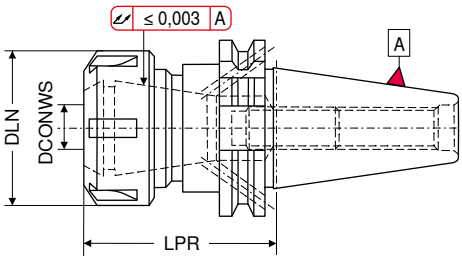
Pull studs
→ 48–49



Others
→ 17|34

ER Collet chuck

Scope of supply:
Holder with lock nut and adjustable back stop





	Adapter	DCONWS	LPR	DLN	TQX	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 414 ...		AD/B G 6,3 n_{max} 12000 Y8 Article no. 81 414 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 414 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 415 ...	
		mm	mm	mm	Nm		EUR		EUR		EUR		EUR	
short	SK 30	1 - 10	70	28	8 - 56	426E (ER16)	84,83	010						
	SK 30	1 - 16	70	42	24 - 104	430E (ER25)	84,83	016						
	SK 30	2 - 20	70	50	24 - 136	470E (ER32)	84,83	020						
	SK 40	1 - 10	60	32	8 - 56	426E (ER16)					57,13	110	65,94	110
	SK 40	1 - 16	70	42	24 - 104	430E (ER25)					59,71	116	68,69	116
	SK 40	2 - 20	70	50	24 - 136	470E (ER32)					59,89	120	68,88	120
	SK 40	3 - 26	70	63	176	472E (ER40)					62,27	126	71,26	126
	SK 50	1 - 10	60	32	8 - 56	426E (ER16)					77,13	310		
	SK 50	1 - 16	70	42	24 - 104	430E (ER25)					80,33	316		
	SK 50	2 - 20	70	50	24 - 136	470E (ER32)					81,71	320		
	SK 50	3 - 26	70	63	176	472E (ER40)					83,64	326		
long	SK 30	1 - 10	100	28	8 - 56	426E (ER16)	118,50	210						
	SK 30	1 - 16	100	42	24 - 104	430E (ER25)	118,50	216						
	SK 30	2 - 20	100	50	24 - 136	470E (ER32)	118,50	220						
	SK 40	1 - 10	120	32	8 - 56	426E (ER16)					62,64	410	71,53	410
	SK 40	1 - 16	120	42	24 - 104	430E (ER25)					65,21	416	74,20	416
	SK 40	2 - 20	120	50	24 - 136	470E (ER32)					65,39	420	74,38	420
	SK 40	3 - 26	100	63	176	472E (ER40)			78,53	426				
	SK 50	1 - 10	100	32	8 - 56	426E (ER16)					74,11	510		
	SK 50	1 - 16	100	42	24 - 104	430E (ER25)					77,13	516		
	SK 50	2 - 20	100	50	24 - 136	470E (ER32)					82,08	520		
	SK 50	3 - 26	100	63	176	472E (ER40)					86,11	526		
extra-long	SK 40	1 - 10	160	28	8 - 56	426E (ER16)			97,93	610				
	SK 40	2 - 16	160	42	24 - 104	430E (ER25)			97,93	616				
	SK 40	2 - 20	160	50	24 - 136	470E (ER32)			97,93	620				
	SK 40	3 - 26	160	63	176	472E (ER40)			113,30	626				
	SK 50	1 - 16	160	42	24 - 104	430E (ER25)					84,01	616		
	SK 50	2 - 20	160	50	24 - 136	470E (ER32)					92,61	620		

Spare parts	W7 Lock nut Article no. 62 950 ...		Y8 Lock nut IK Article no. 83 950 ...		W7 Lock nut Article no. 62 950 ...		Y8 Y clamping key Article no. 83 357 ...		Y8 Stop screw IK Article no. 81 950 ...		Y8 Stop screw IK Article no. 83 950 ...	
for collet	EUR		EUR		EUR		EUR		EUR		EUR	
426E (ER16) / SK30-SK50	17,82	044			17,82	054	16,04	116	1,63	053		
430E (ER25) / SK30			34,72	055	19,92	055	17,72	125	2,00	054		
430E (ER25) / SK40, SK50			34,72	055	19,92	055	17,72	125	2,25	055	2,00	010
470E (ER32) / SK30			36,95	056	18,56	056	24,12	132	1,63	053		
470E (ER32) / SK40, SK50			36,95	056	18,56	056	24,12	132	3,44	057	2,00	010
472E (ER40) / SK40, SK50			43,57	057	18,04	057	26,53	140	2,00	054	2,25	011

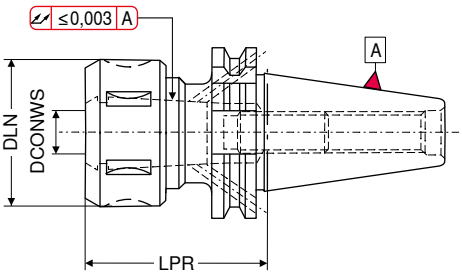
Backstop screws 81 950 ... and nut 62 950 044 only for use with article 81 414 ...!

16

OZ Collet Chuck

▲ Clamping nut with ball bearings

Scope of supply:
Holder with lock nut and adjustable back stop





	Adapter	DCONWS	LPR	DLN	TQX	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 410 ...		AD/B G 6,3 n_{max} 12000 Y8 Article no. 81 410 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 410 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 411 ...	
		mm	mm	mm	Nm		EUR		EUR		EUR		EUR	
short	SK 30	2 - 16	60	43	24 - 104	415E / 421E	84,83	016						
	SK 30	2 - 25	80	60	24 - 176	459E / 462E	88,08	025						
	SK 40	2 - 16	70	43	80 - 90	415E / 421E					71,53	116	80,52	116
	SK 40	2 - 25	70	60	90 - 100	459E / 462E					74,75	125	83,73	125
	SK 50	2 - 16	70	43	80 - 90	415E / 421E					94,50	225		
	SK 50	2 - 25	70	60	90 - 100	459E / 462E					105,50	232		
	SK 50	4 - 32	70	72	110 - 120	460E / 467E					114,70	240		
long	SK 40	2 - 16	120	43	80 - 90	415E / 421E					76,03	416	85,01	416
	SK 40	2 - 25	120	60	90 - 100	459E / 462E					79,06	425	88,04	425
	SK 40	4 - 32	100	72	227	460E / 467E			92,59	432				
	SK 50	2 - 16	100	43	80 - 90	415E / 421E					99,09	525		
	SK 50	2 - 25	100	60	90 - 100	459E / 462E					105,50	532		

Spare parts		W7 Lock nut Article no. 62 950 ...		Y8 Hook clamping key Article no. 83 354 ...			Y8 Stop screw IK Article no. 81 950 ...			Y8 Stop screw IK Article no. 83 950 ...	
for collet		EUR		EUR			EUR			EUR	
415E / 421E	M33x1,5	31,56	050	7,84	116	M16x15	2,25	055	M10x50	2,00	010
459E / 462E	M48x2	34,71	051	10,69	125	M16x15	2,25	055	M10x50	2,00	010
460E / 467E	M60x2,5	43,41	052	11,96	132	M16x15	2,25	055	M12x50	2,25	011

Spare part 81 950 ... only use for article 81 410 ...!

Accessories





OZ Collet → 218
Pull studs → 48–49
Others → 17|34

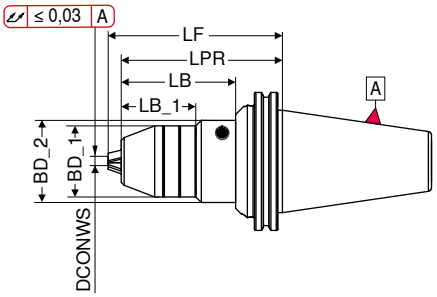
Short drill chuck

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm

Scope of supply:

Toolholder including clamping key SW4

NC 2010





Adapter	DCONWS	LPR	BD_1	BD_2	LB_1	LB	LF	A G 6,3 n_{max} 10000 Y8 Article no. 84 418 ... EUR		AD G 6,3 n_{max} 10000 Y8 Article no. 84 419 ... EUR		AD/B G 6,3 n_{max} 10000 Y8 Article no. 84 420 ... EUR	
	mm	mm	mm	mm	mm	mm	mm						
SK 30	0,5 - 10	80	43,0			59,9	89,0	270,50	**313**				
SK 40	0,5 - 13	80	48,5			60,8	89,0	207,70	**413**	221,20	**413**		
SK 40	0,5 - 13	80	48,5		50,9		89,0					248,50	**413**
SK 40	2,5 - 16	80	51,0			60,0	90,5			241,20	**416**		
SK 40	2,5 - 16	80	51,0			60,8	90,5	221,20	**416**				
SK 40	2,5 - 16	80	51,0		50,9		90,5					262,20	**416**
SK 50	0,5 - 13	110	48,5	56	50,9	78,0	119,0			280,00	**513**		
SK 50	0,5 - 13	110	48,5	56	50,9	78,1	119,0	270,50	**513**				
SK 50	2,5 - 16	110	51,0	56	50,9	78,0	120,5			280,00	**516**		
SK 50	2,5 - 16	110	56,0		50,9	78,0	120,5	274,70	**516**				

Can be used at G 2.5 to 30,000 1/min after additional balancing !

Accessories



Pull studs → 48–49

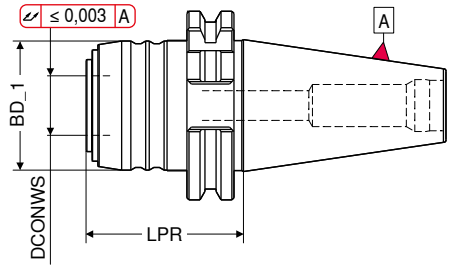


Others → 17|34

Synchro tapping chuck with minimum length compensation

- For collet
- With length compensation under tension and compression (LZD)
- For synchro use
- $p_{max.}$ = 50 bar

Scope of supply:
Without insert





AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 416 ...	
			mm	mm	mm	mm	EUR	
SK 40	M3 - M12	1	53	43	20	1,0 / 0,2	161,50	**012**
SK 40	M6 - M20	2	90	60	32	1,0 / 0,2	209,70	**020**
SK 50	M3 - M12	1	53	43	20	1,0 / 0,2	175,10	**112**
SK 50	M6 - M20	2	74	60	32	1,0 / 0,2	269,50	**120**

Accessories



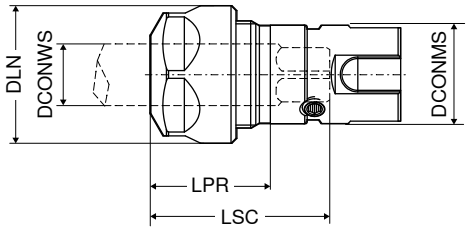
Pull studs
→ 48–49



Others
→ 17|34

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut





AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	EUR	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	110,10	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	127,90	**020**

Spare parts for synchronous tapping chucks

		W7			Y8			W7		Y8	
		 Lock nut			 Lock nut IK			 Lock nut		 Y clamping key	
Spare parts		**Article no. 62 950 ...**			**Article no. 83 950 ...**			**Article no. 62 950 ...**		**Article no. 83 357 ...**	
for Article no.		EUR			EUR			EUR		EUR	
83 608 012	M22x1,5 - SW25	17,82	044	M22x1,5	30,62	054				16,04	116
83 608 020				M32x1,5	34,72	055	M32x1,5	19,92	055	17,72	125

Accessories



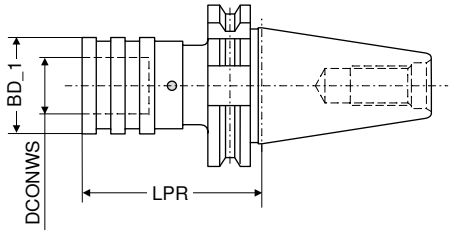
ER collet

→ 212, 214–215

16

Quick change tap chuck with length compensation

▲ With length compensation under tension and compression (LZD)



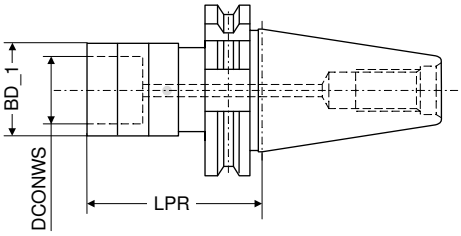




A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 428 ...	
			mm	mm	mm	mm	EUR	
SK 30	M3 - M12	01	60	38	19	9	264,30	**312**
SK 30	M6 - M20	02	101	55	31	15	301,00	**320**
SK 40	M3 - M12	01	60	38	19	9	205,50	**412**
SK 40	M6 - M20	02	100	55	31	15	221,20	**420**
SK 50	M3 - M12	01	62	38	19	9	305,10	**512**
SK 50	M6 - M20	02	83	55	31	15	332,40	**520**

Quick change tap chuck without length compensation







AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	Y8 Article no. 83 423 ...	
			mm	mm	mm	EUR	
SK 30	M3 - M12	01	59	33	19	215,00	**312**
SK 30	M6 - M20	02	80	50	31	215,00	**320**
SK 40	M3 - M12	01	59	33	19	153,10	**412**
SK 40	M6 - M20	02	86	50	31	161,50	**420**
SK 50	M3 - M12	01	75	33	19	202,40	**512**
SK 50	M6 - M20	02	98	50	31	220,20	**520**

Accessories



Collet
→ 219–223



Pull studs
→ 48–49

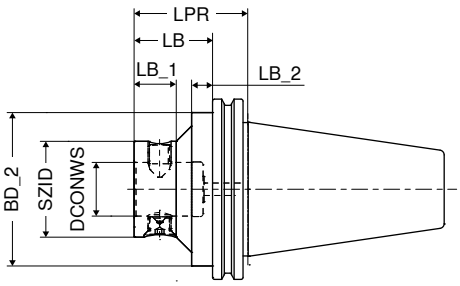


Others
→ 17|34

Adapter with ABS Connection

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS







AD/B
G 6,3 n_{max} 8000

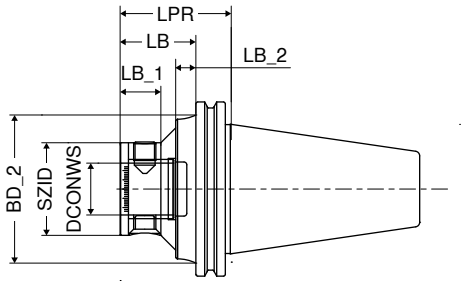
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	LB_2	BD_2	NEW 3E Article no. 84 201 ... EUR	
			mm	mm	mm	mm	mm	mm		
SK 40	A5055150	ABS 50	28	50	30,0				386,90	**04097**
SK 50	A5055350	ABS 50	28	60	40,9	22	10,9	80	452,40	**05097**

Eccentric adjuster with ABS Connection

▲ Adjustment ± 0.25 mm on diameter

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS







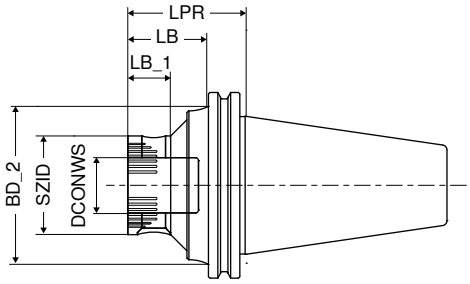
AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	LB_2	BD_2	NEW W4 Article no. 84 204 ... EUR	
			mm	mm	mm	mm	mm	mm		
SK 40	A5056150	ABS 50	28	50	30,0				521,00	**04097**
SK 50	A5056350	ABS 50	28	60	40,9	22	10,9	80	584,50	**05097**

Torsional vibration dampers with ABS Connection

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS






AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	BD_2	LB_1	NEW 3E Article no. 84 207 ... EUR	
			mm	mm	mm	mm	mm		
SK 40	A5001351	ABS 50	28	50	30,0			667,70	**04097**
SK 50	A5001451	ABS 50	28	60	40,9	80	22	744,60	**05097**

Spare parts SZID	XX  Clamping screw Article no. 84 950 ... EUR		XX  Taper screw Article no. 84 950 ... EUR		XX  Set Article no. 84 950 ... EUR	
ABS 50	12,64	**20300**	16,22	**20400**	28,81	**99800**

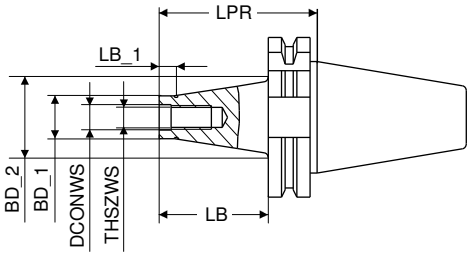
Accessories


Pull studs
→ 48–49


Extension
→ 17|27


Others
→ 17|34

Adapter for milling cutters with threaded end





Adapter	THSZWS	DCONWS	LB	BD_1	BD_2	LB_1	LPR	AD G 16 n_{max} 8000 WA Article no. 56 707 ... EUR		AD G 6,3 n_{max} 18000 WA Article no. 56 705 ... EUR		AD G 2,5 n_{max} 30000 WA Article no. 56 703 ... EUR	
		mm	mm	mm	mm	mm	mm						
SK 30	M8	8,5	25	13,8	18,0	12	44					134,20	**081**
SK 30	M8	8,5	50	13,8	23,0	12	69					156,20	**082**
SK 30	M10	10,5	25	18,0	23,0	12	44					134,20	**101**
SK 30	M10	10,5	50	18,0	25,0	12	69					156,20	**102**
SK 30	M12	12,5	25	21,0	24,0	12	44					134,20	**121**
SK 30	M12	12,5	50	21,0	30,0	12	69					156,20	**122**
SK 30	M16	17,0	25	29,0	30,5	12	44					134,20	**161**
SK 30	M16	17,0	50	29,0	34,0	12	69					156,20	**162**
SK 40	M8	8,5	25	13,8	15,0	12	44			95,32	**081**		
SK 40	M8	8,5	50	13,8	23,0	12	69			102,10	**082**		
SK 40	M8	8,5	75	13,8	25,0	12	94			110,10	**083**		
SK 40	M10	10,5	25	18,0	23,0	12	44			95,32	**101**		
SK 40	M10	10,5	50	18,0	25,0	12	69			102,10	**102**		
SK 40	M10	10,5	75	18,0	30,0	12	94			110,10	**103**		
SK 40	M10	10,5	100	18,0	35,0	12	119			118,50	**104**		
SK 40	M12	12,5	25	21,0	24,0	12	44			95,32	**121**		
SK 40	M12	12,5	50	21,0	30,0	12	69			102,10	**122**		
SK 40	M12	12,5	75	21,0	35,0	12	94			110,10	**123**		
SK 40	M12	12,5	100	21,0	38,0	12	119			118,50	**124**		
SK 40	M16	17,0	25	29,0	29,0	12	44			95,32	**161**		
SK 40	M16	17,0	50	29,0	34,0	12	69			102,10	**162**		
SK 40	M16	17,0	75	29,0	35,0	12	94			110,10	**163**		
SK 40	M16	17,0	100	29,0	40,0	12	119			118,50	**164**		
SK 40	M16	17,0	125	29,0	44,0	12	144			125,90	**165**		
SK 40	M16	17,0	150	29,0	48,0	12	169			134,20	**166**		
SK 40	M16	17,0	200	29,0	50,0	12	219			155,20	**167**		
SK 50	M12	12,5	50	21,0	30,0	12	69	142,60	**122**				
SK 50	M12	12,5	100	21,0	38,0	12	119	162,60	**124**				
SK 50	M12	12,5	150	21,0	52,0	12	169	186,70	**126**				
SK 50	M16	17,0	50	29,0	34,0	12	69	142,60	**162**				
SK 50	M16	17,0	100	29,0	40,0	12	119	162,60	**164**				
SK 50	M16	17,0	150	29,0	48,0	12	169	186,70	**166**				
SK 50	M16	17,0	200	29,0	58,0	12	219	215,00	**167**				
SK 50	M16	17,0	250	29,0	62,0	12	269	247,50	**168**				

Accessories

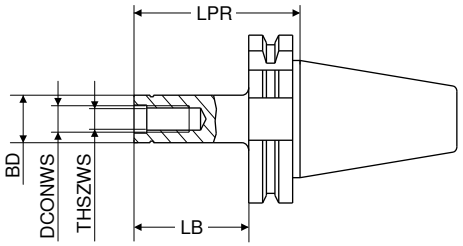




Extension-Reduction set	Pull studs	Others
→ 17|19	→ 48–49	→ 17|34

16

Adapter for milling cutters with threaded end







AD
G 6,3 n_{max} 18000

WA

Adapter	THSZWS	DCONWS	LB	BD	LPR	Article no. 56 709 ...	
		mm	mm	mm	mm	EUR	
SK 40	M8	8,5	50	13,8	69	109,10	**082**
SK 40	M10	10,5	50	18,0	69	109,10	**102**
SK 40	M10	10,5	75	18,0	94	117,40	**103**
SK 40	M10	10,5	100	18,0	119	124,80	**104**
SK 40	M12	12,5	50	21,0	69	109,10	**122**
SK 40	M12	12,5	75	21,0	94	117,40	**123**
SK 40	M12	12,5	100	21,0	119	124,80	**124**
SK 40	M16	17,0	50	29,0	69	109,10	**162**
SK 40	M16	17,0	75	29,0	94	117,40	**163**
SK 40	M16	17,0	100	29,0	119	124,80	**164**

Accessories



Extension-Reduction set
→ 17|19



Pull studs
→ 48–49

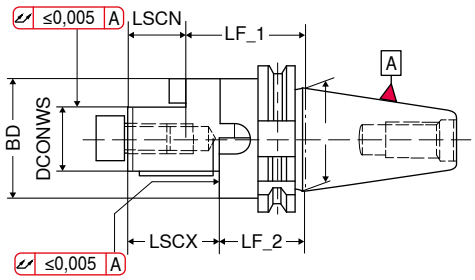


Others
→ 17|34

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:
Toolholder with retaining screw, driving ring and dowel spring






A
G 6,3 n_{max} 8000
Y8


A
G 6,3 n_{max} 8000
Y8

	Adapter	DCONWS	LF_1	BD	LSCX	LSCN	LF_2	Article no. 81 429 ...		Article no. 82 429 ...	
		mm	mm	mm	mm	mm	mm	EUR		EUR	
short	SK 30	16	50	32	27	17	40	82,21	016 [1]		
	SK 30	22	50	40	31	19	38	82,21	022 [1]		
	SK 30	27	55	48	33	21	43	87,34	027 [1]		
	SK 30	32	60	58	38	24	46	92,37	032 [1]		
	SK 40	16	55	32	27	17	45			56,49	116
	SK 40	22	55	40	31	19	43			58,70	122
	SK 40	27	55	48	33	21	43			59,89	127
	SK 40	32	60	58	38	24	46			63,28	132
	SK 40	40	60	70	41	27	46			66,58	140 [1]
	SK 50	16	55	32	27	17	45			84,74	316
	SK 50	22	55	40	31	19	43			87,68	322
	SK 50	27	55	48	33	21	43			94,50	327
	SK 50	32	55	58	38	24	41			97,20	332
	SK 50	40	55	70	41	27	41			99,99	340 [1]
	SK 50	50	70	90	46	30	54			109,20	350 [1]
long	SK 40	16	100	32	27	17	90	75,28	216		
	SK 40	22	100	40	31	19	88	78,43	222		
	SK 40	27	100	48	33	21	88	79,90	227		
	SK 40	32	100	58	38	24	86	84,20	232		
	SK 40	40	100	70	41	27	86	88,81	240		

1) With cross screw


Parallel key
Y8


Drive ring
Y8


Cross nut key
Y8


Retaining screw
Y8


Retaining screw
Y8


Clamping screw
Y8

Spare parts DCONWS	Article no. 83 950 ...		Article no. 83 370 ...		Article no. 83 368 ...		Article no. 83 367 ...		Article no. 81 950 ...		Article no. 83 950 ...	
	EUR		EUR		EUR		EUR		EUR		EUR	
16	1,63	284	9,91	116	10,69	116	3,23	016	2,96	020	2,88	113
22	1,63	285	11,01	122	13,32	122	3,54	022	3,44	021	3,33	124
27	3,15	286	11,84	127	17,09	127	4,53	027	3,86	022	3,67	125
32	1,87	287	14,16	132	22,02	132	7,28	032	5,09	023	4,56	126
40	2,00	288	21,07	140	30,73	140	11,54	040			6,48	112
50	2,25	289	37,12	150	41,84	150	25,58	050				

Spare part 81 950 ... only use for article 81 429 ...!

Accessories


Pull studs
→ 48–49

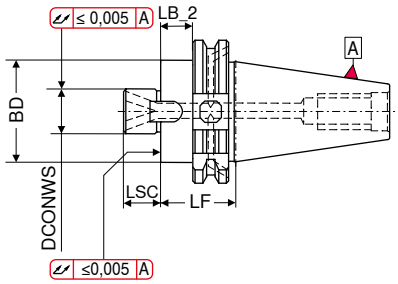

Milling Adapter Rings
→ 17|28


Others
→ 17|34

Shell mill adapter

▲ Screwed drive dogs

Scope of supply:
Toolholder with retaining screw





	Adapter	DCONWS	LB_2	LF	BD	LSC	A G 6,3 n_{max} 8000 Y8 Article no. 81 428 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 428 ...	
		mm	mm	mm	mm	mm	EUR		EUR	
short	SK 30	16	21	40	38	17	77,28	016 [2]		
	SK 30	22	21	40	43	19	77,28	022 [2]		
	SK 30	27	21	40	43	21	82,21	027 [2]		
	SK 30	32	31	50	78	24	87,66	032 [2]		
	SK 40	16	25	44	38	17			56,49	116
	SK 40	22	25	44	48	19			59,89	122
	SK 40	27	36	55	58	21			60,98	127
	SK 40	32	31	50	78	24			64,20	132
	SK 40	40	31	50	88	27			69,80	140 [1]
	SK 50	16	25	44	38	17			87,22	316
	SK 50	22	25	44	48	19			89,51	322
	SK 50	27	25	44	58	21			91,71	327
	SK 50	32	21	40	78	24			99,09	332
	SK 50	40	31	50	88	27			100,90	340 [1]
long	SK 40	16	81	100	38	17			58,42	416
	SK 40	22	81	100	48	19			60,35	422
	SK 40	27	81	100	58	21			61,35	427
	SK 40	32	81	100	78	24			64,57	432
	SK 40	40	81	100	88	27			67,41	440 [1]
	SK 50	16	81	100	38	17			92,61	616
	SK 50	22	81	100	48	19			94,50	622
	SK 50	27	81	100	58	21			97,20	627
	SK 50	32	81	100	78	24			99,99	632
	SK 50	40	81	100	88	27			101,80	640 [1]
medium length	SK 40	16	111	130	38	17			62,09	816
	SK 40	22	111	130	48	19			64,20	822
	SK 40	27	111	130	58	21			65,21	827
	SK 40	32	111	130	78	24			68,33	832
	SK 40	40	111	130	88	27			71,35	840 [1]
	SK 50	16	111	130	38	17			98,10	916
	SK 50	22	111	130	48	19			99,99	922
	SK 50	27	111	130	58	21			102,70	927
	SK 50	32	111	130	78	24			105,50	932
	SK 50	40	111	130	88	27			107,30	940
extra-long	SK 40	16	141	160	38	17			64,20	516
	SK 40	22	141	160	48	19			66,30	522
	SK 40	27	141	160	58	21			67,22	527
	SK 40	32	141	160	78	24			70,34	532
	SK 40	40	141	160	88	27			73,28	540 [1]
	SK 50	16	141	160	38	17			100,90	716
	SK 50	22	141	160	48	19			103,70	722
	SK 50	27	141	160	58	21			105,50	727
	SK 50	32	141	160	78	24			108,20	732
	SK 50	40	141	160	88	27			111,00	740 [1]

1) With cross screw and 4 holes M12, Pitch Circle diameter = 66.7 mm, coolant outlet on the outer diameter of the spigot (DCONWS)!
2) With cross screw

Spare parts facemill adapters

Spare parts DCONWS		Y8  Driver Article no. 83 950 ... EUR		Y8  Cross nut key Article no. 83 368 ... EUR		Y8  Retaining screw Article no. 83 367 ... EUR		Y8  Clamping screw Article no. 83 950 ... EUR	
16	8x9x17,5	7,23	120	10,69	116	M8	3,23	016	M8x25	2,88	113
22	10x11x20,5	7,49	121	13,32	122	M10	3,54	022	M10x25	3,33	124
27	12x13x24,3	8,48	122	17,09	127	M12	4,53	027	M12x30	3,67	125
32	14x21x21,2	8,74	123	22,02	132	M16	7,28	032	M16x35	4,56	126
40	15,9x16,3x19,5	11,22	295	30,73	140	M20	11,54	040	M20x40	6,48	112

DCONWS		Y8  Drive dogs Article no. 81 950 ... EUR		Y8  Drive screw Article no. 81 950 ... EUR		Y8  Screw for drivers Article no. 83 950 ... EUR	
16	8x8x14	7,23	001	M3x8	0,38	010	M3x8	0,38	296
22	10x10x17	7,49	002	M4x8	0,48	011	M4x12	0,48	297
27	12x14x20	8,48	003	M4x14	0,57	012	M5x12	0,57	136
32	14x14x22	8,74	004	M5x13	0,64	013	M5x20	0,64	137
40							M6x16	0,75	138

Spare part 81 950 ... only use for article 81 428 ...!

Accessories



Pull studs → 48–49



Extensions → 17|26



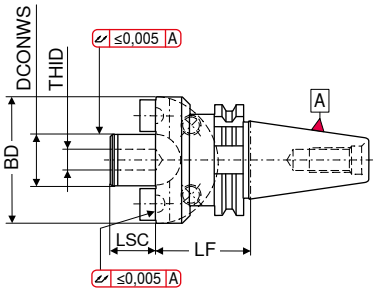
Others → 17|34

16

Large diameter facemill adapter

▲ For milling cutters with keyway or drive slot DIN 6357

Scope of supply:
Holder with integrated drive dogs according to DIN 2079 and 4 fixation screws







A
G 6,3 n_{max} 8000

Adapter	DCONWS	LF	BD	LSC	THID	Y8 Article no. 82 432 ...	
	mm	mm	mm	mm		EUR	
SK 40	40	60	89	30	M20	115,60	**040**
SK 50	40	70	89	30	M20	133,90	**240**
SK 50	60	70	129	40	M30	162,40	**260**



Screw for drivers



Driver



Socket head screw



Clamping screw

Spare parts DCONWS		Y8 Article no. 83 950 ... EUR			Y8 Article no. 83 950 ... EUR		2A/28 Article no. 70 950 ... EUR		Y8 Article no. 83 950 ... EUR	
40	M6x16	0,75	**138**	15,9x16,3x19,5	11,22	**295**			M12x50	3,65	**140**
60				25,4x16,3x26,5	14,57	**298**	M12x30	8,45	**181**	M16x45	9,30	**160**

Accessories

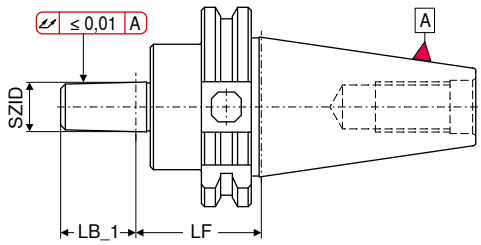


Pull studs
→ 48–49



Others
→ 17|34

Drill chuck adapter







A
G 6,3 n_{max} 8000

Adapter	SZID	LF	LB_1	Y8 Article no. 82 423 ...	
		mm	mm	EUR	
SK 40	B12	40	18,5	44,30	**112**
SK 40	B16	40	24,0	44,30	**116**
SK 50	B16	40	24,0	67,04	**316**
SK 50	B18	40	32,0	67,04	**318**


Drill chuck


Drill chuck

Spare parts SZID		Y8 Article no. 83 636 ...			Y8 Article no. 83 636 ...	
		EUR			EUR	
B12	0 - 8 mm	88,19	**012**	0 - 10 mm	104,00	**112**
B16	1 - 13 mm	124,80	**016**	3 - 16 mm	104,90	**116**
B18				3 - 16 mm	133,20	**018**

Accessories

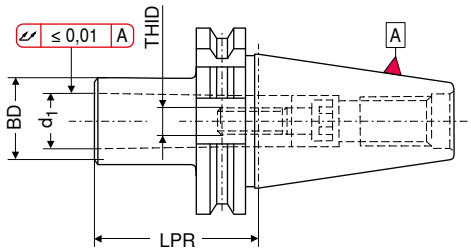

Pull studs
→ 48–49


Others
→ 17|34

16

Milling sleeve adapters DIN 6364 for DIN 228-2C Morse taper shanks with thread

Scope of supply:
Holder with retaining screw







A
G 6,3 n_{max} 8000

	Adapter	d_1	LPR	BD	THID	Y8 Article no. 82 446 ...	
			mm	mm		EUR	
short	SK 40	MK1	50	25	M6	54,11	110
	SK 40	MK2	50	32	M10	54,11	120
	SK 40	MK3	70	40	M12	56,49	130
	SK 40	MK4	95	48	M16	58,70	140
	SK 50	MK1	45	25	M6	79,70	310
	SK 50	MK2	60	32	M10	78,87	320
	SK 50	MK3	65	40	M12	78,87	330
	SK 50	MK4	95	48	M16	81,71	340
	SK 50	MK5	120	63	M20	92,61	350

Disassembly instructions can be found in → **Chapter 17, Accessories.**

		Y8  Morse taper clamping screw			Y8  Counterscrew			Y8  Hollow key with nose			Y8  Fixing ring	
Spare parts		**Article no. 83 950 ...**			**Article no. 83 950 ...**			**Article no. 83 359 ...**			**Article no. 83 950 ...**	
for Article no.		EUR			EUR			EUR			EUR	
82 446 110	M6x30	0,69	260	M5x6	0,48	030	16 x 32	18,45	013	M16x8x6,5	6,38	265
82 446 120	M10x30	1,17	261	M5x8	0,48	031	16 x 32	18,45	013	M16x8x10,5	6,38	267
82 446 130	M12x35	0,86	018	M5x6	0,48	030	17 x 117	20,87	017	M20x1,5x10x13	6,80	269
82 446 140	M16x40	2,74	019	M5x8	0,48	031	23 x 145	25,27	023	M26x1,5x17	8,30	270
82 446 310	M6x30	0,69	260	M5x8	0,48	031	20 x 135	21,92	020	M24x10x6,5	7,34	266
82 446 320	M10x30	0,86	017	M5x8	0,48	031	20 x 135	21,92	020	M24x10x10,5	7,34	268
82 446 330	M10x30	0,86	017	M5x8	0,48	031	17 x 117	20,87	017	M20x1,5x10x13	6,80	269
82 446 340	M16x40	2,74	019	M5x8	0,48	031	23 x 145	25,27	023	M26x1,5x17	8,30	270
82 446 350	M20x50	6,88	262	M5x8	0,48	031	33 x 175	31,35	033	M36x1,5x21	10,80	271

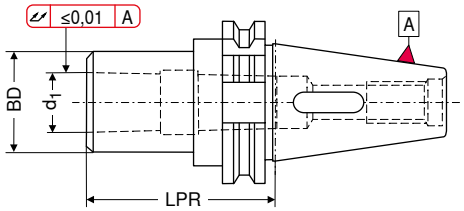
Accessories


Morse taper adapter sleeve
→ 17|4


Pull studs
→ 48–49


Others
→ 17|34

Taper sleeve DIN6383 for DIN 228-2D Morse taper shanks





	Adapter	d_1	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 439 ... EUR		AD G 6,3 n_{max} 8000 Y8 Article no. 82 439 ... EUR	
			mm	mm				
short	SK 30	MK1	50	25	73,40	010		
	SK 30	MK2	65	32	73,40	020		
	SK 30	MK3	80	40	79,80	030		
	SK 40	MK1	50	25			49,71	110
	SK 40	MK2	50	32			49,71	120
	SK 40	MK3	70	40			53,10	130
	SK 40	MK4	95	48			55,40	140
	SK 50	MK1	50	25			67,96	310
	SK 50	MK2	60	32			70,34	320
	SK 50	MK3	65	40			70,34	330
	SK 50	MK4	95	48			72,63	340
	SK 50	MK5	105	63			78,97	350
long	SK 40	MK2	117	32	70,77	220		
	SK 40	MK3	133	40	78,65	230		
	SK 40	MK4	156	48	85,77	240		

Accessories


Morse taper adapter sleeve
→ 17|4

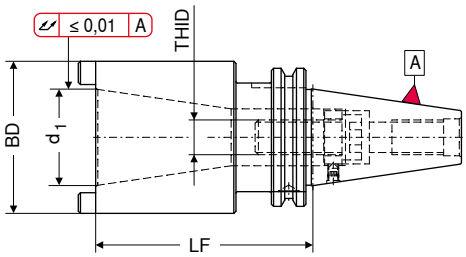

Pull studs
→ 48–49


Others
→ 17|34

Milling adapter sleeve

- For mounting tool holders according to DIN 2080
- With an extended retaining screw also tool holders according to DIN 69871, MAS-BT and ANSI-CAT can be clamped

Scope of supply:
Holder with clamping screw for DIN 2080 adapters






A
G 6,3 n_{max} 8000
Y8


A
G 6,3 n_{max} 8000
Y8

Adapter	d_1	LF	BD	THID	Article no. 81 453 ... EUR		Article no. 82 453 ... EUR	
		mm	mm					
SK 40	SK 30	40	51	M12	119,60	**030**		
SK 40	SK 40	100	70	M16			93,51	**040**
SK 50	SK 40	80	70	M16			127,40	**240**
SK 50	SK 50	120	100	M24			133,90	**250**


Y8
Clamping screw SK


Y8
Clamping Screw


Y8
Counterscrew


Y8
Counterscrew


Y8
Hollow key with nose


Y8
Fixing ring


Y8
Fixing ring

Spare parts for Article no.	Article no. 83 950 ... EUR		Article no. 81 950 ... EUR		Article no. 81 950 ... EUR		Article no. 83 950 ... EUR		Article no. 83 359 ... EUR		Article no. 81 950 ... EUR		Article no. 83 950 ... EUR	
81 453 030	11,84	**263**	11,74	**160**	0,68	**033**			20,87	**017**	10,91	**170**		
82 453 040	5,84	**009**					0,48	**030**	25,27	**023**			8,30	**270**
82 453 240	6,48	**264**												
82 453 250	20,34	**256**					0,48	**031**	31,46	**133**			10,80	**257**

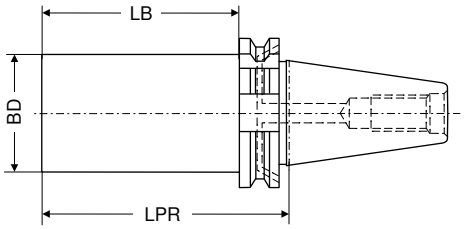
Auxiliary table for finding the required spare parts and accessories for intermediate sleeves for SK-adapters

DIN 69871 Suitable for article no.	Norm of the SK-shank Ø d_1 DIN 69871	Ø d_1 DIN 2080	Clamping screw length THID	Clamping screw SK Article No.	Retaining ring Article No.	Lock screw Article No.	Hollow key Article No.
81 453 030		SK 30	M12 x 35	81 950 160	81 950 170	81 950 033	83 359 017
82 453 040	SK 40		M16 x 70	83 950 264	83 950 270	83 950 030	83 359 023
82 453 040		SK 40	M16 x 40	83 950 009	83 950 270	83 950 030	83 359 023
82 453 240	SK 40		M16 x 70	83 950 264			
82 453 240		SK 40	M16 x 40	83 950 009			
82 453 250	SK 50		M24 x 80	83 950 256	83 950 257	83 950 031	83 359 133
82 453 250		SK 50	M24 x 50	83 950 263	83 950 257	83 950 031	83 359 133

Spare part 81 950 ... only use for article 81 453 ...!

Blank

- Material: Steel 17CrNiMo5
- For production of special tools
- Diameter BD turned with 0.5 mm oversize
- Taper hardened and ground
- Special tool area in soft state







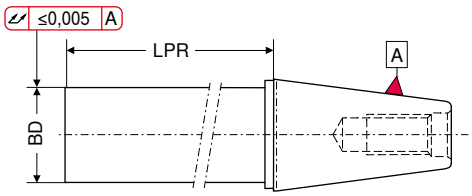
AD/B

Adapter	BD	LPR	LB	Y8 Article no. 82 458 ...	
	mm	mm	mm	EUR	
SK 40	63,0	250	231	65,84	**040**
SK 50	63,5	300	281	121,10	**050**

Test bar

- Without clamping slots
- MAS BT 40 special pull stud with LF = 32 mm

Scope of supply:
In wooden box





Adapter	BD	LPR	Y8 Article no. 82 456 ...	
	mm	mm	EUR	
SK / BT 40	40	330	287,10	**040**
SK / BT 50	50	330	354,00	**050**

Accessories





Pull studs → 48–49

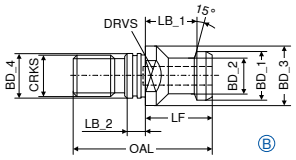
Others → 17|34

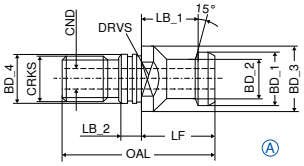
16

Pull studs for tool holders according to DIN 69871

- DIN 69872 form A and B
- For tools with or without axial coolant supply

Scope of supply:
Including O-Ring





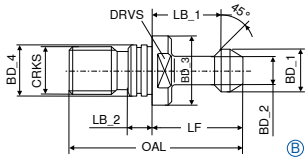


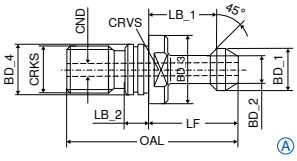
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 468 ...		Y8 Article no. 82 475 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SK 30	13	9	17	13	M12	44	24	19	5	3,5	14	60	A	9,44	030		
SK 40	19	14	23	17	M16	54	26	20	7	7,0	19	90	A	5,16	040		
SK 50	28	21	36	25	M24	74	34	25	10	11,5	30	145	A	7,84	050		
SK 30	13	9	17	13	M12	44	24	19	5		14	60	B			9,44	030
SK 40	19	14	23	17	M16	54	26	20	7		19	90	B			5,16	040
SK 50	28	21	36	25	M24	74	34	25	10		30	145	B			7,84	050

Pull studs for tool holders according to DIN 69871

- Similar to BT 45°, but 3 mm shorter
- For Haas, Micron and Hurco machines

Scope of supply:
Including O-Ring







Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 83 535 ...		Y8 Article no. 83 538 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
SK 40	15	10	23	17	M16	57	32	25	5	4	19	90	A	9,29	040		
SK 40	15	10	23	17	M16	57	32	25	5		19	90	B			9,57	040

Y8



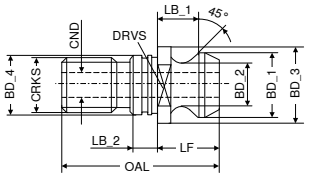
O-Ring

Spare parts BD_4		Article no. 83 476 ...	
		EUR	
17	BT / SK 40	0,46	040
25	BT / SK 50	0,46	050

Pull studs for tool holders according to DIN 69871

▲ Similar to ISO / DIS 7388 (ANSI-CAT only for SK 40) Form A

Scope of supply:
SK 50 including O-ring
SK 40 without O-ring groove

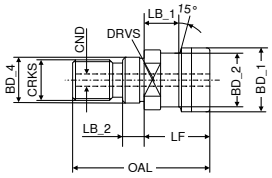




Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	Y8 Article no. 82 487 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm	EUR	
SK 40	18,95	12,95	22,5	17	M16	41,26	16,40	11,15	4,0	6,0	19	90	5,46	**040**
SK 50	29,10	19,60	37,0	25	M24	65,50	25,55	17,95	5,5	11,5	30	145	7,84	**050**

Pull studs for tool holders according to DIN 69871

▲ SK 40 with circlip groove and edge protection, with and without internal thread
▲ SK 50 with circlip groove, with and without internal thread
▲ For tools according to DIN 69871 for conversion to DIN 2080



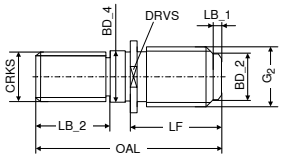


Adapter	BD_1	BD_2	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	With internal thread Y8 Article no. 82 493 ...		Without internal thread Y8 Article no. 82 494 ...	
	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm	EUR		EUR	
SK 40	25,0	21,1	17	M16	53	25	13,6	8	7	19	90	6,16	**040**	6,44	**040**
SK 50	39,3	32,0	25	M24	65	25	13,3	10		30	145	8,62	**050** [1)]	9,59	**050**

1) With O ring

Pull studs for tool holders according to DIN 69871

▲ DECKEL thread S 20 x 2





Adapter	G_2	CRKS	OAL	LF	LB_1	LB_2	BD_2	BD_4	DRVS	Y8 Article no. 83 471 ...	
			mm	mm	mm	mm	mm	mm	mm	EUR	
SK 40	S 20 x 2	M16	55	33	4	17	16,7	17	22	20,34	**040**

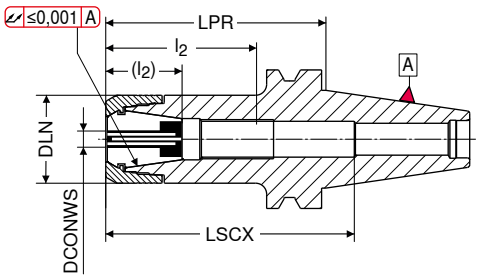
16

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





AD
G 2,5 n_{max} 25000
Y8

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Article no. 84 524 ... EUR	
BT 30	1 - 10	50	30	73	28 - 44 (16 - 31)	426E (ER16)	90,49	**001**
BT 30	1 - 10	75	30	97	28 - 45 (14 - 31)	426E (ER16)	101,50	**002**
BT 30	1 - 10	100	30	123	28 - 44 (16 - 31)	426E (ER16)	117,70	**003**
BT 30	1 - 10	120	30	112	28 - 45 (14 - 31)	426E (ER16)	127,60	**004**
BT 30	2 - 16	60	40	77	35 - 59 (30 - 42)	430E (ER25)	99,53	**160**
BT 30	2 - 16	75	40	72	38 - 56 (23 - 39)	430E (ER25)	101,60	**161**
BT 30	2 - 16	90	40	87	38 - 56 (23 - 39)	430E (ER25)	111,60	**162**
BT 30	2 - 16	120	40	115	38 - 56 (23 - 39)	430E (ER25)	127,70	**164**
BT 30	2 - 20	60	50	69	42 - 52	470E (ER32)	99,53	**207**
BT 30	2 - 20	75	50	84	42 - 62 (24 - 45)	470E (ER32)	101,60	**208**
BT 30	2 - 20	90	50	94	42 - 62 (24 - 45)	470E (ER32)	111,60	**209**
BT 40	1 - 10	75	30	90	38 - 53 (29 - 39)	426E (ER16)	90,50	**210**
BT 40	1 - 10	90	30	120	30 - 50 (29 - 36)	426E (ER16)	100,60	**310**
BT 40	1 - 10	120	30	140	29 - 45 (29 - 35)	426E (ER16)	135,70	**410**
BT 40	1 - 10	150	30	180	29 - 45 (29 - 32)	426E (ER16)	149,80	**510**
BT 40	1 - 10	200	30	220	29 - 50 (29 - 36)	426E (ER16)	200,00	**610**
BT 40	2 - 16	60	40	92	44 - 64 (36 - 46)	430E (ER25)	95,53	**116**
BT 40	2 - 16	75	40	100	42 - 59 (36 - 41)	430E (ER25)	90,50	**216**
BT 40	2 - 16	90	40	91	42 - 59 (36 - 41)	430E (ER25)	100,60	**316**
BT 40	2 - 16	105	40	100	35 - 60 (20 - 42)	430E (ER25)	127,60	**168**
BT 40	2 - 16	120	40	91	40 - 65 (36 - 47)	430E (ER25)	145,80	**416**
BT 40	2 - 16	150	40	100	40 - 64 (36 - 45)	430E (ER25)	159,90	**516**
BT 40	2 - 16	200	40	150	40 - 64 (36 - 45)	430E (ER25)	200,10	**616**
BT 40	2 - 20	60	50	55	45 - 64 (42 - 46)	470E (ER32)	95,53	**120**
BT 40	2 - 20	75	50	100	42 - 76 (42 - 52)	470E (ER32)	90,50	**220**
BT 40	2 - 20	90	50	100	42 - 76 (42 - 52)	470E (ER32)	100,60	**320**
BT 40	2 - 20	120	50	110	42 - 71 (42 - 53)	470E (ER32)	145,80	**420**
BT 40	2 - 20	150	50	110	42 - 71 (42 - 53)	470E (ER32)	159,90	**520**
BT 40	3 - 26	75	63	78	54 - 59	472E (ER40)	120,70	**226**
BT 40	3 - 26	105	63	93	55 - 71 (48 - 53)	472E (ER40)	140,80	**326**
BT 50	2 - 20	75	50	110	45 - 70 (42 - 53)	470E (ER32)	165,90	**720**
BT 50	2 - 20	105	50	140	45 - 63 (42 - 45)	470E (ER32)	200,10	**820**
BT 50	2 - 20	165	50	200	45 - 74 (42 - 56)	470E (ER32)	286,60	**920**
BT 50	3 - 26	75	63	100	48 - 58	472E (ER40)	175,90	**726**
BT 50	3 - 26	105	63	100	48 - 58	472E (ER40)	210,20	**826**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 3 mm longer

Spare parts, ER precision collet chuck

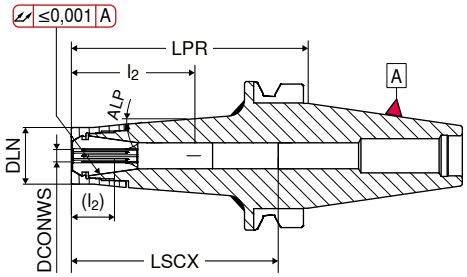
Spare parts	Y8  Lock nut IK		Y8  Lock nut			Y8  Stop screw 2			Y8  Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	EUR		EUR			EUR			EUR	
426E (ER16)	35,19	011	28,15	001	M11x1 - SW6	14,08	341	M11x1 - SW6	9,93	337
430E (ER25)	38,22	013	31,16	003	M18x1,5 - SW6	15,90	432	M18x1,5 - SW6	11,42	431
470E (ER32)	40,23	015	33,15	005	M22x1,5 - SW6	15,90	402	M22x1,5 - SW6	11,42	401
472E (ER40)	54,30	017	45,25	007				M28x1,5 - SW6	10,35	400

ER Precision tapered collet chuck

- for special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P






AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	ALP	Y8 Article no. 84 517 ... EUR	
BT 40	1 - 10	100	24	72	28 - 48 (20 - 35)	426E (ER16)	4,5°	114,60	410
BT 40	1 - 10	160	24	180	28 - 48 (20 - 35)	426E (ER16)	4,5°	152,80	510

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8  Tapered lock nut IK		Y8  Tapered lock nut			Y8  Stop screw 2			Y8  Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	EUR		EUR			EUR			EUR	
426E (ER16)	41,23	033	33,15	031	M11x1 - SW6	14,08	341	M11x1 - SW6	9,93	337

Accessories


ER collet
→ 208–211, 213


Sealing ring
→ 207


roll key
→ 17|36


roll key device
→ 17|36


Pull studs
→ 91–92

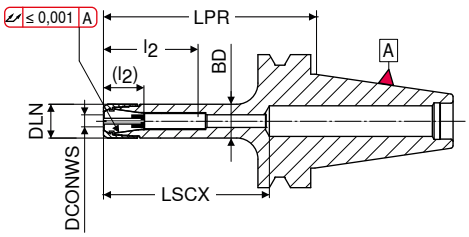

Others
→ 17|34

ER Precision collet chuck, slim version

- For Mini Clamping Nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





Adapter	DCONWS mm	LPR mm	DLN mm	BD mm	LSCX mm	l_2 (l_2) mm	for collet	AD/B G 2,5 n_{max} 25000 Y8 Article no. 84 508 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 507 ...	
								EUR		EUR	
BT 30	1 - 7	50	16	16	68	18 - 32 (12 - 22)	4008E (ER11)			105,60	**007**
BT 30	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)			117,70	**008**
BT 40	1 - 7	75	16	16	100	15 - 30 (8 - 21)	4008E (ER11)	117,70	**307**		
BT 40	1 - 7	90	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	117,70	**40600**		
BT 40	1 - 7	120	16	16	140	15 - 30 (8 - 21)	4008E (ER11)	155,90	**507**		
BT 40	1 - 7	150	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	174,00	**90600**		
BT 40	1 - 10	75	22	22	100	27 - 49 (16 - 32)	426E (ER16)	117,70	**216**		
BT 40	1 - 10	90	22	22	115	27 - 49 (16 - 32)	426E (ER16)	117,70	**316**		
BT 40	1 - 10	120	22	22	145	27 - 49 (16 - 32)	426E (ER16)	155,90	**416**		
BT 40	1 - 10	150	22	22	175	27 - 49 (16 - 32)	426E (ER16)	174,00	**516**		

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for collet	Y8 Mini lock nut IK Article no. 84 950 ... EUR		Y8 Mini lock nut Article no. 84 950 ... EUR		Y8 Stop screw 2 Article no. 83 950 ...	EUR		Y8 Stop screw 1 Article no. 83 950 ...	EUR	
4008E (ER11)			33,15	**041**	M8x1 - SW4	13,53	**340**	M8x1 - SW4	9,93	**336**
426E (ER16)	41,22	**035**	33,15	**034**	M11x1 - SW6	14,08	**341**	M11x1 - SW6	9,93	**337**

Accessories


ER collet
→ 208–211, 213


Sealing ring
→ 207


Device
→ 17|35


Roll key
→ 17|36


Roll key device
→ 17|36


Pull studs
→ 91–92

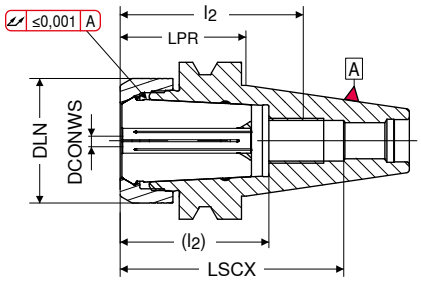

Others
→ 17|34

OZ Precision Collet Chuck

- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P







AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	l_2 (l_2)	for collet	Y8 Article no. 84 513 ... EUR	
	mm	mm	mm	mm	mm			
BT 40	2 - 25	51	50	89	70 (56)	462E	110,70	**225**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8  Lock nut IK Article no. 84 950 ...		Y8  Stop screw 2 Article no. 83 950 ...		Y8  Stop screw 1 Article no. 83 950 ...	
for collet	EUR		EUR		EUR	
462E	42,22	**020**	M22x1,5 - SW6	15,90 **402**	M22x1,5 - SW6	11,42 **401**

Accessories


OZ Collet → 217


Sealing ring → 217


Roll key → 17|36


Roll key device → 17|36

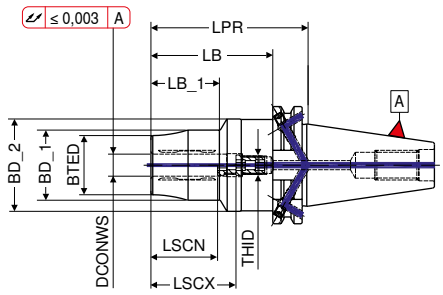

Pull studs → 91–92


Others → 17|34

16

High pressure chuck, short version

Scope of supply:
Base body with backstop screw and pressure screw





AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Y8 Article no. 83 526 ...	EUR	
		mm	mm	mm	mm	mm	mm	mm	mm	mm				
Short	BT 40	16	95	36	42	50	42	49	39	71	M12x1		415,20	116
	BT 40	20	100	42	48	50	45	51	41	76	M16x1		370,10	120
	BT 40	25	110	51	57	50	60	57	47	91	M16x1		415,20	125
	BT 40	32	120	57	63	50	65	61	51	101	M16x1		415,20	132

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth


Pressure pin


Pressure screw


Stop screw IK

Spare parts for Article no.		Y7 Article no. 83 950 ...	EUR		Y7 Article no. 83 950 ...	EUR		Y7 Article no. 83 950 ...	EUR	
83 526 116	Ø5 x 16		3,03	433	M10x1x14		4,28	429	M12x1x18		7,16	446
83 526 120	Ø6 x 16		3,18	434	M10x1x12		11,84	159	M16x1x18,5		7,88	448
83 526 125	Ø6 x 16		3,18	434	M10x1x12		11,84	159	M16x1x22		12,48	449
83 526 132	Ø6 x 16		3,18	434	M10x1x14		4,28	429	M16x1x25		15,52	450


Cylindrical screw


Clamping key – T

Spare parts for Article no.		Y7 Article no. 83 950 ...	EUR		Y7 Article no. 80 397 ...	EUR	
83 526 116		M5x5 - SW2,5	1,85	157	SW5	4,24	050
83 526 120		M5x5 - SW2,5	1,85	157	SW5	4,24	050
83 526 125		M5x5 - SW2,5	1,85	157	SW5	4,24	050
83 526 132		M5x5 - SW2,5	1,85	157	SW5	4,24	050

Accessories


Reduction sleeve
→ 17|32

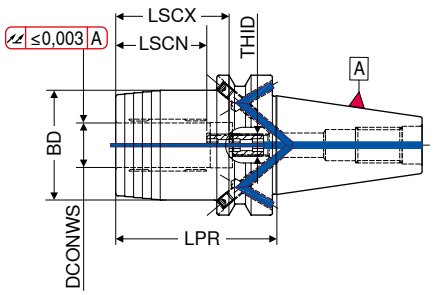

Pull studs
→ 48–49


Others
→ 17|34

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 513 ... EUR	
	mm	mm	mm	mm	mm			
BT 40	20	72,5	49	51	40	M16x1x13,5	241,20	**120**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Spare parts		Y7 Cylindrical screw Article no. 83 950 ... EUR			Y7 Clamping key– T Article no. 80 397 ... EUR			Y7 Pressure screw Article no. 83 950 ... EUR			Y7 Stop screw IK Article no. 83 950 ... EUR	
for Article no.												
83 513 120	M5x5 - SW2,5	1,85	**157**	SW5	4,24	**050**	M10x1x14	4,28	**429**	M16x1x13,5 - SW8	9,34	**424**

Accessories


Reduction sleeve
→ 17|32


Pull studs
→ 91–92

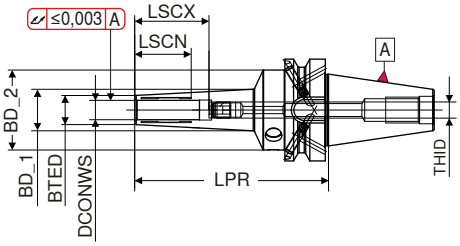

Others
→ 17|34

High pressure chuck, slim 3°

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw, pressure screw and screw plug







AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LSCX	LSCN	THID	Article no. 83 522 ...	
		mm	mm	mm	mm	mm	mm	mm		EUR	
long	BT40	3	120	9	16,55	49,5	28	12	M3	427,90	103
	BT40	4	120	10	17,55	49,5	28	16	M3	427,90	104
	BT40	5	120	11	18,55	49,5	28	20	M3	427,90	105
	BT40	6	120	12	19,55	49,5	37	27	M5	364,90	106
	BT40	8	120	14	21,55	49,5	37	27	M6	364,90	108
	BT40	10	120	16	23,65	49,5	41	31	M8x1	364,90	110
	BT40	12	120	18	25,76	49,5	46	36	M10x1	364,90	112
	BT40	16	120	24	31,45	49,5	49	39	M12x1	586,10	116
	BT40	20	120	28	35,55	49,5	51	41	M16x1	586,10	120
	BT40	6	160	16	33,53	49,5	37	27	M5	549,50	206
	BT40	8	160	18	34,60	49,5	37	27	M6	549,50	208
	BT40	10	160	20	36,27	49,5	41	31	M8x1	549,50	210
	BT40	12	160	22	37,88	49,5	46	36	M10x1	549,50	212
	BT40	6	200	16	37,88	49,5	37	27	M5	617,60	306
	BT40	8	200	18	38,90	49,5	37	27	M6	617,60	308
	BT40	10	200	20	40,57	49,5	41	31	M8x1	617,60	310
	BT40	12	200	22	42,18	49,5	46	36	M10x1	617,60	312

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Cylindrical screw

Y7



Clamping key – T

Y7



Pressure screw

Y7



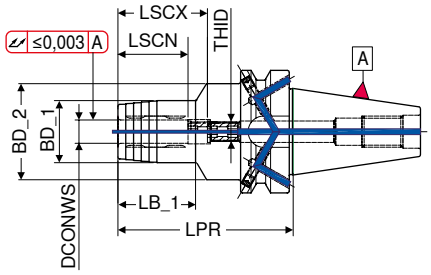
Stop screw IK

Spare parts		Article no. 83 950 ...			Article no. 80 397 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for Article no.		EUR			EUR			EUR			EUR	
83 522 103	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 522 104	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 522 105	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 522 106	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 522 108	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 522 110	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 522 112	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421
83 522 116	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M12x1x13,5 - SW5	8,11	422
83 522 120	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M16x1x13,5 - SW8	9,34	424
83 522 206	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 522 208	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 522 210	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 522 212	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421
83 522 306	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 522 308	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 522 310	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 522 312	M5x5 - SW2,5	1,85	157	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421

Hydraulic chuck MAS BT, short and slim version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	BD_1	BD_2	LSCX	LSCN	LB_1	THID	Article no. 83 521 ...	
	mm	mm	mm	mm	mm	mm	mm		EUR	
BT 40	6	90	26	49,5	37	27	29	M5	368,10	**106**
BT 40	8	90	28	49,5	37	27	30	M6	368,10	**108**
BT 40	10	90	30	49,5	41	31	35	M8x1	368,10	**110**
BT 40	12	90	32	49,5	46	36	40	M10x1	319,80	**112**
BT 40	16	90	38	49,5	49	39	45	M12x1	368,10	**116**
BT 40	20	90	42	49,5	51	41	47	M16x1	319,80	**120**
BT 40	25	90	55	52,0	57	47	50	M16x1	368,10	**125**
BT 40	32	90	63	62,0	61	51	48	M16x1	368,10	**132**
BT 50	6	90	26	49,5	37	27	29	M5	514,80	**306**
BT 50	8	90	28	49,5	37	27	30	M6	514,80	**308**
BT 50	10	90	30	49,5	41	31	34	M8x1	514,80	**310**
BT 50	12	90	32	49,5	46	36	34	M10x1	466,70	**312**
BT 50	16	90	38	49,5	49	39	35	M12x1	514,80	**316**
BT 50	20	90	42	49,5	51	41	35	M16x1	466,70	**320**
BT 50	25	110	55	63,0	57	47	48	M16x1	514,80	**325**
BT 50	32	110	63	70,0	61	51	50	M16x1	514,80	**332**

→ Min. clamping depth, Page 233

Y7



Pressure screw

Y7



Stop screw IK

Y7



Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
6	M8x1x10	5,48	**439**				M5x12,5 - SW2,5	8,11	**418**
8	M8x1x10	5,48	**439**	M6x14 - SW2	8,11	**417**	M6x12,5 - SW3	8,11	**419**
10	M10x1x12	5,48	**440**				M8x1x13,5 - SW3	8,11	**420**
12	M10x1x12	5,48	**440**				M10x1x13,5 - SW5	8,11	**421**
16	M10x1x12	5,48	**440**				M12x1x13,5 - SW5	8,11	**422**
20 - 32	M10x1x12	5,48	**440**				M16x1x13,5 - SW8	9,34	**424**

Accessories



Reduction sleeve
→ 17|32



Pull studs
→ 91–92

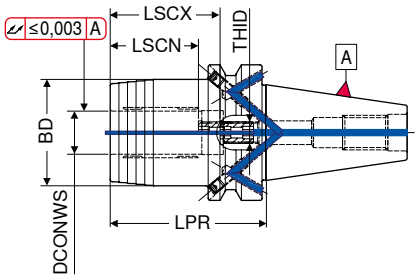


Others
→ 17|34

Hydraulic chuck MAS BT, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD/B
G 2,5 n_{max} 25000

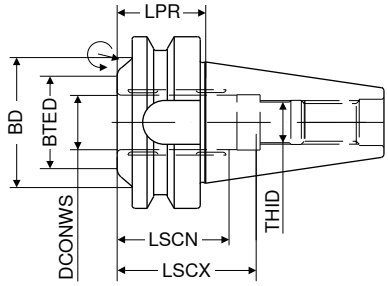
Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 518 ...	EUR	
	mm	mm	mm	mm	mm				
BT 40	20	72,5	49,5	51	41	M16x1		205,50	**120**
BT 50	32	90,0	72,0	61	51	M16x1		258,00	**332**

→ Min. clamping depth, Page 233

Hydraulic chuck, extra short

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 83 523 ...	EUR	
	mm	mm	mm	mm	mm	mm				
BT 40	20	32,5	34	48	51	41	M16x1		295,70	**120**

→ Min. clamping depth, Page 233



Pressure screw



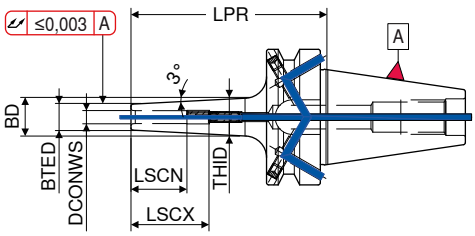
Stop screw IK

Spare parts DCONWS	Y7 Article no. 83 950 ...	EUR		Y7 Article no. 83 950 ...	EUR	
20 - 32	M10x1x12	5,48	**440**	M16x1x13,5 - SW8	9,34	**424**

Shrink adapter, Slim 3°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG







AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 323 ...	
		mm	mm	mm	mm	mm	mm		EUR	
short	BT 40	3	90	9	15	28	12	M6	160,40	103
	BT 40	4	90	10	16	28	16	M6	156,20	104
	BT 40	5	90	11	17	30	20	M6	156,20	105
	BT 40	6	90	12	18	36	26	M5	138,40	106
	BT 40	8	90	14	20	36	26	M6	138,40	108
	BT 40	10	90	16	22	41	31	M8x1	138,40	110
	BT 40	12	90	18	24	47	37	M10x1	138,40	112
	BT 40	14	90	20	26	47	37	M10x1	138,40	114
	BT 40	16	90	22	28	50	40	M12x1	138,40	116
	BT 40	18	90	24	30	50	40	M12x1	138,40	118
	BT 40	20	90	26	32	52	42	M16x1	138,40	120
long	BT 40	3	120	9	16	12	12		179,40	203
	BT 40	4	120	10	17	16	16		176,20	204
	BT 40	5	120	11	18	20	20		176,20	205
	BT 40	6	120	12	21	36	26	M5	157,30	206
	BT 40	8	120	14	23	36	26	M6	157,30	208
	BT 40	10	120	16	25	41	31	M8x1	157,30	210
	BT 40	12	120	18	27	47	37	M10x1	157,30	212
	BT 40	14	120	20	29	47	37	M10x1	157,30	214
	BT 40	16	120	22	31	50	40	M12x1	157,30	216
	BT 40	18	120	24	33	50	40	M12x1	157,30	218
	BT 40	20	120	26	35	52	42	M16x1	157,30	220
extra-long	BT 40	3	160	9	19	12	12		202,40	303
	BT 40	4	160	10	20	16	16		198,20	304
	BT 40	5	160	11	21	20	20		198,20	305
	BT 40	6	160	12	24	36	26	M5	180,40	306
	BT 40	8	160	14	26	36	26	M6	180,40	308
	BT 40	10	160	16	28	41	31	M8x1	180,40	310
	BT 40	12	160	18	30	47	37	M10x1	180,40	312
	BT 40	14	160	20	32	47	37	M10x1	180,40	314
	BT 40	16	160	22	34	50	40	M12x1	180,40	316
	BT 40	18	160	24	36	50	40	M12x1	180,40	318
	BT 40	20	160	26	38	52	42	M16x1	180,40	320

→ Min. clamping depth, Page 233

Y7



Stop screw IK

Y7



Stop screw IK

Spare parts DCONWS

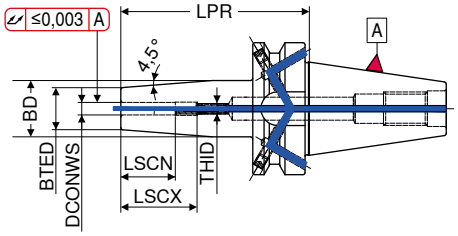
DCONWS		Article no. 83 950 ... EUR		DCONWS		Article no. 83 950 ... EUR	
3 - 5	M6x14 - SW2	8,11	417				
6					M5x12,5 - SW2,5	8,11	418
8					M6x12,5 - SW3	8,11	419
10					M8x1x13,5 - SW3	8,11	420
12 - 14					M10x1x13,5 - SW5	8,11	421
16 - 18					M12x1x13,5 - SW5	8,11	422
20					M16x1x13,5 - SW8	9,34	424

16

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG







AD/B
G 2,5 n_{max} 25000



AD
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 84 303 ... EUR		Y8 Article no. 84 303 ... EUR	
		mm	mm	mm	mm	mm	mm					
Short	BT 30	3	85	10	17	28	12	M6			161,50	003
	BT 30	4	85	15	22	28	16	M6			156,20	004
	BT 30	5	85	15	22	30	20	M6			156,20	005
	BT 30	6	85	21	27	36	26	M5			138,40	006
	BT 30	8	85	21	27	36	26	M6			138,40	008
	BT 30	10	85	24	32	41	31	M8x1			138,40	010
	BT 30	12	85	24	32	47	37	M10x1			138,40	012
	BT 30	14	85	27	34	47	37	M10x1			138,40	014
	BT 30	16	85	27	34	50	40	M12x1			138,40	016
	BT 30	18	85	33	42	50	40	M12x1			138,40	018
	BT 30	20	85	33	42	52	42	M16x1			138,40	020
	BT 40	3	90	10	17	28	12	M6	142,60	103		
	BT 40	4	90	15	22	28	16	M6	137,40	104		
	BT 40	5	90	15	22	30	20	M6	137,40	105		
	BT 40	6	90	21	27	36	26	M5	122,70	106		
	BT 40	8	90	21	27	36	26	M6	122,70	108		
	BT 40	10	90	24	32	41	31	M8x1	122,70	110		
	BT 40	12	90	24	32	47	37	M10x1	122,70	112		
	BT 40	14	90	27	34	47	37	M10x1	122,70	114		
	BT 40	16	90	27	34	50	40	M12x1	122,70	116		
	BT 40	18	90	33	42	50	40	M12x1	122,70	118		
	BT 40	20	90	33	42	52	42	M16x1	122,70	120		
	BT 40	25	100	44	53	58	48	M16x1	122,70	125		
Long	BT 40	3	120	10	20	12	12		158,40	203		
	BT 40	4	120	15	22	16	16		155,20	204		
	BT 40	5	120	15	22	20	20		155,20	205		
	BT 40	6	120	21	27	36	26	M5	137,40	206		
	BT 40	8	120	21	27	36	26	M6	137,40	208		
	BT 40	10	120	24	32	41	31	M8x1	137,40	210		
	BT 40	12	120	24	32	47	37	M10x1	137,40	212		
	BT 40	14	120	27	34	47	37	M10x1	137,40	214		
	BT 40	16	120	27	34	50	40	M12x1	137,40	216		
	BT 40	18	120	33	42	50	40	M12x1	137,40	218		
	BT 40	20	120	33	42	52	42	M16x1	137,40	220		
	BT 40	25	120	44	53	58	48	M16x1	137,40	225		
Extra-long	BT 40	3	160	10	20	12	12		180,40	303		
	BT 40	4	160	15	22	16	16		176,20	304		
	BT 40	5	160	15	22	20	20		176,20	305		
	BT 40	6	160	21	27	36	26	M5	159,40	306		
	BT 40	8	160	21	27	36	26	M6	159,40	308		
	BT 40	10	160	24	32	41	31	M8x1	159,40	310		
	BT 40	12	160	24	32	47	37	M10x1	159,40	312		
	BT 40	14	160	27	34	47	37	M10x1	159,40	314		
	BT 40	16	160	27	34	50	40	M12x1	159,40	316		
	BT 40	18	160	33	42	50	40	M12x1	159,40	318		
	BT 40	20	160	33	42	52	42	M16x1	159,40	320		
	BT 40	25	160	44	53	58	48	M16x1	159,40	325		

→ Min. clamping depth, Page 233

Y7



Stop screw IK

Y7

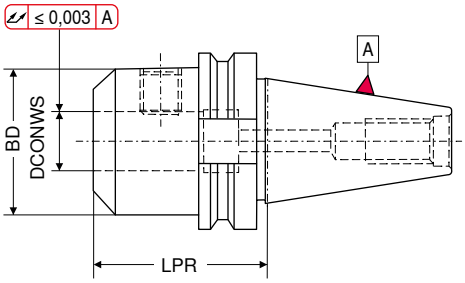


Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR		Article no. 83 950 ... EUR	
3 - 5	M6x14 - SW2	8,11	417		
6				M5x12,5 - SW2,5	8,11 418
8				M6x12,5 - SW3	8,11 419
10				M8x1x13,5 - SW3	8,11 420
12 - 14				M10x1x13,5 - SW5	8,11 421
16 - 18				M12x1x13,5 - SW5	8,11 422
20 - 25				M16x1x13,5 - SW8	9,34 424

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat





	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 502 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 502 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 82 501 ...		ADe G 6,3 n_{max} 8000 Y8 Article no. 82 503 ...	
		mm	mm	mm	EUR		EUR		EUR		EUR	
short	BT 30	6	50	25	82,21	006						
	BT 30	8	50	28	74,87	008						
	BT 30	10	50	35	74,87	010						
	BT 30	12	50	42	74,87	012						
	BT 30	14	50	44	74,87	014						
	BT 30	16	63	48	74,87	016						
	BT 30	18	63	50	74,87	018						
	BT 30	20	63	52	89,65	020						
extra short	BT 40	16	35	48			44,21	416	52,18	416	65,39	416
	BT 40	20	35	50			44,21	420	52,18	420	65,39	420
	BT 40	25	40	50			48,33	425	56,31	425	70,43	425
	BT 40	32	75	72			61,08	432			87,13	432



Grubscrew

W7

Spare parts DCONWS $_{H4}$		Article no. 62 950 ... EUR	
6	M6x10	0,66	006
8	M8x10	0,77	008
10	M10x12	1,02	010
12 - 14	M12x16	1,03	012
16 - 18	M14x16	1,28	016
20	M16x16	1,55	020
25	M18x2x20	2,84	025
32	M20x2x20	3,15	032

Accessories



Pull studs
→ 91–92

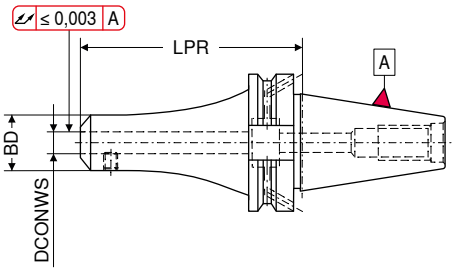


Others
→ 17|34

16

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat

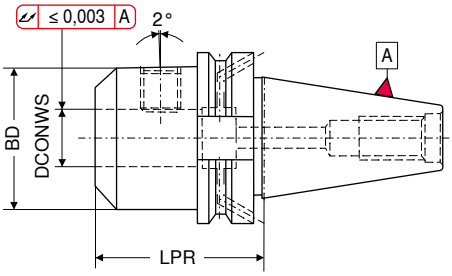




	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 502 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 501 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 82 503 ...		AD/Be G 2,5 n_{max} 18000 Y8 Article no. 82 504 ...	
		mm	mm	mm	EUR		EUR		EUR		EUR	
short	BT 40	6	50	25	40,91	106	48,88	106	57,78	106	65,75	106
	BT 40	8	50	28	40,91	108	48,88	108	57,78	108	65,75	108
	BT 40	10	63	35	38,61	110	46,59	110	55,40	110	63,37	110
	BT 40	12	63	42	38,61	112	46,59	112	55,40	112	63,37	112
	BT 40	14	63	44	38,61	114	46,59	114	55,40	114	63,37	114
	BT 40	16	63	48	41,82	116	49,80	116	63,10	116	71,07	116
	BT 40	18	63	50	41,82	118	49,80	118	63,10	118	71,07	118
	BT 40	20	63	52	41,82	120	49,80	120	63,10	120	71,07	120
	BT 40	25	100	65	45,86	125	53,74	125	67,13	125	75,02	125
	BT 40	32	100	72	49,89	132	57,96	132	73,83	132		
	BT 40	40	120	90	54,57	140						
	BT 50	6	63	25	55,58	206			88,96	206		
	BT 50	8	63	28	55,58	208			88,96	208		
	BT 50	10	80	35	54,02	210			82,26	210		
	BT 50	12	80	42	57,32	212			82,26	212		
	BT 50	14	80	44	57,32	214			82,26	214		
	BT 50	16	80	48	57,32	216			89,78	216		
	BT 50	18	80	50	57,32	218			89,78	218		
	BT 50	20	80	52	57,32	220			89,78	220		
	BT 50	25	100	65	63,74	225			96,30	225		
	BT 50	32	105	72	65,03	232			100,90	232		
	BT 50	40	120	90	67,41	240						
long	BT 40	6	100	25	42,64	506	50,54	506				
	BT 40	8	100	28	42,64	508	50,54	508				
	BT 40	10	100	35	40,26	510	48,24	510				
	BT 40	12	100	42	40,26	512	48,24	512				
	BT 40	14	100	44	39,99	514	47,96	514				
	BT 40	16	100	48	44,21	516	52,18	516				
	BT 40	18	100	50	44,02	518	51,91	518				
	BT 40	20	100	52	44,21	520	52,18	520				
	BT 50	6	100	25	62,27	706						
	BT 50	8	100	28	62,27	708						
	BT 50	10	100	35	59,52	710						
	BT 50	12	100	42	59,52	712						
	BT 50	14	100	44	59,52	714						
	BT 50	16	100	48	59,89	716						
	BT 50	18	100	50	59,89	718						
	BT 50	20	100	52	59,89	720						
	BT 50	25	120	65	65,21	725						
extra-long	BT 40	6	160	25	49,07	606	57,04	606				
	BT 40	8	160	28	49,07	608	57,04	608				
	BT 40	10	160	35	46,49	610	54,48	610				
	BT 40	12	160	42	46,49	612	54,48	612				
	BT 40	14	160	44	46,49	614	54,48	614				
	BT 40	16	160	48	46,68	616	54,75	616				
	BT 40	18	160	50	46,68	618	54,75	618				
	BT 40	20	160	52	46,68	620	54,75	620				
	BT 40	25	160	65	49,89	625	57,96	625				
	BT 50	6	160	25	76,12	806						
	BT 50	8	160	28	76,12	808						
	BT 50	10	160	35	76,21	810						
	BT 50	12	160	42	76,21	812						
	BT 50	14	160	44	76,21	814						
	BT 50	16	160	48	75,84	816						
	BT 50	18	160	50	75,84	818						
	BT 50	20	160	52	75,84	820						
	BT 50	25	160	65	76,39	825						
	BT 50	32	160	72	76,21	832						

Cylindrical Shank Adapter (Whistle Notch)

- For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
- The groove in the flat face is a characteristic feature of the Whistle Notch version





	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 81 506 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 506 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 507 ...	
		mm	mm	mm	EUR		EUR		EUR	
short	BT 40	6	50	25			50,45	106	59,34	106
	BT 40	8	50	28			50,45	108	59,34	108
	BT 40	10	63	35			46,77	110	55,76	110
	BT 40	12	63	42			46,77	112	55,76	112
	BT 40	14	63	44			46,77	114	55,76	114
	BT 40	16	63	48			51,35	116	60,26	116
	BT 40	18	63	50			51,35	118	60,26	118
	BT 40	20	63	52			51,35	120	60,26	120
	BT 40	25	100	65			65,30	125		
	BT 40	32	100	72			71,16	132		
	BT 40	40	120	80	82,63	140				
	BT 50	6	63	25			86,11	306		
	BT 50	8	63	28			86,11	308		
	BT 50	10	80	35			82,26	310		
	BT 50	12	80	42			82,26	312		
	BT 50	14	80	44			82,26	314		
	BT 50	16	80	48			82,72	316		
	BT 50	18	80	50			82,72	318		
	BT 50	20	80	52			82,72	320		
	BT 50	25	100	65			90,27	325		
	BT 50	32	105	72			91,71	332		
medium length	BT 40	6	130	25			63,56	206	70,43	206
	BT 40	8	130	28			63,56	208	70,43	208
	BT 40	10	130	35			59,43	210	66,40	210
	BT 40	12	130	42			59,43	212	66,40	212
	BT 40	16	130	48			63,92	216	70,80	216
	BT 40	20	130	52			63,92	220	70,80	220
	BT 40	25	130	65			76,48	225	86,76	225
	BT 50	6	130	25			99,99	406		
	BT 50	8	130	28			99,99	408		
	BT 50	10	130	35			95,40	410		
	BT 50	12	130	42			95,40	412		
	BT 50	16	130	48			95,40	416		
	BT 50	20	130	52			95,40	420		
	BT 50	25	130	65			99,99	425		
	BT 50	32	130	72			100,90	432		

16

Spare parts cylindrical shank adapters (Whistle Notch)

		W7			Y8			Y8	
		 Grubscrew			 Stop screw IK			 Stop screw IK	
Spare parts DCONWS $_{H4}$		**Article no. 62 950 ...**				**Article no. 81 950 ...**			**Article no. 83 950 ...**
		EUR				EUR			EUR	
6	M6x10	0,66	**006**					M5x35	1,83	**033**
8	M8x10	0,77	**008**					M6x35	1,50	**034**
10	M10x12	1,02	**010**					M8x35	1,63	**035**
12 - 14	M12x16	1,03	**012**					M10x35	1,63	**036**
16 - 18	M14x16	1,28	**016**					M12x40	2,00	**037**
20	M16x16	1,55	**020**					M16x45	2,25	**272**
25	M18x2x20	2,84	**025**					M20x35	2,50	**290**
32	M20x2x20	3,15	**032**					M20x35	2,50	**290**
40	M20x2x20	3,15	**032**	M22x1,5x15	3,44	**057**				

Stop screw 81 950 ... only use for Article 81 506 ...!

Accessories

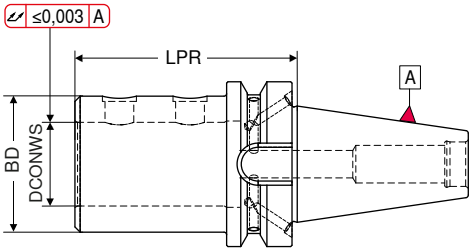


Pull studs
→ 91–92



Others
→ 17|34

Indexable insert drill adapter JIS B 6339 MAS-BT







AD/B
G 6,3 n_{max} 15000

2E/45

Adapter	DCONWS	LPR	BD	Article no. 10 841 ...	
	mm	mm	mm	EUR	
BT 40	20	75	40	129,30	**120**
BT 40	25	80	45	129,30	**125**
BT 40	32	85	52	129,30	**132**
BT 50	20	85	40	164,30	**220**
BT 50	25	90	45	164,30	**225**
BT 50	32	95	52	164,30	**232**
BT 50	40	105	65	164,30	**240**
BT 50	50	113	75	164,30	**250**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling.**

2A/28



Grubscrew

Spare parts DCONWS		Article no. 10 950 ...	
		EUR	
20	M10x1x10	3,84	**001**
25 - 32	M12x1x10	3,84	**002**
40 - 50	M16x1x12	3,84	**003**

Accessories



Pull studs
→ 91–92

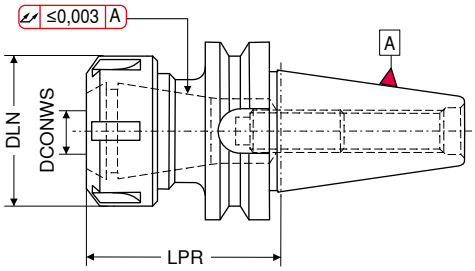


Others
→ 17|34

16

ER-Collet chuck

Scope of supply:
Holder with lock nut and adjustable back stop





	Adapter	DCONWS	LPR	DLN	TQX	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 508 ...		AD/B G 6,3 n_{max} 12000 Y8 Article no. 81 508 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 508 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 508 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 509 ...	
		mm	mm	mm	Nm		EUR		EUR		EUR		EUR		EUR	
short	BT 30	1 - 10	70	28	8 - 56	426E (ER16)	84,83	010								
	BT 30	1 - 16	70	42	24 - 104	430E (ER25)	84,83	016								
	BT 30	2 - 20	70	50	24 - 136	470E (ER32)	84,83	020								
	BT 40	1 - 10	60	32	8 - 56	426E (ER16)							57,13	110	65,94	110
	BT 40	1 - 16	70	42	24 - 104	430E (ER25)							59,71	116	68,69	116
	BT 40	2 - 20	70	50	24 - 136	470E (ER32)							59,89	120	68,88	120
	BT 40	3 - 26	70	63	176	472E (ER40)							62,27	126	71,26	126
	BT 50	1 - 10	75	32	8 - 56	426E (ER16)					76,30	910				
	BT 50	1 - 16	75	42	24 - 104	430E (ER25)					68,88	916				
	BT 50	2 - 20	75	50	24 - 136	470E (ER32)					72,45	220				
	BT 50	4 - 26	75	63	176	472E (ER40)					73,92	226				
long	BT 30	1 - 10	100	28	8 - 56	426E (ER16)	118,50	210								
	BT 30	1 - 16	100	42	24 - 104	430E (ER25)	118,50	216								
	BT 40	1 - 10	120	32	8 - 56	426E (ER16)							62,64	410	71,53	410
	BT 40	1 - 16	120	42	24 - 104	430E (ER25)							65,21	416	74,20	416
	BT 40	2 - 20	120	50	24 - 136	470E (ER32)							65,39	420	74,38	420
	BT 40	3 - 26	100	63	176	472E (ER40)			81,36	426						
	BT 50	1 - 10	100	32	8 - 56	426E (ER16)					85,20	510				
	BT 50	1 - 16	100	42	24 - 104	430E (ER25)					70,52	516				
	BT 50	2 - 20	100	50	24 - 136	470E (ER32)					75,47	520				
	BT 50	3 - 26	100	63	176	472E (ER40)					79,61	526				
extra-long	BT 40	1 - 10	160	28	8 - 56	426E (ER16)			87,66	510						
	BT 40	1 - 16	160	42	24 - 104	430E (ER25)			86,82	516						
	BT 40	2 - 20	160	50	24 - 136	470E (ER32)			86,82	520						
	BT 40	3 - 26	160	63	176	472E (ER40)			91,75	526						
	BT 50	1 - 16	160	42	24 - 104	430E (ER25)					78,14	616				
	BT 50	2 - 20	160	50	24 - 136	470E (ER32)					86,11	620				

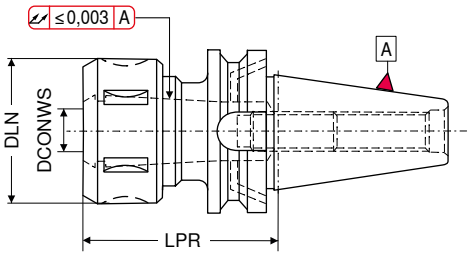
Spare parts

for collet	W7 Lock nut Article no. 62 950 ... EUR		Y8 Lock nut IK Article no. 83 950 ... EUR		W7 Lock nut Article no. 62 950 ... EUR		Y8 Y clamping key Article no. 83 357 ... EUR		Y8 Stop screw IK Article no. 81 950 ... EUR		Y8 Stop screw IK Article no. 83 950 ... EUR	
426E (ER16) / BT30-BT50	17,82	044			17,82	054	16,04	116	1,63	053		
430E (ER25) / BT30			34,72	055	19,92	055	17,72	125	2,00	054		
430E (ER25) / BT40, BT50			34,72	055	19,92	055	17,72	125	2,25	055	2,00	010
470E (ER32) / BT30			36,95	056	18,56	056	24,12	132	1,63	053		
470E (ER32) / BT40, BT50			36,95	056	18,56	056	24,12	132	3,44	057	2,00	010
472E (ER40) / BT30-BT50			43,57	057	18,04	057	26,53	140	3,44	057	2,25	011

Backstop screw 81 950... and nut 62 950 044 only for use with article 81 508...!

OZ-Collet chuck

▲ Clamping nut with ball bearings





	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 512 ... EUR		AD G 6,3 n_{max} 8000 Y8 Article no. 82 505 ... EUR		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 505 ... EUR		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 512 ... EUR	
short	BT 30	2 - 16	60	43	24 - 104	415E / 421E	89,76	025						
	BT 30	2 - 25	80	60	24 - 176	459E / 462E	94,37	035						
	BT 40	2 - 16	70	43	80 - 90	415E / 421E					71,53	116	80,52	116
	BT 40	2 - 25	70	60	90 - 100	459E / 462E					74,75	125	83,73	125
	BT 50	2 - 25	90	60	90 - 100	459E / 462E			88,69	325				
	BT 50	4 - 32	100	72	110 - 120	460E / 467E			92,61	332				
long	BT 40	2 - 16	120	43	80 - 90	415E / 421E					76,03	416	85,01	416
	BT 40	2 - 25	120	60	90 - 100	459E / 462E					79,06	425	88,04	425
	BT 50	2 - 25	120	60	90 - 100	459E / 462E			91,71	525				
	BT 50	4 - 32	120	72	110 - 120	460E / 467E			100,90	532				

Spare parts for collet		W7 Lock nut Article no. 62 950 ... EUR		Y8 Hook clamping key Article no. 83 354 ... EUR			Y8 Stop screw IK Article no. 81 950 ... EUR			Y8 Stop screw IK Article no. 83 950 ... EUR	
415E / 421E				7,84	116	M16x15	2,25	055			
415E / 421E	M33x1,5	31,56	050	7,84	116				M10x50	2,00	010
459E / 462E	M48x2	34,71	051	10,69	125				M10x50	2,00	010
459E / 462E				10,69	125	M16x15	2,25	055			
460E / 467E	M60x2,5	43,41	052	11,96	132				M10x50	2,00	010

Spare part 81 950 ... only use for article 81 512 ...!

Accessories


OZ Collet → 218


Pull studs → 91–92


Others → 17|34

16

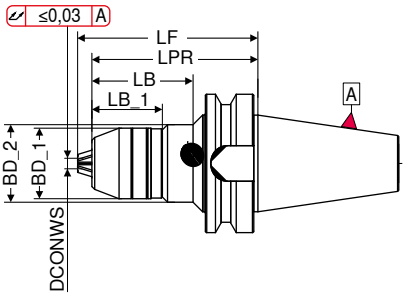
Short drill chuck

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm

Scope of supply:

Toolholder including clamping key SW4

NC 2010





Adapter	DCONWS	BD_1	BD_2	LB_1	LB	LPR	LF	A G 6,3 n_{max} 10000 Y8 Article no. 84 509 ...		AD G 6,3 n_{max} 10000 Y8 Article no. 84 510 ...		AD/B G 6,3 n_{max} 10000 Y8 Article no. 84 511 ...	
	mm	mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
BT 40	0,5 - 13	48,5		50,9		80	89,0	216,00	**413**	219,20	**413**		
BT 40	0,5 - 13	48,5		50,9		90	99,0					248,50	**413**
BT 40	2,5 - 16	51,0		50,9		80	90,5	221,20	**416**	238,00	**416**		
BT 50	2,5 - 16	51,0	56	50,9	73	120	130,5	293,60	**516**	315,60	**516**		

Accessories

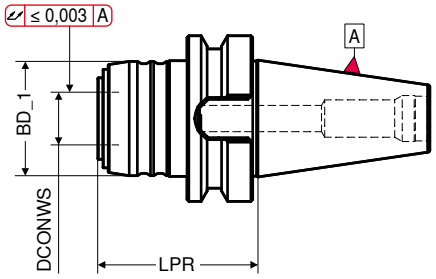



Pull studs → 91–92
Others → 17|34

Can be used with G 2.5 to 30,000 1/min by subsequent balancing !

Synchro tapping chuck with minimum length compensation

- For collets according to DIN 6499
- With length compensation under tension 1,0 mm and under compression 0,2 mm (LZD)
- p_{max} = 50 bar
- For synchro use





AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 515 ...	
			mm	mm	mm	mm	EUR	
BT 40	M3 - M12	1	61	43	20	1,0 / 0,2	161,50	**012**
BT 40	M6 - M20	2	82	60	32	1,0 / 0,2	209,70	**020**
BT 50	M3 - M12	1	72	43	20	1,0 / 0,2	175,10	**112**
BT 50	M6 - M20	2	93	60	32	1,0 / 0,2	269,50	**120**

Accessories



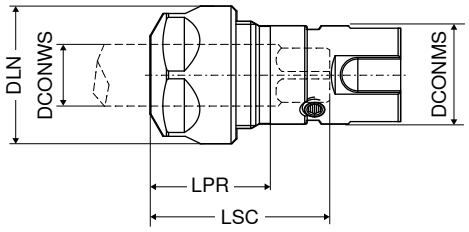
Pull studs → 91–92



Others → 17|34

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut





AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	EUR	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	110,10	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	127,90	**020**

16

Spare parts for synchronous tapping chucks

		W7			Y8			W7		Y8	
		 Lock nut			 Lock nut IK			 Lock nut		 Y clamping key	
Spare parts		**Article no. 62 950 ...**			**Article no. 83 950 ...**			**Article no. 62 950 ...**		**Article no. 83 357 ...**	
for Article no.		EUR			EUR			EUR		EUR	
83 608 012	M22x1,5 - SW25	17,82	044	M22x1,5	30,62	054				16,04	116
83 608 020				M32x1,5	34,72	055	M32x1,5	19,92	055	17,72	125

Accessories

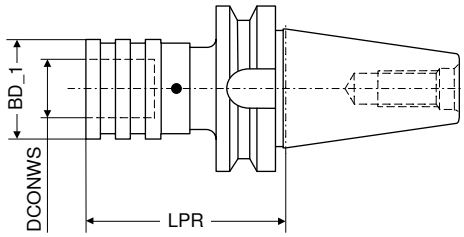


ER collet

→ 212, 214–215

Quick change tap chuck with length compensation

▲ With length compensation under tension and compression (LZD)





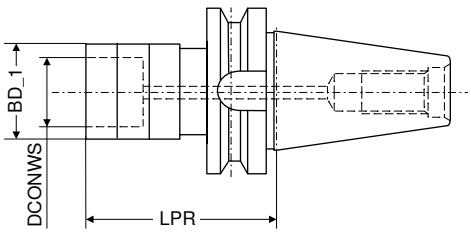


A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 528 ...	
			mm	mm	mm	mm	EUR	
BT 30	M3 - M12	01	63	38	19	9	224,40	**312**
BT 30	M6 - M20	02	96	55	31	15	285,20	**320**
BT 40	M3 - M12	01	68	38	19	9	179,40	**412**
BT 40	M6 - M20	02	93	55	31	15	189,80	**420**
BT 50	M3 - M12	01	80	38	19	9	303,00	**512**
BT 50	M6 - M20	02	102	55	31	15	349,10	**520**

Quick change tap chuck without length compensation

▲ Without length compensation under tension and compression (LZD)







AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	Y8 Article no. 83 525 ...	
			mm	mm	mm	EUR	
BT 40	M3 - M12	01	67	33	19	163,60	**412**
BT 40	M6 - M20	02	90	50	31	168,90	**420**
BT 50	M3 - M12	01	78	33	19	219,20	**512**
BT 50	M6 - M20	02	101	50	31	219,20	**520**

16

Accessories

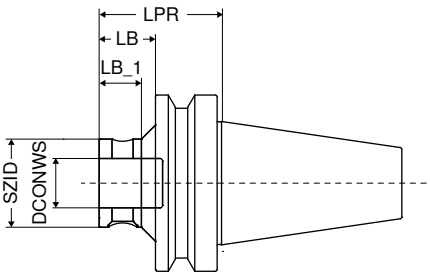

Collet
→ 219–223


Pull studs
→ 91–92


Others
→ 17|34

Adapter with ABS Connection

ABS







AD

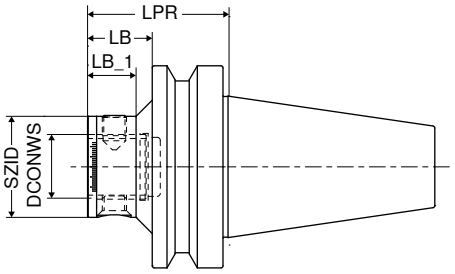
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	NEW 3E Article no. 84 202 ... EUR	
			mm	mm	mm	mm		
BT 40	A5500150	ABS 50	28	60	33		348,40	**04097**
BT 50	A5500350	ABS 50	28	70	32	24	398,30	**05097**

Eccentric adjuster with ABS Connection

▲ Adjustment ± 0.25 mm on diameter

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS







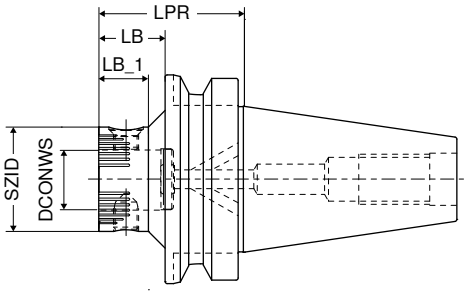
AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	NEW W4 Article no. 84 205 ... EUR	
			mm	mm	mm	mm		
BT 40	A5556150	ABS 50	28	60	33		521,00	**04097**
BT 50	A5556350	ABS 50	28	70	32	24	584,50	**05097**

Torsional vibration dampers with ABS Connection

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS





AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	NEW 3E Article no. 84 208 ... EUR	
			mm	mm	mm	mm		
BT 40	A5502150	ABS 50	28	60	33		748,80	**04097**
BT 50	A5502350	ABS 50	28	70	32	24	905,80	**05097**

Spare parts SZID	XX  Clamping screw Article no. 84 950 ... EUR		XX  Taper screw Article no. 84 950 ... EUR		XX  Set Article no. 84 950 ... EUR	
ABS 50	12,64	**20300**	16,22	**20400**	28,81	**99800**

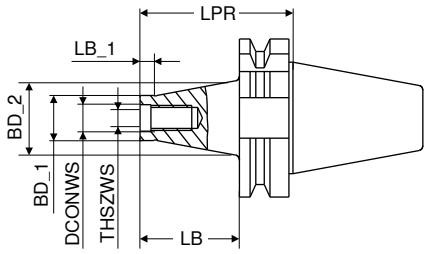
Accessories


Pull studs
→ 91–92


Extension
→ 17|27


Others
→ 17|34

Adapter for milling cutters with threaded end







AD
G 6,3 n_{max} 18000

WA

Adapter	THSZWS	DCONWS	LB	BD_1	BD_2	LB_1	LPR	Article no. 56 711 ...	
		mm	mm	mm	mm	mm	mm	EUR	
BT 40	M8	8,5	25	13,8	15	12	52	95,32	**081**
BT 40	M8	8,5	50	13,8	23	12	77	102,10	**082**
BT 40	M8	8,5	75	13,8	25	12	102	110,10	**083**
BT 40	M10	10,5	25	18,0	23	12	52	95,32	**101**
BT 40	M10	10,5	50	18,0	25	12	77	102,10	**102**
BT 40	M10	10,5	75	18,0	30	12	102	110,10	**103**
BT 40	M12	12,5	25	21,0	24	12	52	95,32	**121**
BT 40	M12	12,5	50	21,0	30	12	77	102,10	**122**
BT 40	M12	12,5	75	21,0	35	12	102	110,10	**123**
BT 40	M12	12,5	100	21,0	38	12	127	118,50	**124**
BT 40	M16	17,0	25	29,0	29	12	52	95,32	**161**
BT 40	M16	17,0	50	29,0	34	12	77	102,10	**162**
BT 40	M16	17,0	75	29,0	35	12	102	110,10	**163**
BT 40	M16	17,0	100	29,0	40	12	127	118,50	**164**

Accessories



Extension-Reduction set
→ 17|19



Pull studs
→ 91–92

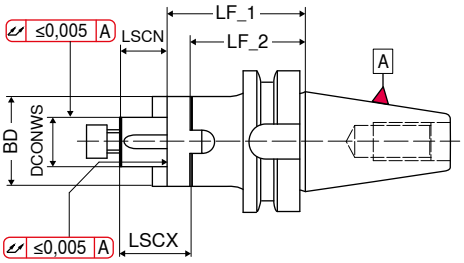


Others
→ 17|34

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:
Toolholder with retaining screw, driving ring and dowel spring





	Adapter	DCONWS	LF_1	BD	LSCX	LSCN	LF_2	A G 6,3 n_{max} 8000 Y8 Article no. 81 516 ...		A G 6,3 n_{max} 8000 Y8 Article no. 82 516 ...	
		mm	mm	mm	mm	mm	mm	EUR		EUR	
short	BT 30	16	45	32	27	17	35	82,21	016 [1]		
	BT 30	22	47	40	31	19	35	82,21	022 [1]		
	BT 30	27	49	46	33	21	37	87,34	027 [1]		
	BT 40	16	55	32	27	17	45			56,49	116
	BT 40	22	55	40	31	19	43			58,70	122
	BT 40	27	55	48	33	21	43			59,89	127
	BT 40	32	60	58	38	24	46			63,28	132
	BT 40	40	60	70	41	27	46			66,58	140 [1]
	BT 50	16	70	32	27	17	60			86,76	216
	BT 50	22	70	40	31	19	58			89,69	222
	BT 50	27	70	48	33	21	58			96,30	227
	BT 50	32	70	58	38	24	56			99,09	232
	BT 50	40	70	70	41	27	56			102,70	240 [1]
long	BT 30	16	80	32	27	17	70	104,70	916 [1]		
	BT 30	22	80	40	31	19	68	104,70	922 [1]		
	BT 30	27	90	48	33	21	78	106,90	927 [1]		
	BT 40	16	100	32	27	17	90	71,40	216		
	BT 40	22	100	40	31	19	88	74,35	222		
	BT 40	27	100	48	33	21	88	75,70	227		
	BT 40	32	100	58	38	24	86	79,90	232		
	BT 40	40	100	70	41	27	86	84,09	240		

1) With cross screw

Spare parts DCONWS	Parallel key Y8 Article no. 83 950 ... EUR		Drive ring Y8 Article no. 83 370 ... EUR		Cross nut key Y8 Article no. 83 368 ... EUR		Retaining screw Y8 Article no. 83 367 ... EUR		Clamping screw Y8 Article no. 83 950 ... EUR	
16	1,63	284	9,91	116	10,69	116	3,23	016	2,88	113
22	1,63	285	11,01	122	13,32	122	3,54	022	3,33	124
27	3,15	286	11,84	127	17,09	127	4,53	027	3,67	125
32	1,87	287	14,16	132	22,02	132	7,28	032	4,56	126
40	2,00	288	21,07	140	30,73	140	11,54	040	6,48	112

Accessories


Pull studs
→ 91–92


Milling Adapter Rings
→ 17|28

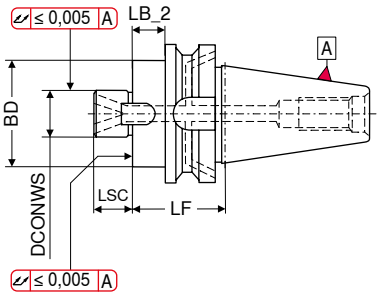

Others
→ 17|34

16

Shell mill adapter

▲ With fixed drive dogs and enlarged contact face for milling cutters with transverse groove

Scope of supply:
Toolholder with retaining screw





	Adapter	DCONWS	LB_2	LF	BD	LSC	A G 6,3 n_{max} 8000 Y8 Article no. 81 514 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 514 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 514 ...	
		mm	mm	mm	mm	mm	EUR		EUR		EUR	
short	BT 30	16	18	40	38	17	77,28	016 [2]				
	BT 30	22	18	40	48	19	77,28	022 [2]				
	BT 30	27	18	40	58	21	82,21	027 [2]				
	BT 30	32	28	50	78	24	90,17	032 [2]				
	BT 40	16	25	52	38	17					56,49	116
	BT 40	22	25	52	48	19					59,80	122
	BT 40	27	25	52	58	21					60,98	127
	BT 40	32	23	50	78	24					64,20	132
	BT 40	40	23	50	88	27					69,80	140 [1]
	BT 50	16	25	63	38	17			74,66	316		
	BT 50	22	25	63	48	19			76,48	322		
	BT 50	27	25	63	58	21			79,06	327		
	BT 50	32	22	60	78	24			81,25	332		
	BT 50	40	22	60	88	27			82,36	340 [1]		
long	BT 40	16	73	100	38	17					58,42	416
	BT 40	22	73	100	48	19					60,35	422
	BT 40	27	73	100	58	21					61,35	427
	BT 40	32	73	100	78	24					64,29	432
	BT 40	40	73	100	88	27					67,41	440 [1]
	BT 50	16	62	100	38	17			81,62	616		
	BT 50	22	62	100	48	19			83,55	622		
	BT 50	27	62	100	58	21			86,02	627		
	BT 50	32	62	100	78	24			88,69	632		
	BT 50	40	62	100	88	27			90,63	640 [1]		
medium length	BT 40	16	103	130	38	17					62,09	816
	BT 40	22	103	130	48	19					64,20	822
	BT 40	27	103	130	58	21					65,21	827
	BT 40	32	103	130	78	24					68,33	832
	BT 40	40	103	130	88	27					71,35	840 [1]
	BT 50	16	92	130	38	17			87,03	916		
	BT 50	22	92	130	48	19			88,96	922		
	BT 50	27	92	130	58	21			91,62	927		
	BT 50	32	92	130	78	24			94,50	932		
	BT 50	40	92	130	88	27			96,30	940 [1]		
extra-long	BT 40	16	133	160	38	17					64,20	516
	BT 40	22	133	160	48	19					66,30	522
	BT 40	27	133	160	58	21					67,22	527
	BT 40	32	133	160	78	24					70,34	532
	BT 40	40	133	160	88	27					73,28	540 [1]
	BT 50	16	122	160	38	17			90,18	716		
	BT 50	22	122	160	48	19			91,71	722		
	BT 50	27	122	160	58	21			94,50	727		
	BT 50	32	122	160	78	24			97,20	732		
	BT 50	40	122	160	88	27			99,09	740 [1]		

1) With cross screw and 4 holes M12, Pitch Circle diameter = 66.7 mm, coolant outlet on the outer diameter of the spigot (DCONWS)!
2) With cross screw

Spare parts facemill adapters

		Y8  Driver		Y8  Cross nut key			Y8  Retaining screw			Y8  Clamping screw	
Spare parts DCONWS		**Article no. 83 950 ...**		**Article no. 83 368 ...**			**Article no. 83 367 ...**			**Article no. 83 950 ...**	
		EUR		EUR			EUR			EUR	
16	8x9x17,5	7,23	120	10,69	116	M8	3,23	016	M8x25	2,88	113
22	10x11x20,5	7,49	121	13,32	122	M10	3,54	022	M10x25	3,33	124
27	12x13x24,3	8,48	122	17,09	127	M12	4,53	027	M12x30	3,67	125
32	14x21x21,2	8,74	123	22,02	132	M16	7,28	032	M16x35	4,56	126
40	15,9x16,3x19,5	11,22	295	30,73	140	M20	11,54	040	M20x40	6,48	112

		Y8  Drive dogs			Y8  Drive screw			Y8  Screw for drivers	
DCONWS		**Article no. 81 950 ...**			**Article no. 81 950 ...**			**Article no. 83 950 ...**	
		EUR			EUR			EUR	
16	8x8x14	7,23	001	M3x8	0,38	010	M3x8	0,38	296
22	10x10x17	7,49	002	M4x8	0,48	011	M4x12	0,48	297
27	12x14x20	8,48	003	M4x14	0,57	012	M5x12	0,57	136
32	14x14x22	8,74	004	M5x13	0,64	013	M5x20	0,64	137
40							M6x16	0,75	138

Spare part 81 950 ... only use for article 81 514 ...!

Accessories


Pull studs
→ 91–92


Extensions
→ 17|26

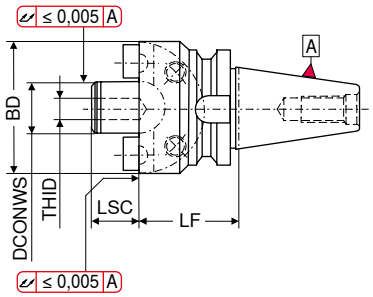

Others
→ 17|34

16

Large diameter facemill adapter

▲ For milling cutters with keyway or drive slot DIN 6357

Scope of supply:
Holder with integrated drive dogs according to DIN 2079 and 4 fixation screws







A

Adapter	DCONWS	LF	BD	LSC	THID	Y8 Article no. 82 519 ...	
	mm	mm	mm	mm		EUR	
BT 50	40	70	89	30	M20	133,90	**240**
BT 50	60	80	129	40	M30	162,40	**260**

		Y8 Screw for drivers			Y8 Driver			2A/28 Socket head screw			Y8 clamping screw		
Spare parts DCONWS		**Article no. 83 950 ...**			**Article no. 83 950 ...**			**Article no. 70 950 ...**			**Article no. 83 950 ...**		
		EUR			EUR			EUR			EUR		
40	M6x16	0,75	**138**	15,9x16,3x19,5	11,22	**295**				M12x50	3,65	**140**
60				25,4x16,3x26,5	14,57	**298**	M12x30	8,45	**181**	M16x45	9,30	**160**

Accessories

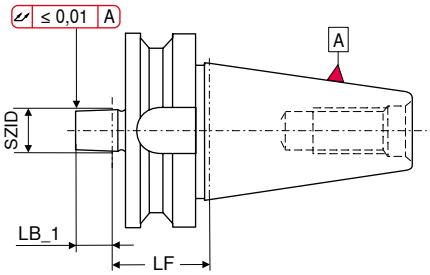


Pull studs
→ 91–92



Others
→ 17|34

Drill chuck adapter





Adapter	SZID	LF	LB_1	A G 6,3 n_{max} 8000 Y8 Article no. 81 513 ...		A G 6,3 n_{max} 8000 Y8 Article no. 82 513 ...	
		mm	mm	EUR		EUR	
BT 30	B12	25	18,5	71,40	**012**		
BT 30	B16	25	24,0	71,40	**016**		
BT 40	B12	40	18,5			44,30	**112**
BT 40	B16	40	24,0			44,30	**116**
BT 40	B18	32	32,0	51,38	**118**		
BT 50	B16	50	24,0			67,22	**216**
BT 50	B18	50	32,0			67,22	**218**

Spare parts SZID		Y8  Drill chuck Article no. 83 636 ... EUR			Y8  Drill chuck Article no. 83 636 ... EUR	
B12	0 - 8 mm	88,19	**012**	0 - 10 mm	104,00	**112**
B16	1 - 13 mm	124,80	**016**	3 - 16 mm	104,90	**116**
B18				3 - 16 mm	133,20	**018**

Accessories

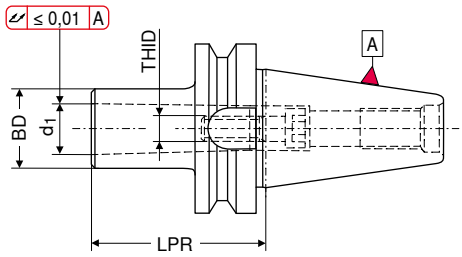



Pull studs → 91–92
Others → 17|34

16

Milling sleeve adapters DIN 6364 for DIN 228-2C Morse taper shanks with thread

Scope of supply:
Holder with retaining screw






AD
G 6,3 n_{max} 8000


AD
G 6,3 n_{max} 8000

	Adapter	d_1	LPR mm	BD mm	THID	Y8 Article no. 81 527 ... EUR		Y8 Article no. 82 527 ... EUR	
short	BT 40	MK1	50	25	M6	68,79	010		
	BT 40	MK2	50	32	M10	68,79	020		
	BT 40	MK3	70	40	M12			56,49	030
	BT 40	MK4	95	48	M16			58,70	040
	BT 50	MK1	45	25	M6			79,70	210
	BT 50	MK2	60	32	M10			78,87	220
	BT 50	MK3	65	40	M12			78,87	230
	BT 50	MK4	95	48	M16			81,71	240
	BT 50	MK5	118	63	M20			92,61	250

Disassembly instructions can be found in → **Chapter 17, Accessories.**


Counterscrew


Hollow key with nose


Fixing ring


Fixing ring

Spare parts for Article no.		Y8 Article no. 83 950 ... EUR			Y8 Article no. 83 359 ... EUR			Y8 Article no. 81 950 ... EUR			Y8 Article no. 83 950 ... EUR		
81 527 010								M16x10	9,02	150			
81 527 020								M16x8	9,02	151			
82 527 030	M5x6	0,48	030		17 x 117	20,87	017				M20x1,5x10x13	6,80	269
82 527 040	M5x6	0,48	030		23 x 145	25,27	023				M26x1,5x17	8,30	270
82 527 210	M5x8	0,48	031		20 x 135	21,92	020				M24x10x6,5	7,34	266
82 527 220	M5x8	0,48	031		20 x 135	21,92	020				M24x10x10,5	7,34	268
82 527 230	M5x8	0,48	031		17 x 117	20,87	017				M20x1,5x10x13	6,80	269
82 527 240	M5x8	0,48	031		23 x 145	25,27	023				M26x1,5x17	8,30	270
82 527 250	M5x8	0,48	031		33 x 175	31,35	033				M36x1,5x21	10,80	271

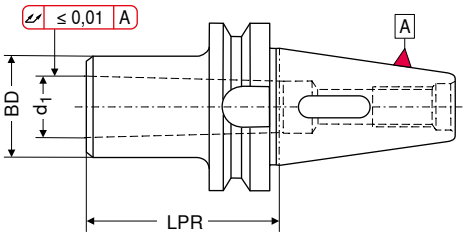

Morse taper clamping screw


Clamping Screw


Counterscrew

Spare parts for Article no.		Y8 Article no. 83 950 ... EUR			Y8 Article no. 81 950 ... EUR			Y8 Article no. 81 950 ... EUR		
81 527 010				M6x39	6,67	140	M5x6	0,68	033	
81 527 020				M10x30	9,82	141	M5x6	0,68	033	
82 527 030	M12x35	0,86	018							
82 527 040	M16x40	2,74	019							
82 527 210	M6x30	0,69	260							
82 527 220	M10x30	0,86	017							
82 527 230	M12x35	0,86	018							
82 527 240	M16x40	2,74	019							
82 527 250	M20x50	6,88	262							

Taper sleeve adapter DIN6383 for DIN 228-2D Morse taper shanks





Adapter	d_1	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 525 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 525 ...	
		mm	mm	EUR		EUR	
BT 30	MK1	45	25	73,40	**010**		
BT 30	MK2	60	32	73,40	**020**		
BT 30	MK3	75	40	79,80	**030**		
BT 40	MK1	50	25			49,71	**110**
BT 40	MK2	50	32			49,71	**120**
BT 40	MK3	70	40			53,10	**130**
BT 40	MK4	95	48			55,40	**140**
BT 50	MK1	45	25			67,96	**210**
BT 50	MK2	60	32			70,34	**220**
BT 50	MK3	65	40			70,34	**230**
BT 50	MK4	95	48			72,63	**240**
BT 50	MK5	105	63			78,97	**250**

Accessories


Morse taper adapter sleeve
→ 17|4

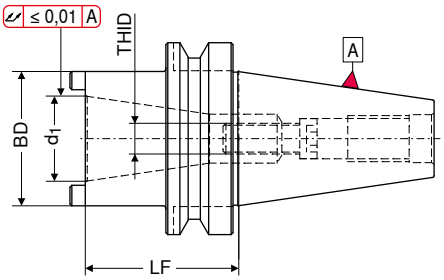

Pull studs
→ 91–92


Others
→ 17|34

Milling adapter sleeve

- For mounting tool holders according to DIN 2080
- With an extended retaining screw also tool holders according to DIN 69871, MAS-BT and ANSI-CAT can be clamped

Scope of supply:
Holder with clamping screw for DIN 2080 adapters





Adapter	d_1	LF	BD	THID	A Y8 Article no. 81 518 ...		A Y8 Article no. 82 518 ...	
		mm	mm		EUR		EUR	
BT 40	SK 30	60	51	M12	119,60	**106**		
BT 40	SK 40	100	63	M16	119,60	**110**		
BT 50	SK 40	80	70	M16			127,40	**250**

Spare parts for Article no.	Y8 Clamping screw SK Article no. 83 950 ...		Y8 Clamping Screw Article no. 81 950 ...		Y8 Counterscrew Article no. 81 950 ...		Y8 Hollow key with nose Article no. 83 359 ...		Y8 Fixing ring Article no. 81 950 ...	
	EUR		EUR		EUR		EUR		EUR	
81 518 106			11,74	**160**	0,68	**033**	20,87	**017**	10,91	**170**
81 518 110			15,62	**161**	0,68	**033**	25,27	**023**	15,52	**171**
82 518 250	5,84	**009**								

Required screw length when retracting of DIN 69871, MAS-BT or DIN 2080 shanks

MAS-BT Suitable for article no.:	Taper Shank Ø d_1	Clamping screw length DIN 69871, MAS-BT THID	Clamping screw length DIN 2080 THID
81 518 106	SK 30 – BT 30	M12x55	M12x35 – **81 950 160**
81 518 110	SK 40 – BT 40	M16x60	M16x35 – **81 950 161**
82 518 250	SK 50 – BT 50	M16x70 – **83 950 256**	M16x40 – **83 950 009**

Spare part 81 950 ... only use for article 81 518 ...!

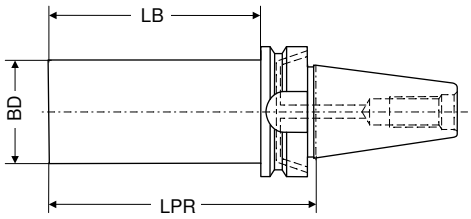
Accessories




Pull studs	Others
→ 91–92	→ 17|34

Blank

- Material: Steel 17CrNiMo5
- For production of special tools
- Diameter BD turned with 0.5 mm oversize
- Taper hardened and ground
- Special tool area in soft state



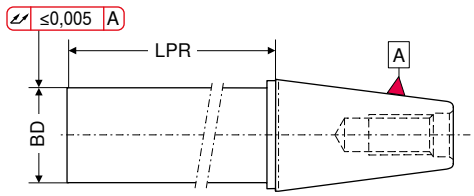


Adapter	BD	LPR	LB	AD/B Y8 Article no. 82 523 ...		A Y8 Article no. 82 523 ...	
	mm	mm	mm	EUR		EUR	
BT 40	63,0	250	223	65,84	**040**		
BT 50	63,5	300	262			116,50	**050**

Test bar

- Without clamping slots
- MAS BT 40 special pull stud with LF = 32 mm

Scope of supply:
In wooden box





Adapter	BD	LPR	Y8 Article no. 82 456 ...	
	mm	mm	EUR	
SK / BT 40	40	330	287,10	**040**
SK / BT 50	50	330	354,00	**050**

Accessories




Pull studs	Others
→ 49, 91–92	→ 17|34

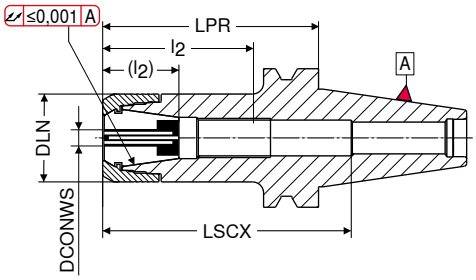
16

ER Precision Collet chuck – BT-FC

- With face contact
- For standard or sealed nuts
- Maximum clamping range covered according to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P







AD
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 525 ... EUR	
BT-FC 30	1 - 10	75	30	97	28 - 45 (14 - 31)	426E (ER16)	150,10	**002**
BT-FC 30	2 - 16	75	40	72	38 - 56 (23 - 39)	430E (ER25)	150,00	**012**
BT-FC 30	2 - 20	75	50	84	42 - 62 (24 - 45)	470E (ER32)	150,00	**022**
BT-FC 40	1 - 10	75	30	90	38 - 53 (29 - 39)	426E (ER16)	153,10	**102**
BT-FC 40	2 - 16	75	40	100	42 - 59 (36 - 41)	430E (ER25)	153,10	**112**
BT-FC 40	2 - 20	75	50	100	42 - 76 (42 - 52)	470E (ER32)	153,10	**122**

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer


Lock nut IK


Lock nut


Stop screw 2


Stop screw 1

Spare parts for Article no.	Y8 Article no. 84 950 ... EUR		Y8 Article no. 84 950 ... EUR			Y8 Article no. 83 950 ... EUR			Y8 Article no. 83 950 ... EUR	
84 525 002	35,19	**011**	28,15	**001**	M11x1 - SW6	14,08	**341**	M11x1 - SW6	9,93	**337**
84 525 012	38,22	**013**	31,16	**003**	M18x1,5 - SW6	15,90	**432**	M18x1,5 - SW6	11,42	**431**
84 525 022	40,23	**015**	33,15	**005**	M22x1,5 - SW6	15,90	**402**	M22x1,5 - SW6	11,42	**401**
84 525 102	35,19	**011**	28,15	**001**	M11x1 - SW6	14,08	**341**	M11x1 - SW6	9,93	**337**
84 525 112	38,22	**013**	31,16	**003**	M18x1,5 - SW6	15,90	**432**	M18x1,5 - SW6	11,42	**431**
84 525 122	40,23	**015**	33,15	**005**	M22x1,5 - SW6	15,90	**402**	M22x1,5 - SW6	11,42	**401**

Accessories


ER collet
→ 206, 208–211, 213


Sealing ring
→ 207


Roll key
→ 17|36


Roll key device
→ 17|36

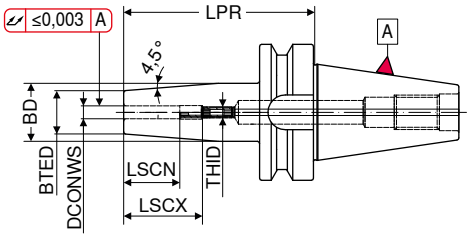

Pull studs
→ 91–92


Others
→ 17|34

Shrink fit adapters 4.5° – BT-FC

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG







AD
G 2,5 n_{max} 25000



AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 84 325 ...	EUR	Y8 Article no. 84 325 ...	EUR
		mm	mm	mm	mm	mm	mm					
short	BT-FC 30	3	85	10	17	28	12	M6	144,70	003		
	BT-FC 30	4	85	15	22	28	16	M6	144,70	004		
	BT-FC 30	5	85	15	22	30	20	M6	144,70	005		
	BT-FC 30	6	85	21	27	36	26	M5	144,70	006		
	BT-FC 30	8	85	21	27	36	26	M6	144,70	008		
	BT-FC 30	10	85	24	32	41	31	M8x1	144,70	010		
	BT-FC 30	12	85	24	32	47	37	M10x1	144,70	012		
	BT-FC 30	16	85	27	34	50	40	M12x1	144,70	016		
	BT-FC 30	20	85	33	42	52	42	M16x1	144,70	020		
	BT-FC 40	3	90	10	17	28	12	M6			127,90	103
	BT-FC 40	4	90	15	22	28	16	M6			127,90	104
	BT-FC 40	5	90	15	22	30	20	M6			127,90	105
	BT-FC 40	6	90	21	27	36	26	M5			127,90	106
	BT-FC 40	8	90	21	27	36	26	M6			127,90	108
	BT-FC 40	10	90	24	32	41	31	M8x1			127,90	110
	BT-FC 40	12	90	24	32	47	37	M10x1			127,90	112
	BT-FC 40	16	90	27	34	50	40	M12x1			127,90	116
	BT-FC 40	20	90	33	42	52	42	M16x1			127,90	120
	BT-FC 40	25	100	44	53	58	48	M16x1			127,90	125

Y7



Stop screw IK

Y7



Stop screw IK

Spare parts DCONWS		Article no. 83 950 ...	EUR		Article no. 83 950 ...	EUR	
3 - 5	M6x14 - SW2		8,11	417			
6					M5x12,5 - SW2,5	8,11	418
8					M6x12,5 - SW3	8,11	419
10					M8x1x13,5 - SW3	8,11	420
12					M10x1x13,5 - SW5	8,11	421
16					M12x1x13,5 - SW5	8,11	422
20 - 25					M16x1x13,5 - SW8	9,34	424

Accessories



Shrink fit extension
→ 17|10



Pull studs
→ 91–92



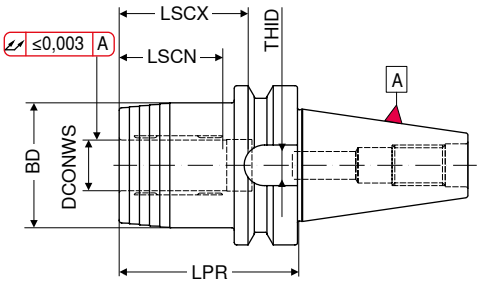
Others
→ 17|34

16

High pressure chuck, short and stable version – BT-FC

▲ With face contact
▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 527 ... EUR	
	mm	mm	mm	mm	mm			
BT-FC 40	20	72,5	49	51	40	M16x1x13,5	258,00	**120**

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Spare parts		Y7 Clamping key – T Article no. 80 397 ... EUR		Y7 Pressure screw Article no. 83 950 ... EUR		Y7 Stop screw IK Article no. 83 950 ... EUR	
for Article no.							
83 527 120	SW5	4,24	**050**	M10x1x10	11,84	**158**	M8x1x13,5 - SW3	8,11	**420**

Accessories


Reduction sleeve
→ 17|32


Pull studs
→ 91–92

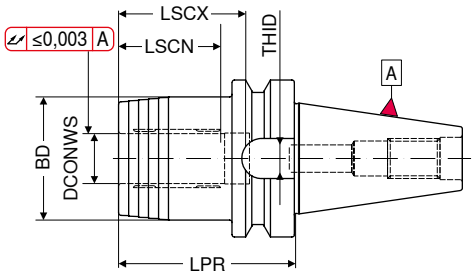

Others
→ 17|34

Hydraulic chuck MAS BT, short and stable version – BT-FC

- With face contact
- For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 84 518 ...	EUR	
	mm	mm	mm	mm	mm				
BT-FC 40	20	72,5	49,5	51	41	M16x1		232,80	**120**
BT-FC 50	32	90,0	72,0	61	51	M16x1		310,40	**332**



Pressure screw



Stop screw IK

Spare parts DCONWS	Y7 Article no. 83 950 ...	EUR		Y7 Article no. 83 950 ...	EUR	
20 - 32	M10x1x12	5,48	**440**	M16x1x13,5 - SW8	9,34	**424**

Accessories



Reduction sleeve
→ 17|32



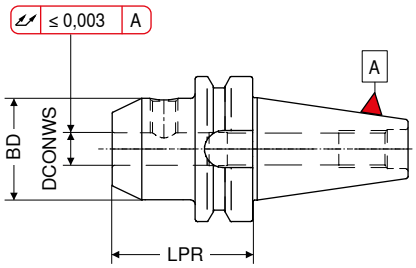
Pull studs
→ 91–92



Others
→ 17|34

Cylindrical shank adapter (Weldon) – BT-FC

- With face contact
- For shanks according to DIN 6535 / 1835 B with lateral clamping flat







AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS $_{H4}$	LPR	BD	Article no. 84 552 ...	
		mm	mm	mm	EUR	
short	BT-FC 30	6	50	25	75,18	006
	BT-FC 30	8	50	28	75,18	008
	BT-FC 30	10	50	35	75,18	010
	BT-FC 30	12	50	42	75,18	012
	BT-FC 30	16	63	48	80,63	016
	BT-FC 30	20	63	52	80,63	020
	BT-FC 40	6	50	25	95,32	106
	BT-FC 40	8	50	28	92,17	108
	BT-FC 40	10	63	35	92,17	110
	BT-FC 40	12	63	42	92,17	112
	BT-FC 40	16	63	48	92,17	116
	BT-FC 40	20	63	52	92,17	120
	BT-FC 40	25	90	65	122,70	125
	BT-FC 40	32	100	72	122,70	132
	BT-FC 50	6	63	25	141,60	306
	BT-FC 50	8	63	28	137,40	308
	BT-FC 50	10	63	35	137,40	310
	BT-FC 50	12	80	42	137,40	312
	BT-FC 50	16	80	48	137,40	316
	BT-FC 50	20	80	52	137,40	320
	BT-FC 50	25	100	65	157,30	325
	BT-FC 50	32	105	72	157,30	332

W7



Grubscrew

Spare parts DCONWS $_{H4}$		Article no. 62 950 ...	
		EUR	
6	M6x10	0,66	006
8	M8x10	0,77	008
10	M10x12	1,02	010
12	M12x16	1,03	012
16	M14x16	1,28	016
20	M16x16	1,55	020
25	M18x2x20	2,84	025
32	M20x2x20	3,15	032

Accessories



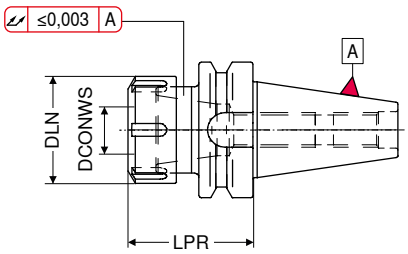


Pull studs	Others
→ 91–92	→ 17|34

ER Collet chuck – BT-FC

▲ With face contact

Scope of supply:
Toolholder including nut







AD
G 2,5 n_{max} 20000

	Adapter	DCONWS	LPR	DLN	TQX	for collet	Y8 Article no. 84 557 ... EUR	
		mm	mm	mm	Nm			
short	BT-FC 30	1 - 10	63	28	56	426E (ER16)	84,83	010
	BT-FC 30	1 - 16	60	42	104	430E (ER25)	84,83	016
	BT-FC 30	2 - 20	60	50	136	470E (ER32)	84,83	020
	BT-FC 40	1 - 10	63	28	56	426E (ER16)	106,90	110
	BT-FC 40	1 - 16	60	42	104	430E (ER25)	106,90	116
	BT-FC 40	2 - 20	60	50	136	470E (ER32)	106,90	120
	BT-FC 50	1 - 16	70	42	104	430E (ER25)	145,70	316
	BT-FC 50	2 - 20	70	50	136	470E (ER32)	145,70	320
long	BT-FC 50	1 - 10	100	28	56	426E (ER16)	145,70	310

Spare parts		W7 Lock nut Article no. 62 950 ... EUR		W7 Lock nut Article no. 62 950 ... EUR		Y8 Y clamping key Article no. 83 357 ... EUR		Y8 Stop screw IK Article no. 81 950 ... EUR	
for collet									
426E (ER16) / BT30-BT50	M22x1,5 - SW25	17,82	044					M12x15	2,00	054
430E (ER25) / BT30-BT50				M32x1,5	19,92	055	17,72	125	M16x15	2,25	055
470E (ER32) / BT30-BT50				M40x1,5	18,56	056	24,12	132	M16x15	2,25	055

Accessories



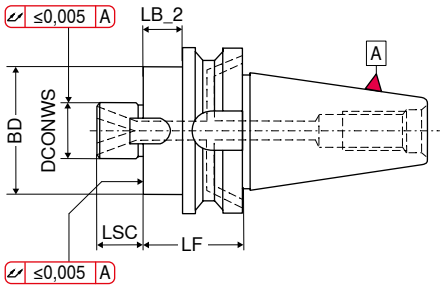


ER collet	Pull studs	Others
→ 214	→ 91–92	→ 17|34

16

Shell mill adapter – BT-FC

- With face contact
- With fixed drive dogs and enlarged contact face for milling cutters with transverse slot







AD
G 6,3 n_{max} 15000

Y8
Article no.
84 562 ...

	Adapter	DCONWS	LB_2	LF	BD	LSC		EUR	
		mm	mm	mm	mm	mm			
short	BT-FC 30	16	18	40	40	17		82,73	016
	BT-FC 30	22	18	40	50	19		82,73	022
	BT-FC 30	27	18	40	60	21		82,73	027
	BT-FC 30	32	28	50	80	24		82,73	032
	BT-FC 40	16	8	35	40	17		99,50	116
	BT-FC 40	22	8	35	50	19		99,50	122
	BT-FC 40	27	8	35	60	21		99,50	127
	BT-FC 40	32	23	50	80	24		99,50	132
	BT-FC 40	40	23	50	89	27		99,50	140
	BT-FC 50	22	12	50	50	19		115,40	322
	BT-FC 50	27	12	50	60	21		115,40	327
	BT-FC 50	32	12	50	80	24		122,70	332
	BT-FC 50	40	17	55	89	27		122,70	340

Y8



Screw for drivers

Y8



Driver

Y8



Clamping screw

Spare parts for Article no.		Article no. 84 950 ... EUR			Article no. 84 950 ... EUR			Article no. 83 950 ... EUR	
84 562 016	M3x12	3,79	162	8x9x11	9,62	157	M8x25	2,88	113
84 562 022	M4x10	3,79	163	10x11,2x13	11,33	158	M10x25	3,33	124
84 562 027	M4x16	3,79	164	12x12,6x15	12,27	159	M12x30	3,67	125
84 562 032	M5x16	3,79	165	14x14x22,5	13,94	160	M16x35	4,56	126
84 562 116	M3x12	3,79	162	8x9x11	9,62	157	M8x25	2,88	113
84 562 122	M4x10	3,79	163	10x11,2x13	11,33	158	M10x25	3,33	124
84 562 127	M4x16	3,79	164	12x12,6x15	12,27	159	M12x30	3,67	125
84 562 132	M5x16	3,79	165	14x14x22,5	13,94	160	M16x35	4,56	126
84 562 140	M5x16	3,79	166	16x16x23	15,52	161	M20x40	6,48	112
84 562 322	M4x10	3,79	163	12x12,6x15	12,27	159	M10x25	3,33	124
84 562 327	M4x16	3,79	164	12x12,6x15	12,27	159	M12x30	3,67	125
84 562 332	M5x16	3,79	165	14x14x22,5	13,94	160	M16x35	4,56	126
84 562 340	M5x16	3,79	166	16x16x23	15,52	161	M20x40	6,48	112

Accessories



Pull studs
→ 91–92

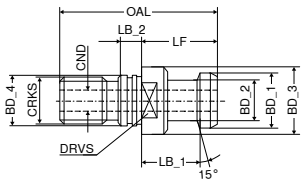


Others
→ 17|34

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 15° Form A

Scope of supply:
Including O-Ring



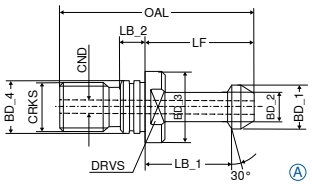


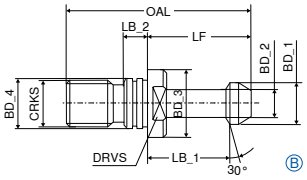
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	Y8 Article no. 83 532 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm	EUR	
BT 40	19	14	23	17	M16	54	29	23	5	5	19	90	6,80	**040**

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 30° Form A and B

Scope of supply:
Including O-Ring







Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 533 ...		Y8 Article no. 82 531 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
BT 30	11	7	16,5	12,5	M12	43	23	18	4,0	2,2	13	60	A			10,04	**030**
BT 40	15	10	23,0	17,0	M16	60	35	28	5,5	4,0	19	90	A			7,61	**040**
BT 50	23	17	38,0	25,0	M24	85	45	35	8,0	6,0	30	145	A			10,32	**050**
BT 30	11	7	16,5	12,5	M12	43	23	18	4,0		13	60	B	9,44	**030**		
BT 40	15	10	23,0	17,0	M16	60	35	28	5,5		19	90	B	5,91	**040**		
BT 50	23	17	38,0	25,0	M24	85	45	35	8,0		30	145	B	9,52	**050**		



O-Ring

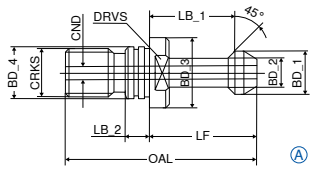
Spare parts BD_4		Y8 Article no. 83 476 ...	
		EUR	
17	BT / SK 40	0,46	**040**
25	BT / SK 50	0,46	**050**

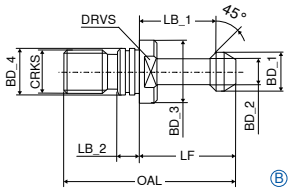
16

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 45° Form A and B

Scope of supply:
Including O-Ring





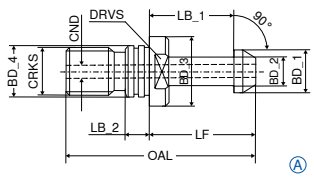


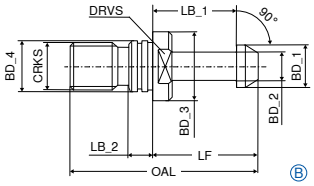
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 530 ...		Y8 Article no. 82 534 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
BT 30	11	7	16,5	12,5	M12	43	23	18	4,0	2,2	13	60	A			10,04	**030**
BT 40	15	10	23,0	17,0	M16	60	35	28	5,5	4,0	19	90	A			7,61	**040**
BT 50	23	17	38,0	25,0	M24	85	45	35	8,0	6,0	30	145	A			10,32	**050**
BT 30	11	7	16,5	12,5	M12	43	23	18	4,0		13	60	B	9,44	**030**		
BT 40	15	10	23,0	17,0	M16	60	35	28	5,5		19	90	B	5,91	**040**		
BT 50	23	17	38,0	25,0	M24	85	45	35	8,0		30	145	B	9,52	**050**		

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 90° Form A and B

Scope of supply:
Including O-Ring







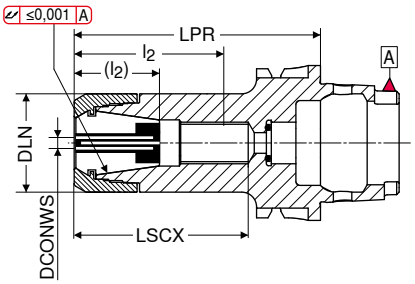
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 536 ...		Y8 Article no. 82 537 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		EUR		EUR	
BT 40	15	10	23	17	M16	60	35	28	5,5	4	19	90	A			7,61	**040**
BT 50	23	17	38	25	M24	85	45	35	8,0	6	30	145	A			10,32	**050**
BT 40	15	10	23	17	M16	60	35	28	5,5		19	90	B	5,91	**040**		
BT 50	23	17	38	25	M24	85	45	35	8,0		30	145	B	9,52	**050**		

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





AD
G 2,5 n_{max} 25000
Y8

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Article no. 84 722 ...	
							EUR	
HSK-A 40	1 - 10	60	30	40	32 - 54	426E (ER16)	130,70	**401**
HSK-A 40	2 - 16	60	40	40		430E (ER25)	143,70	**404**
HSK-A 40	2 - 20	61	50	45		470E (ER32)	167,90	**407**
HSK-A 50	2 - 16	60	40	37		430E (ER25)	143,70	**504**
HSK-A 50	2 - 16	70	40	49	34 - 35	430E (ER25)	145,80	**505**
HSK-A 50	2 - 20	70	50	47		470E (ER32)	176,00	**507**
HSK-A 63	1 - 10	55	30	32		426E (ER16)	119,60	**609**
HSK-A 63	1 - 10	100	30	71	28 - 45 (16 - 31)	426E (ER16)	119,60	**610**
HSK-A 63	1 - 10	130	30	87	26 - 50 (17 - 38)	426E (ER16)	147,80	**613**
HSK-A 63	1 - 10	160	30	106	28 - 45 (16 - 31)	426E (ER16)	165,90	**611**
HSK-A 63	1 - 10	200	30	136	28 - 45 (16 - 31)	426E (ER16)	210,20	**612**
HSK-A 63	2 - 16	60	40	37		430E (ER25)	119,60	**615**
HSK-A 63	2 - 16	100	40	70	35 - 55 (24 - 37)	430E (ER25)	119,60	**616**
HSK-A 63	2 - 16	130	40	89	37 - 60 (12 - 42)	430E (ER25)	157,90	**619**
HSK-A 63	2 - 16	160	40	128	35 - 60 (24 - 42)	430E (ER25)	175,90	**617**
HSK-A 63	2 - 16	200	40	148	35 - 60 (24 - 42)	430E (ER25)	210,10	**618**
HSK-A 63	2 - 20	70	50	46		470E (ER32)	119,60	**620**
HSK-A 63	2 - 20	100	50	71	41 - 57 (26 - 39)	470E (ER32)	119,60	**621**
HSK-A 63	2 - 20	130	50	101	42 - 69 (18 - 41)	470E (ER32)	157,90	**625**
HSK-A 63	2 - 20	160	50	129	52 - 70 (26 - 60)	470E (ER32)	175,90	**622**
HSK-A 63	3 - 26	80	63	56		472E (ER40)	150,80	**626** 1)
HSK-A 100	1 - 10	100	30	70	28 - 48 (16 - 35)	426E (ER16)	220,20	**110**
HSK-A 100	1 - 10	160	30	130	28 - 48 (16 - 35)	426E (ER16)	316,70	**111**
HSK-A 100	2 - 16	100	40	71	38 - 56 (20 - 40)	430E (ER25)	220,20	**116**
HSK-A 100	2 - 16	160	40	105	38 - 68 (20 - 50)	430E (ER25)	316,70	**117**
HSK-A 100	2 - 20	100	50	70	42 - 59 (24 - 40)	470E (ER32)	220,20	**121**
HSK-A 100	2 - 20	160	50	99	42 - 70 (24 - 52)	470E (ER32)	316,70	**122**
HSK-A 100	3 - 26	100	63	65		472E (ER40)	230,20	**126**

1) Non standard groove before tool change collar not according to DIN, not suitable for automatic tool change

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts, ER precision collet chuck

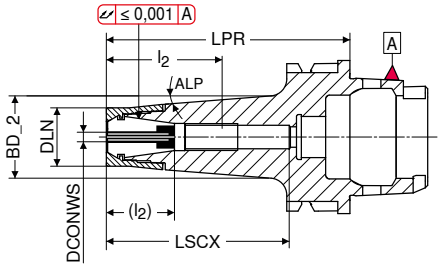
Spare parts	Y8 Lock nut IK		Y8 Lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	EUR		EUR			EUR			EUR	
426E (ER16)	35,19	011	28,15	001	M11x1 - SW6	14,08	341	M11x1 - SW6	9,93	337
430E (ER25)	38,22	013	31,16	003	M18x1,5 - SW6	15,90	432	M18x1,5 - SW6	11,42	431
470E (ER32)	40,23	015	33,15	005	M22x1,5 - SW6	15,90	402	M22x1,5 - SW6	11,42	401
472E (ER40)	54,30	017	45,25	007				M28x1,5 - SW6	10,35	400

ER Precision tapered collet chuck

- For special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





AD
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	BD_2 mm	LSCX mm	l_2 (l_2) mm	ALP	for collet	Y8 Article no. 84 721 ... EUR	
HSK-A 40	1 - 7	100	16	25,3	65	15 - 34 (8 - 25)	4,5°	4008E (ER11)	177,90	307
HSK-A 40	1 - 10	60	24	28,0	43	26 - 30	2,0°	426E (ER16)	155,90	210
HSK-A 40	1 - 10	100	24	30,8	67	26 - 47 (12 - 32)	2,0°	426E (ER16)	155,80	310
HSK-A 50	1 - 7	100	16	24,0	65	15 - 34 (8 - 25)	4,5°	4008E (ER11)	177,90	507
HSK-A 50	1 - 10	65	24	28,9	44	26 - 32	4,5°	426E (ER16)	143,70	710
HSK-A 50	1 - 10	100	24	34,4	77	26 - 47 (12 - 32)	4,5°	426E (ER16)	149,80	810
HSK-A 50	1 - 10	130	24	39,4	102	26 - 47 (12 - 32)	4,5°	426E (ER16)	196,10	910
HSK-A 63	1 - 10	100	24	33,8	74	28 - 48 (20 - 35)	4,5°	426E (ER16)	127,60	610
HSK-A 63	1 - 10	160	24	36,0	106	28 - 48 (20 - 35)	2,5°	426E (ER16)	173,90	611
HSK-A 63	2 - 20	75	50		51		4,0°	470E (ER32)	129,70	632

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

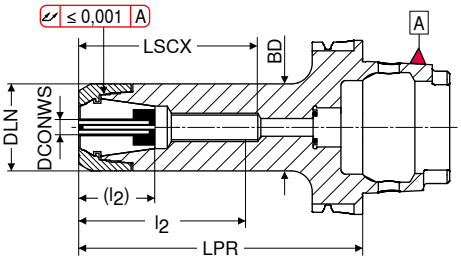
Spare parts	Y8 Tapered lock nut IK		Y8 Tapered lock nut		Y8 Lock nut IK		Y8 Lock nut		Y8 Mini lock nut		Y8 Stop screw 2		Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 83 950 ...		Article no. 83 950 ...	
for collet	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
4008E (ER11)									33,15	041	13,53	340	9,93	336
426E (ER16)	41,23	033	33,15	031							14,08	341	9,93	337
470E (ER32)					40,23	015	33,15	005			15,90	402	11,42	401

ER Precision collet chuck, slim version

- For Mini Clamping Nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





AD
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	BD mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 719 ... EUR	
HSK-A 32	1 - 7	40	16	16	24		4008E (ER11)	202,10	**107**
HSK-A 32	1 - 10	50	22	22	32		426E (ER16)	186,00	**110**
HSK-A 40	1 - 7	60	16	16	40	16 - 24	4008E (ER11)	167,90	**207**
HSK-A 50	1 - 7	130	16	16	60	15 - 32 (7 - 22)	4008E (ER11)	188,00	**407**
HSK-A 63	1 - 7	70	16	16	48	15 - 32 (7 - 22)	4008E (ER11)	127,70	**507**
HSK-A 63	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	127,70	**607**
HSK-A 63	1 - 7	130	16	16	108	15 - 32 (7 - 22)	4008E (ER11)	165,90	**707**
HSK-A 63	1 - 7	160	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	184,00	**608**
HSK-A 63	1 - 10	70	22	22	46	27 - 34 (14 - 20)	426E (ER16)	127,70	**610**
HSK-A 63	1 - 10	100	22	22	62	27 - 44 (14 - 30)	426E (ER16)	127,70	**710**
HSK-A 63	1 - 10	130	22	22	87	27 - 52 (14 - 38)	426E (ER16)	165,90	**810**
HSK-A 63	1 - 10	160	22	22	97	27 - 52 (14 - 38)	426E (ER16)	184,00	**910**

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer






Spare parts for collet	Y8 Mini lock nut IK Article no. 84 950 ... EUR		Y8 Mini lock nut Article no. 84 950 ... EUR			Y8 Stop screw 2 Article no. 83 950 ... EUR			Y8 Stop screw 1 Article no. 83 950 ... EUR	
4008E (ER11)			33,15	**041**	M8x1 - SW4	13,53	**340**	M8x1 - SW4	9,93	**336**
426E (ER16)	41,22	**035**	33,15	**034**	M11x1 - SW6	14,08	**341**	M11x1 - SW6	9,93	**337**

Accessories









ER collet	Sealing ring	Device	Roll key	Roll key device	Coolant transfer pipe	Others
→ 208–211, 213	→ 207	→ 17|35	→ 17|36	→ 17|36	→ 138	→ 17|34

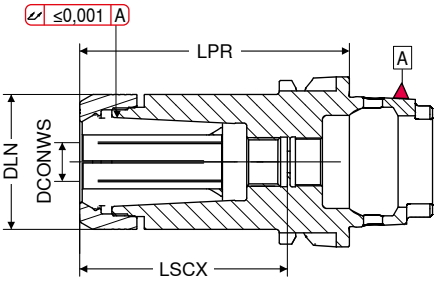
16

OZ Precision Collet Chuck

- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P







AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	for collet	Y8 Article no. 84 724 ... EUR	
	mm	mm	mm	mm			
HSK-A 63	2 - 25	85	50	60	462E	172,00	**626**
HSK-A 100	2 - 25	90	50	60	462E	261,50	**126**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw
Dimension LPR is 4mm longer when using seals


Lock nut IK

Spare parts for collet	Y8 Article no. 84 950 ... EUR	
462E	42,22	**020**

Accessories


OZ Collet → 217


Sealing ring → 217


Roll key → 17|36


Roll key device → 17|36


Coolant transfer pipe → 138

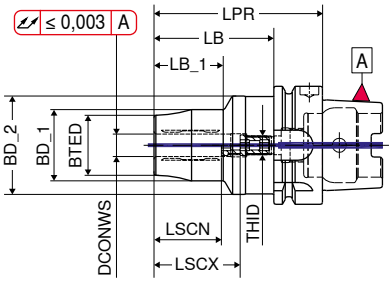

Others → 17|34

High pressure chuck, short version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw





AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Article no. 83 706 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR	
short	HSK-A 63	16	95	36	42	52,5	42	49	39	69	M12x1	448,80	616
	HSK-A 63	20	100	42	48	52,5	45	51	41	74	M16x1	415,20	620
	HSK-A 63	25	120	51	57	53,0	62	57	47	94	M16x1	448,80	625
	HSK-A 63	32	125	57	63	53,0	62	61	51	99	M16x1	448,80	632

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Clamping key – T

Y7



Pressure pin

Y7



Pressure screw

Y7



Stop screw IK

Spare parts for Article no.		Article no. 80 397 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
83 706 616	SW5	4,24	050	Ø5 x 16	3,03	433	TR10x1,5x14	13,74	430	M12x1x18	7,16	446
83 706 620	SW5	4,24	050	Ø6 x 16	3,18	434	TR10x1,5x14	13,74	430	M16x1x18,5	7,88	448
83 706 625	SW5	4,24	050	Ø6 x 16	3,18	434	TR10x1,5x14	13,74	430	M16x1x22	12,48	449
83 706 632	SW5	4,24	050	Ø6 x 16	3,18	434	TR10x1,5x14	13,74	430	M16x1x25	15,52	450

Accessories



Reduction sleeve
→ 17|32



Coolant transfer pipe
→ 138



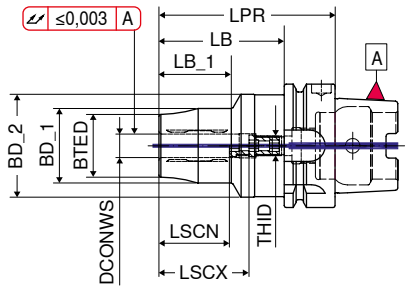
Others
→ 17|34

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Article no. 83 722 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		EUR	
HSK-A 63	20	80	36	49	52,5	36	51	40	54	M8x1	262,20	**120**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Clamping key – T

Spare parts		Article no. 80 397 ...	
for Article no.		EUR	
83 722 120	SW5	4,24	**050**

Y7



Pressure screw

	Article no. 83 950 ...	
	EUR	
M10x1x10	11,84	**158**

Y7



Stop screw IK

	Article no. 83 950 ...	
	EUR	
M8x1x13,5 - SW3	8,11	**420**

Accessories



Reduction sleeve
→ 17|32



Coolant transfer pipe
→ 138



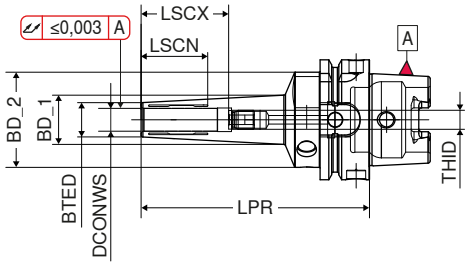
Others
→ 17|34

High pressure chuck, slim 3°

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw





AD
G 2,5 n_{max} 25000
Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LSCX	LSCN	THID	Article no. 83 727 ...	
		mm	mm	mm	mm	mm	mm	mm		EUR	
Long	HSK-A 63	3	120	9	16,65	50	28	12	M3	454,00	603
	HSK-A 63	4	120	10	17,65	50	28	16	M3	454,00	604
	HSK-A 63	5	120	11	18,65	50	28	20	M3	454,00	605
	HSK-A 63	6	120	12	19,75	50	37	27	M5	391,10	606
	HSK-A 63	8	120	14	21,75	50	37	27	M6	391,10	608
	HSK-A 63	10	120	16	23,75	50	41	31	M8x1	391,10	610
	HSK-A 63	12	120	18	25,86	50	46	36	M10x1	391,10	612
	HSK-A 63	16	120	24	31,50	50	49	39	M12x1	680,50	616
	HSK-A 63	20	120	28	35,55	50	51	41	M16x1	680,50	620
	HSK-A 63	6	160	16	33,53	50	37	27	M5	643,90	706
	HSK-A 63	8	160	18	34,55	50	37	27	M6	643,90	708
	HSK-A 63	10	160	20	36,27	50	41	31	M8x1	643,90	710
	HSK-A 63	12	160	22	37,78	50	46	36	M10x1	643,90	712
	HSK-A 63	6	200	16	37,83	50	37	27	M5	712,00	806
	HSK-A 63	8	200	18	38,85	50	37	27	M6	712,00	808
	HSK-A 63	10	200	20	40,57	50	41	31	M8x1	712,00	810
	HSK-A 63	12	200	22	42,07	50	46	36	M10x1	712,00	812

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Clamping key – T

Y7



Pressure screw

Y7



Stop screw IK

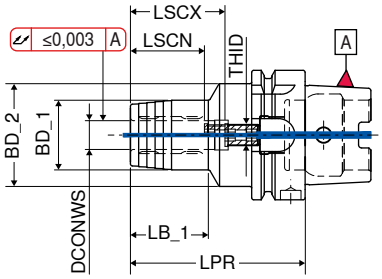
Spare parts		Article no. 80 397 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for Article no.		EUR			EUR			EUR	
83 727 603	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 727 604	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 727 605	SW5	4,24	050	M10x1x10	11,84	158	M3x20 - SW1,5	8,43	172
83 727 606	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 727 608	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 727 610	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 727 612	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421
83 727 616	SW5	4,24	050	M10x1x12	11,84	159	M12x1x13,5 - SW5	8,11	422
83 727 620	SW5	4,24	050	M10x1x12	11,84	159	M16x1x13,5 - SW8	9,34	424
83 727 706	SW5	4,24	050	M10x1x10	11,84	158	M5x12,5 - SW2,5	8,11	418
83 727 708	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 727 710	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 727 712	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421
83 727 806	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 727 808	SW5	4,24	050	M10x1x10	11,84	158	M6x12,5 - SW3	8,11	419
83 727 810	SW5	4,24	050	M10x1x12	11,84	159	M8x1x13,5 - SW3	8,11	420
83 727 812	SW5	4,24	050	M10x1x12	11,84	159	M10x1x13,5 - SW5	8,11	421

Hydraulic chuck, short and slim version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BD_1	BD_2	LSCX	LSCN	LB_1	THID	Article no. 83 726 ...	
		mm	mm	mm	mm	mm	mm	mm		EUR	
short	HSK-A 63	6	70	26	49,5	37	27	24	M5	400,60	606
	HSK-A 63	8	70	28	49,5	37	27	24	M6	400,60	608
	HSK-A 63	10	80	30	49,5	41	31	32	M8x1	400,60	610
	HSK-A 63	12	85	32	49,5	46	36	40	M10x1	368,10	612
	HSK-A 63	16	90	38	49,5	49	39	46	M12x1	400,60	616
	HSK-A 63	20	90	42	49,5	51	41	48	M16x1	368,10	620
	HSK-A 63	25	120	57	52,0	57	47	63	M16x1	400,60	625
	HSK-A 63	32	125	63	53,0	61	51	61	M16x1	400,60	632

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Pressure screw

Y7



Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
6	M8x1x10	5,48	439	M5x12,5 - SW2,5	8,11	418
8	M8x1x10	5,48	439	M6x12,5 - SW3	8,11	419
10	M10x1x12	5,48	440	M8x1x13,5 - SW3	8,11	420
12	M10x1x12	5,48	440	M10x1x13,5 - SW5	8,11	421
16	M10x1x12	5,48	440	M12x1x13,5 - SW5	8,11	422
20 - 32	M10x1x12	5,48	440	M16x1x13,5 - SW5	9,34	423

Accessories



Reduction sleeve
→ 17|32



Coolant transfer pipe
→ 138

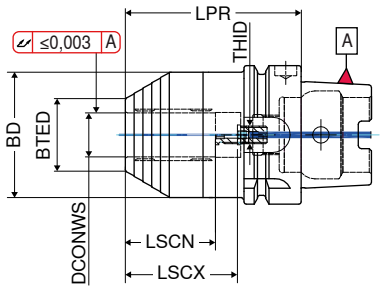


Others
→ 17|34

Hydraulic chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 83 729 ...	EUR	
	mm	mm	mm	mm	mm	mm				
HSK-A 63	20	80	33	51,5	51	41	M8x1		229,70	**620**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth


Pressure screw


Stop screw IK

Spare parts DCONWS	Y7 Article no. 83 950 ...	EUR		Y7 Article no. 83 950 ...	EUR	
20	M10x1x12	5,48	**440**	M16x1x13,5 - SW5	9,34	**423**

Accessories


Reduction sleeve
→ 17|32

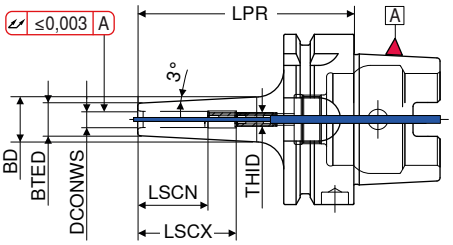

Coolant transfer pipe
→ 138


Others
→ 17|34

Shrink adapter, slim 3°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG







AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 324 ...	
		mm	mm	mm	mm	mm	mm		EUR	
short	HSK-A 63	3	80	9	14	28	12	M6	162,60	103
	HSK-A 63	4	80	10	15	28	16	M6	158,40	104
	HSK-A 63	5	80	11	16	30	20	M6	158,40	105
	HSK-A 63	6	80	12	17	36	26	M5	143,70	106
	HSK-A 63	8	80	14	19	36	26	M6	143,70	108
	HSK-A 63	10	85	16	21	41	31	M8x1	143,70	110
	HSK-A 63	12	90	18	24	47	37	M10x1	143,70	112
	HSK-A 63	14	90	20	26	47	37	M10x1	143,70	114
	HSK-A 63	16	95	22	28	50	40	M12x1	143,70	116
	HSK-A 63	18	95	24	30	50	40	M12x1	143,70	118
	HSK-A 63	20	100	26	33	52	42	M16x1	143,70	120
long	HSK-A 63	3	120	9	16	12	12		189,80	203
	HSK-A 63	4	120	10	17	16	16		185,60	204
	HSK-A 63	5	120	11	18	20	20		185,60	205
	HSK-A 63	6	120	12	21	36	26	M5	168,90	206
	HSK-A 63	8	120	14	23	36	26	M6	168,90	208
	HSK-A 63	10	120	16	25	41	31	M8x1	168,90	210
	HSK-A 63	12	120	18	27	47	37	M10x1	168,90	212
	HSK-A 63	14	120	20	29	47	37	M10x1	170,90	214
	HSK-A 63	16	120	22	31	50	40	M12x1	170,90	216
	HSK-A 63	18	120	24	33	50	40	M12x1	170,90	218
	HSK-A 63	20	120	26	35	52	42	M16x1	170,90	220
extra-long	HSK-A 63	3	160	9	19	12	12		210,70	303
	HSK-A 63	4	160	10	20	16	16		206,50	304
	HSK-A 63	5	160	11	21	20	20		206,50	305
	HSK-A 63	6	160	12	24	36	26	M5	190,90	306
	HSK-A 63	8	160	14	26	36	26	M6	190,90	308
	HSK-A 63	10	160	16	28	41	31	M8x1	190,90	310
	HSK-A 63	12	160	18	30	47	37	M10x1	190,90	312
	HSK-A 63	14	160	20	32	47	37	M10x1	190,90	314
	HSK-A 63	16	160	22	34	50	40	M12x1	190,90	316
	HSK-A 63	18	160	24	36	50	40	M12x1	190,90	318
	HSK-A 63	20	160	26	38	52	42	M16x1	190,90	320

→ Min. clamping depth, Page 233

Y7



Stop screw IK

Y7



Stop screw IK

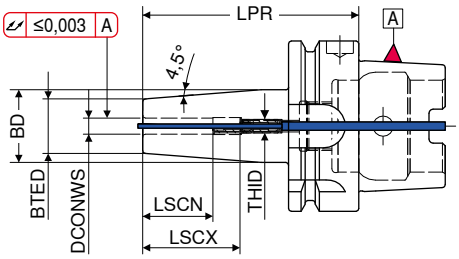
Spare parts DCONWS

DCONWS		Article no. 83 950 ... EUR		DCONWS		Article no. 83 950 ... EUR	
3 - 5	M6x14 - SW2	8,11	417				
6					M5x12,5 - SW2,5	8,11	418
8					M6x12,5 - SW3	8,11	419
10					M8x1x13,5 - SW3	8,11	420
12 - 14					M10x1x13,5 - SW5	8,11	421
16 - 18					M12x1x13,5 - SW5	8,11	422
20					M16x1x13,5 - SW8	9,34	424

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG







AD
G 2,5 n_{max} 25000
Y8

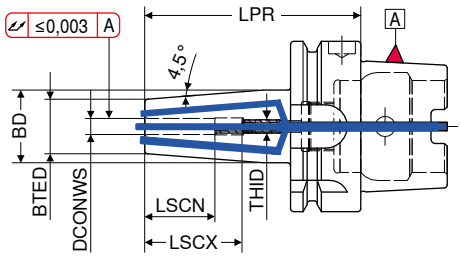
	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 304 ...	
		mm	mm	mm	mm	mm	mm		EUR	
short	HSK-A 63	3	80	10	15	22	12	M6	111,10	103
	HSK-A 63	4	80	15	22	26	16	M6	111,10	104
	HSK-A 63	5	80	15	22	30	20	M6	111,10	105
	HSK-A 63	6	80	21	27	36	26	M5	111,10	106
	HSK-A 63	8	80	21	27	36	26	M6	111,10	108
	HSK-A 63	10	85	24	32	41	31	M8x1	111,10	110
	HSK-A 63	12	90	24	32	47	37	M10x1	111,10	112
	HSK-A 63	14	90	27	34	47	37	M10x1	111,10	114
	HSK-A 63	16	95	27	34	50	40	M12x1	111,10	116
	HSK-A 63	18	95	33	42	50	40	M12x1	111,10	118
	HSK-A 63	20	100	33	42	52	42	M16x1	111,10	120
	HSK-A 63	25	115	44	53	58	48	M16x1	111,10	125
	HSK-A 63	32	120	44	53	62	52	M16x1	111,10	132
long	HSK-A 63	3	120	10	20	12	12		184,50	203
	HSK-A 63	4	120	15	22	16	16		180,40	204
	HSK-A 63	5	120	15	22	20	20		180,40	205
	HSK-A 63	6	120	21	27	36	26	M5	163,60	206
	HSK-A 63	8	120	21	27	36	26	M6	163,60	208
	HSK-A 63	10	120	24	32	41	31	M8x1	163,60	210
	HSK-A 63	12	120	24	32	47	37	M10x1	163,60	212
	HSK-A 63	14	120	27	34	47	37	M10x1	164,60	214
	HSK-A 63	16	120	27	34	50	40	M12x1	164,60	216
	HSK-A 63	18	120	33	42	50	40	M12x1	164,60	218
	HSK-A 63	20	120	33	42	52	42	M16x1	164,60	220
	HSK-A 63	25	120	44	53	58	48	M16x1	164,60	225
extra-long	HSK-A 63	3	160	10	20	12	12		205,50	303
	HSK-A 63	4	160	15	22	16	16		200,20	304
	HSK-A 63	5	160	15	22	20	20		200,20	305
	HSK-A 63	6	160	21	27	36	26	M5	185,60	306
	HSK-A 63	8	160	21	27	36	26	M6	185,60	308
	HSK-A 63	10	160	24	32	41	31	M8x1	185,60	310
	HSK-A 63	12	160	24	32	47	37	M10x1	185,60	312
	HSK-A 63	14	160	27	34	47	37	M10x1	185,60	314
	HSK-A 63	16	160	27	34	50	40	M12x1	185,60	316
	HSK-A 63	18	160	33	42	50	40	M12x1	185,60	318
	HSK-A 63	20	160	33	42	52	42	M16x1	185,60	320
	HSK-A 63	25	160	44	53	62	52	M16x1	185,60	325
extra long	HSK-A 63	6	200	21	27	36	26	M5	221,20	406
	HSK-A 63	8	200	21	27	36	26	M6	221,20	408
	HSK-A 63	10	200	24	32	41	31	M8x1	221,20	410
	HSK-A 63	12	200	24	32	47	37	M10x1	221,20	412
	HSK-A 63	14	200	27	34	47	37	M10x1	221,20	414
	HSK-A 63	16	200	27	34	50	40	M12x1	221,20	416
	HSK-A 63	18	200	33	42	50	40	M12x1	221,20	418
	HSK-A 63	20	200	33	42	52	42	M16x1	221,20	420
	HSK-A 63	25	200	44	53	62	52	M16x1	221,20	425
	HSK-A 63	32	200	44	53	62	52	M16x1	221,20	432

→ Min. clamping depth, Page 233

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG







AD
G 2,5 n_{max} 25000

NEW Y8

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	Article no. 84 316 ... EUR	
short	HSK-A 63	3	80	10	15	28	12	M6	187,70	103
	HSK-A 63	4	80	15	22	28	16	M6	182,40	104
	HSK-A 63	5	80	15	22	30	20	M6	182,40	105
	HSK-A 63	6	80	21	27	36	26	M5	165,70	106
	HSK-A 63	8	80	21	27	36	26	M6	165,70	108
	HSK-A 63	10	85	24	32	41	31	M8x1	165,70	110
	HSK-A 63	12	90	24	32	47	37	M10x1	165,70	112
	HSK-A 63	14	90	27	34	47	37	M10x1	165,70	114
	HSK-A 63	16	95	27	34	50	40	M12x1	165,70	116
	HSK-A 63	18	95	33	42	50	40	M12x1	165,70	118
	HSK-A 63	20	100	33	42	52	42	M16x1	165,70	120
	HSK-A 63	25	115	44	53	58	48	M16x1	165,70	125
	HSK-A 63	32	120	44	53	62	52	M16x1	165,70	132

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Stop screw IK

Y7



Stop screw IK

Y7



Sealing screw

Spare parts DCONWS		Article no. 83 950 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
3 - 4	M6x14 - SW2	8,11	417				M2x6	0,48	512
5				M5x12,5 - SW2,5	8,11	418	M2x6	0,48	512
6				M6x12,5 - SW3	8,11	419	M2x6	0,48	512
8				M8x1x13,5 - SW3	8,11	420	M2x6	0,48	512
10 - 14				M10x1x13,5 - SW5	8,11	421	M2x6	0,48	512
16 - 18	M12x1 - SW5	8,14	510				M2x6	0,48	512
20 - 32	M16x1 - SW5	4,81	511				M2x6	0,48	512

Accessories



Shrink fit extension
→ 17|10



Coolant transfer pipe
→ 138

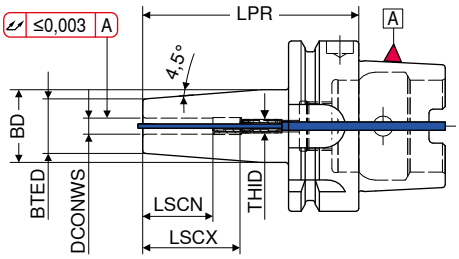


Others
→ 17|34

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG





AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 305 ...	EUR	
		mm	mm	mm	mm	mm	mm				
short	HSK-A 100	6	85	21	27	36	26	M5		202,40	106
	HSK-A 100	8	85	21	27	36	26	M6		202,40	108
	HSK-A 100	10	90	24	32	41	31	M8x1		202,40	110
	HSK-A 100	12	95	24	32	47	37	M10x1		202,40	112
	HSK-A 100	14	95	27	34	47	37	M10x1		202,40	114
	HSK-A 100	16	100	27	34	50	40	M12x1		202,40	116
	HSK-A 100	18	100	33	42	50	40	M12x1		202,40	118
	HSK-A 100	20	105	33	42	52	42	M16x1		202,40	120
	HSK-A 100	25	115	44	53	58	48	M16x1		202,40	125
	HSK-A 100	32	120	44	53	62	52	M16x1		202,40	132
long	HSK-A 100	6	120	21	27	36	26	M5		233,80	206
	HSK-A 100	8	120	21	27	36	26	M6		233,80	208
	HSK-A 100	10	120	24	32	41	31	M8x1		233,80	210
	HSK-A 100	12	120	24	32	47	37	M10x1		233,80	212
	HSK-A 100	14	120	27	34	47	37	M10x1		233,80	214
	HSK-A 100	16	120	27	34	50	40	M12x1		233,80	216
	HSK-A 100	18	120	33	42	50	40	M12x1		233,80	218
	HSK-A 100	20	120	33	42	52	42	M16x1		233,80	220
	HSK-A 100	25	120	44	53	58	48	M16x1		233,80	225
extra-long	HSK-A 100	6	160	21	27	36	26	M5		270,50	306
	HSK-A 100	8	160	21	27	36	26	M6		270,50	308
	HSK-A 100	10	160	24	32	41	31	M8x1		270,50	310
	HSK-A 100	12	160	24	32	47	37	M10x1		270,50	312
	HSK-A 100	14	160	27	34	47	37	M10x1		270,50	314
	HSK-A 100	16	160	27	34	50	40	M12x1		270,50	316
	HSK-A 100	18	160	33	42	50	40	M12x1		270,50	318
	HSK-A 100	20	160	33	42	52	42	M16x1		270,50	320
	HSK-A 100	25	160	44	53	58	48	M16x1		270,50	325
	HSK-A 100	32	160	44	53	62	52	M16x1		270,50	332

→ Min. clamping depth, Page 233

Y7



Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR	
6	M5x12,5 - SW2,5	8,11	418
8	M6x12,5 - SW3	8,11	419
10	M8x1x13,5 - SW3	8,11	420
12 - 14	M10x1x13,5 - SW5	8,11	421
16 - 18	M12x1x13,5 - SW5	8,11	422
20 - 32	M16x1x13,5 - SW8	9,34	424

Accessories



Shrink fit extension
→ 17|10



Coolant transfer pipe
→ 138

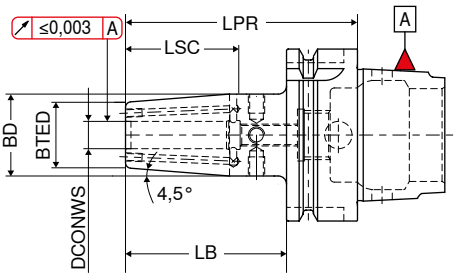


Others
→ 17|34

Shrink fit adapters 4.5°

- ▲ Version for high clamping force
- ▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder with adjustable back stop







AD
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LB	LSC	Y8 Article no. 84 717 ...	
		mm	mm	mm	mm	mm	mm	EUR	
short	HSK-A 63	6	80	21	26	54	36,5	176,20	606
	HSK-A 63	8	80	21	26	54	36,5	176,20	608
	HSK-A 63	10	85	24	30	59	41,5	176,20	610
	HSK-A 63	12	90	24	30	64	46,5	176,20	612
	HSK-A 63	14	90	27	34	64	46,5	176,20	614
	HSK-A 63	16	95	27	34	69	49,5	176,20	616
	HSK-A 63	18	95	33	41	69	49,5	176,20	618
	HSK-A 63	20	100	33	41	74	51,5	176,20	620
	HSK-A 63	25	115	44	52	89	57,5	185,60	625
	HSK-A 63	32	120	44	52	94	61,5	245,40	632
	HSK-A 100	6	85	21	26	56	36,5	248,50	106
	HSK-A 100	8	85	21	26	56	36,5	248,50	108
	HSK-A 100	10	90	24	30	56	41,5	248,50	110
	HSK-A 100	12	95	24	30	66	46,5	248,50	112
	HSK-A 100	14	95	27	34	66	46,5	248,50	114
	HSK-A 100	16	100	27	34	71	49,5	248,50	116
	HSK-A 100	18	100	33	42	71	49,5	248,50	118
	HSK-A 100	20	105	33	42	76	51,5	248,50	120
	HSK-A 100	25	115	44	53	86	57,5	258,00	125
	HSK-A 100	32	120	44	53	91	61,5	265,30	132

→ Min. clamping depth, Page 233

W7



Stop screw IK

W7



Sealing screw

Spare parts DCONWS		Article no. 62 950 ... EUR			Article no. 62 950 ... EUR	
6	M5x0,8x14	6,81	402	M3x6	1,32	411
8	M6x1x16	6,81	403	M3x6	1,32	411
10	M8x1x20	7,65	404	M3x6	1,32	411
12 - 18	M10x1x20	8,54	405	M3x6	1,32	411
20	M12x1x20	8,84	406	M3x6	1,32	411
25 - 32	M12x1x20	8,84	406	M4x8	1,32	412

Sealing screw for closing of two additional coolant holes.

Accessories



Shrink fit extension
→ 17|10



Coolant transfer pipe
→ 138

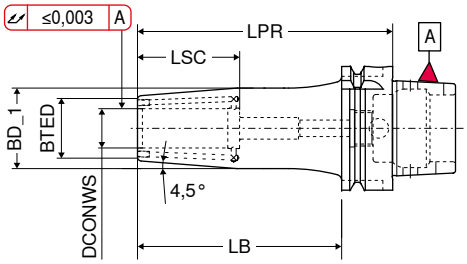


Others
→ 17|34

Shrink fit adapters 4.5°

- ▲ Version for high clamping force
- ▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder with adjustable back stop






AD
G 2,5 n_{max} 25000
Y8

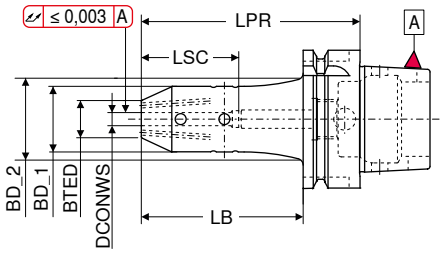

AD
G 2,5 n_{max} 25000
Y8

	Adapter	DCONWS	LPR	BTED	BD_1	LB	LSC	Article no. 84 720 ... EUR		Article no. 84 723 ... EUR	
		mm	mm	mm	mm	mm	mm				
medium length	HSK-A 63	6	130	21	27	104	36,5	245,40	606		
	HSK-A 63	8	130	21	27	104	36,5	245,40	608		
	HSK-A 63	10	130	24	32	104	41,5	245,40	610		
	HSK-A 63	12	130	24	32	104	46,5	245,40	612		
	HSK-A 63	14	130	27	34	104	46,5	245,40	614		
	HSK-A 63	16	130	27	34	104	49,5	245,40	616		
	HSK-A 63	18	130	33	41	104	49,5	245,40	618		
	HSK-A 63	20	130	33	41	104	51,5	245,40	620		
	HSK-A 100	6	130	21	27	101	36,5	337,60	106		
	HSK-A 100	8	130	21	27	101	36,5	337,60	108		
	HSK-A 100	10	130	24	32	101	41,5	337,60	110		
	HSK-A 100	12	130	24	32	101	46,5	337,60	112		
	HSK-A 100	14	130	27	34	101	46,5	337,60	114		
	HSK-A 100	16	130	27	34	101	49,5	337,60	116		
	HSK-A 100	18	130	33	41	101	49,5	337,60	118		
	HSK-A 100	20	130	33	41	101	51,5	337,60	120		
extra-long	HSK-A 63	6	160	21	27	134	36,5			269,50	606
	HSK-A 63	8	160	21	27	134	36,5			269,50	608
	HSK-A 63	10	160	24	32	134	41,5			269,50	610
	HSK-A 63	12	160	24	32	134	46,5			269,50	612
	HSK-A 63	14	160	27	34	134	46,5			269,50	614
	HSK-A 63	16	160	27	34	134	49,5			269,50	616
	HSK-A 63	18	160	33	41	134	49,5			269,50	618
	HSK-A 63	20	160	33	41	134	51,5			269,50	620
	HSK-A 63	25	160	44	52	134	57,5			269,50	625
	HSK-A 100	6	160	21	27	131	36,5			370,10	106
	HSK-A 100	8	160	21	27	131	36,5			370,10	108
	HSK-A 100	10	160	24	32	131	41,5			370,10	110
	HSK-A 100	12	160	24	32	131	46,5			370,10	112
	HSK-A 100	14	160	27	34	131	46,5			370,10	114
	HSK-A 100	16	160	27	34	131	49,5			370,10	116
	HSK-A 100	18	160	33	41	131	49,5			370,10	118
	HSK-A 100	20	160	33	41	131	51,5			370,10	120
	HSK-A 100	25	160	44	53	131	57,5			370,10	125
	HSK-A 100	32	160	44	53	131	61,5			370,10	132

→ Min. clamping depth, Page 233

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat





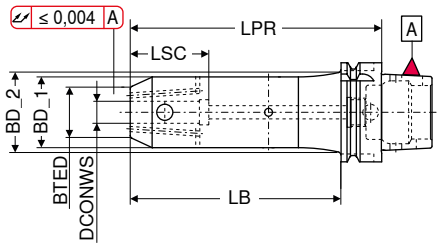
	Adapter	DCONWS $_{H5}$	LPR	BD_1	BTED	LB	LSC	BD_2	AD G 2,5 n_{max} 25000 Y8 Article no. 84 700 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 701 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 704 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 705 ...	
		mm	mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
short	HSK-A 63	6	65	30	17	39	34		186,70	606	159,40	606 1)				
	HSK-A 63	8	65	32	20	39	34		186,70	608	149,90	608 1)				
	HSK-A 63	10	65	35	25	39	39		186,70	610	149,90	610 1)				
	HSK-A 63	12	80	42	30	54	44		186,70	612	149,90	612 1)				
	HSK-A 63	14	80	45	32	54	44		186,70	614	149,90	614 1)				
	HSK-A 63	16	80	48	36	54	47		186,70	616	149,90	616 1)				
	HSK-A 63	18	80	48	38	54	47		186,70	618	149,90	618 1)				
	HSK-A 63	20	80	52	40	54	49		186,70	620	149,90	620 1)				
	HSK-A 63	25	110	63	45	84	54		195,00	625	165,70	625 1)				
	HSK-A 63	32	110	72	52	84	58		223,40	632	176,20	632 1)				
	HSK-A 100	6	80	30	17	51	34		227,50	106						
	HSK-A 100	8	80	32	20	51	34		219,20	108						
	HSK-A 100	10	80	35	25	51	39		219,20	110						
	HSK-A 100	12	80	42	30	51	44		219,20	112						
	HSK-A 100	14	80	45	32	51	44		219,20	114						
	HSK-A 100	16	100	48	36	71	47		219,20	116						
	HSK-A 100	18	100	48	38	71	47		219,20	118						
	HSK-A 100	20	100	52	40	71	49		219,20	120						
	HSK-A 100	25	100	65	45	71	54		227,50	125						
	HSK-A 100	32	100	72	52	71	58		238,00	132						
	HSK-A 100	40	110	80	60	81	68		276,80	140						
long	HSK-A 63	6	100	30	17	74	34	36,2					164,60	606	123,70	606 1)
	HSK-A 63	8	100	32	20	74	34	38,2					159,40	608	118,50	608 1)
	HSK-A 63	10	100	35	25	74	39	41,2					159,40	610	118,50	610 1)
	HSK-A 63	12	100	42	30	74	44						159,40	612	118,50	612 1)
	HSK-A 63	14	100	45	32	74	44						159,40	614	118,50	614 1)
	HSK-A 63	16	100	48	36	74	47						159,40	616	118,50	616 1)
	HSK-A 63	18	100	48	38	74	47						159,40	618	118,50	618 1)
	HSK-A 63	20	100	52	40	74	49						159,40	620	118,50	620 1)

1) Without threads for balancing screws

Spare parts and accessories on → **Page 110**

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



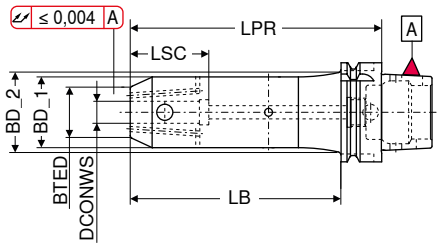


	Adapter	DCONWS	LPR	BD_1	BTED	LB	LSC	BD_2	AD G 2,5 n_{max} 25000 Y8 Article no. 84 706 ... EUR		AD G 2,5 n_{max} 25000 Y8 Article no. 84 708 ... EUR	
		mm	mm	mm	mm	mm	mm	mm				
medium length	HSK-A 63	6	130	30	17	104	34	36,2	184,50	606	128,90	606
	HSK-A 63	8	130	32	20	104	34	38,2	175,10	608	125,90	608
	HSK-A 63	10	130	35	25	104	39	41,2	175,10	610	125,90	610
	HSK-A 63	12	130	42	30	104	44	48,2	175,10	612	125,90	612
	HSK-A 63	14	130	45	32	104	44	50,5	175,10	614	125,90	614
	HSK-A 63	16	130	48	36	104	47	50,1	175,10	616	125,90	616
	HSK-A 63	18	130	48	38	104	47	50,1	175,10	618	125,90	618
	HSK-A 63	20	130	52	40	104	49		175,10	620	135,30	620
	HSK-A 63	25	130	63	45	104	54		184,50	625		
	HSK-A 63	32	130	72	52	104	58		194,00	632		

Spare parts and accessories on → **Page 110**

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat







AD
G 2,5 n_{max} 25000
Y8

	Adapter	DCONWS $_{H5}$	LPR	BD_1	BTED	LB	LSC	BD_2	Article no. 84 707 ...	
		mm	mm	mm	mm	mm	mm	mm	EUR	
extra-long	HSK-A 63	6	160	30	17	134	34	36,2	196,10	606
	HSK-A 63	8	160	32	20	134	34	38,2	188,70	608
	HSK-A 63	10	160	35	25	134	39	41,2	188,70	610
	HSK-A 63	12	160	42	30	134	44	48,2	188,70	612
	HSK-A 63	14	160	45	32	134	44	50,5	188,70	614
	HSK-A 63	16	160	48	36	134	47	50,1	188,70	616
	HSK-A 63	18	160	48	38	134	47	50,1	188,70	618
	HSK-A 63	20	160	52	40	134	49		188,70	620
	HSK-A 63	25	160	63	45	134	54		188,70	625
	HSK-A 100	6	160	30	17	131	34	38,2	234,90	106
	HSK-A 100	8	160	32	20	131	34	40,2	224,40	108
	HSK-A 100	10	160	35	25	131	39	43,2	222,30	110
	HSK-A 100	12	160	42	30	131	44	50,2	222,30	112
	HSK-A 100	14	160	45	32	131	44	53,2	222,30	114
	HSK-A 100	16	160	48	36	131	47	56,2	222,30	116
	HSK-A 100	18	160	48	38	131	47	56,2	222,30	118
	HSK-A 100	20	160	52	40	131	49	60,2	222,30	120
	HSK-A 100	25	160	65	45	131	54	73,2	222,30	125
	HSK-A 100	32	160	72	52	134	58	79,5	222,30	132

W7



Grubscrew

W7



Sealing screw

Spare parts DCONWS $_{H5}$		Article no. 62 950 ...			Article no. 62 950 ...	
		EUR			EUR	
6	M6x10	5,59	422	M3x6	1,32	411
8	M8x10	5,59	423	M3x6	1,32	411
10	M10x12	6,93	424	M3x6	1,32	411
12 - 14	M12x16	6,93	425	M3x6	1,32	411
16 - 18	M14x16	9,29	426	M3x6	1,32	411
20	M16x16	10,91	427	M3x6	1,32	411
25	M18x2x20	12,48	428	M4x8	1,32	412
32 - 40	M20x2x20	15,41	429	M4x8	1,32	412

Sealing screw for closing of two additional coolant holes.

Accessories



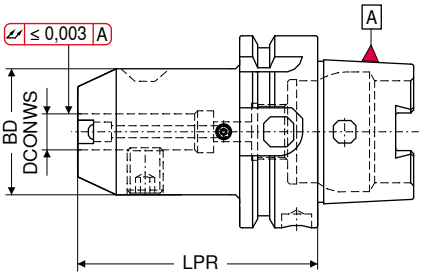
Coolant transfer pipe
→ 138



Others
→ 17|34

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



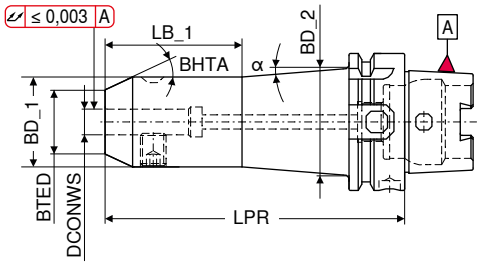


	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 2,5 n_{max} 18000 Y8 Article no. 81 736 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 81 731 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 81 731 ...		ADe G 2,5 n_{max} 18000 Y8 Article no. 81 730 ...		ADe G 6,3 n_{max} 15000 Y8 Article no. 81 730 ...	
		mm	mm	mm	EUR		EUR		EUR		EUR		EUR	
short	HSK-A 32	6	60	25			110,90	306						
	HSK-A 32	8	60	28			105,20	308						
	HSK-A 32	10	65	35			105,20	310						
	HSK-A 32	12	75	42			105,20	312						
	HSK-A 32	16	75	48			105,20	316						
	HSK-A 40	6	60	25			105,20	406						
	HSK-A 40	8	60	28			100,20	408						
	HSK-A 40	10	65	34			100,20	410						
	HSK-A 40	12	70	42			100,20	412						
	HSK-A 40	16	80	48			100,20	416						
	HSK-A 40	20	80	52			100,20	420						
	HSK-A 50	6	65	25			112,50	506						
	HSK-A 50	8	65	28			105,20	508						
	HSK-A 50	10	65	35			105,20	510						
	HSK-A 50	12	80	42			105,20	512						
	HSK-A 50	16	80	48			105,20	516						
	HSK-A 50	20	80	52			105,20	520						
	HSK-A 50	25	105	65			114,20	525						
	HSK-A 50	32	120	72			112,50	532						
	HSK-A 63	6	65	25			106,80	606			138,60	606		
	HSK-A 63	8	65	28			106,80	608			132,10	608		
	HSK-A 63	10	65	35			106,80	610			132,10	610		
	HSK-A 63	12	80	42			106,80	612			132,10	612		
	HSK-A 63	14	80	44			106,80	614			132,10	614		
	HSK-A 63	16	80	48			106,80	616			132,10	616		
	HSK-A 63	18	80	50			106,80	618			132,10	618		
	HSK-A 63	20	80	52			106,80	620			132,10	620		
	HSK-A 63	25	110	65			117,40	625			138,60	625		
	HSK-A 63	32	110	72			124,70	632			158,20	632		
	HSK-A 63	40	125	80							172,80	640		
	HSK-A 100	6	80	25					138,60	106			162,20	106
	HSK-A 100	8	80	28					135,40	108			155,70	108
	HSK-A 100	10	80	35					135,40	110			155,70	110
	HSK-A 100	12	80	42					135,40	112			155,70	112
	HSK-A 100	14	80	44					135,40	114			155,70	114
	HSK-A 100	16	100	48					135,40	116			155,70	116
	HSK-A 100	18	100	50					135,40	118			155,70	118
	HSK-A 100	20	100	52					135,40	120			155,70	120
	HSK-A 100	25	100	65					145,90	125			162,20	125
	HSK-A 100	32	100	72					149,20	132			168,70	132
	HSK-A 100	40	105	80					153,30	140			197,30	140
long	HSK-A 63	6	100	25	123,10	606								
	HSK-A 63	8	100	28	122,30	608								
	HSK-A 63	10	100	35	122,30	610								
	HSK-A 63	12	100	42	122,30	612								
	HSK-A 63	16	100	48	122,30	616								
	HSK-A 63	40	125	80	137,00	640								

16

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat





	Adapter	DCONWS $_{H4}$	LPR	BD_1	BD_2	BTED	LB_1	BHTA	α°	AD G 6,3 n_{max} 15000 Y8 Article no. 81 732 ...		AD G 6,3 n_{max} 10000 Y8 Article no. 81 732 ...	
		mm	mm	mm	mm	mm	mm			EUR		EUR	
extra-long	HSK-A 63	6	160	25	34,7	15	50	25°	3,5	138,60	606		
	HSK-A 63	8	160	28	37,9	20	50	25°	3,5	134,50	608		
	HSK-A 63	10	160	35	43,7	25	60	25°	3,5	134,50	610		
	HSK-A 63	12	160	42		30		25°		134,50	612 1)		
	HSK-A 63	16	160	48		36		25°		134,50	616 1)		
	HSK-A 63	20	160	52		40		25°		134,50	620 1)		
	HSK-A 100	6	160	25	45,2	15	50	25°	7,5			167,90	106
	HSK-A 100	8	160	28	48,7	20	50	25°	7,5			163,80	108
	HSK-A 100	10	160	35	51,2	25	65	25°	7,5			163,80	110
	HSK-A 100	12	160	42	59,5	30	60	25°	7,5			163,80	112
	HSK-A 100	16	160	48	62,9	36	70	25°	7,5			163,80	116
	HSK-A 100	20	160	52	69,6	40	60	25°	7,5			163,80	120
	HSK-A 100	25	160	65	77,5	45	80	45°	7,5			163,80	125

1) Cylindrical shank adapter

W7



Grubscrew

Spare parts DCONWS $_{H4}$		Article no. 62 950 ...	
		EUR	
6	M6x10	0,66	006
8	M8x10	0,77	008
10	M10x12	1,02	010
12	M12x16	1,03	012
14	M12x16	1,03	012
16	M14x16	1,28	016
18	M14x16	1,28	016
20	M16x16	1,55	020
25	M18x2x20	2,84	025
32	M20x2x20	3,15	032
40	M20x2x20	3,15	032

Accessories



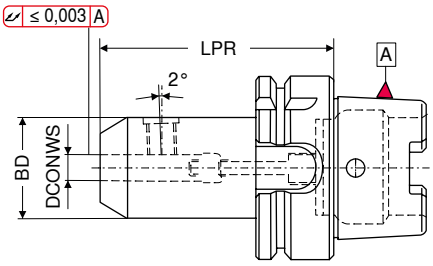
Coolant transfer pipe
→ 138



Others
→ 17|34

Tool holder for tools with angled clamping flat (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat





	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 2,5 n_{max} 18000 Y8 Article no. 81 733 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 81 733 ...	
		mm	mm	mm	EUR		EUR	
short	HSK-A 63	6	80	25	124,70	606		
	HSK-A 63	8	80	28	119,50	608		
	HSK-A 63	10	80	35	119,50	610		
	HSK-A 63	12	90	42	119,50	612		
	HSK-A 63	14	90	44	119,50	614		
	HSK-A 63	16	100	48	119,50	616		
	HSK-A 63	18	100	50	119,50	618		
	HSK-A 63	20	100	52	119,50	620		
	HSK-A 63	25	110	65	128,20	625		
	HSK-A 63	32	110	72	138,60	632		
	HSK-A 100	6	90	25			153,30	106
	HSK-A 100	8	90	28			147,20	108
	HSK-A 100	10	90	35			147,20	110
	HSK-A 100	12	100	42			147,20	112
	HSK-A 100	14	100	44			147,20	114
	HSK-A 100	16	100	48			147,20	116
	HSK-A 100	18	100	50			147,20	118
	HSK-A 100	20	110	52			147,20	120
	HSK-A 100	25	120	65			158,50	125
	HSK-A 100	32	120	72			162,90	132
	HSK-A 100	40	120	80			168,10	140



W7 Grubscrew



Y8 Stop screw IK

Spare parts DCONWS $_{H4}$		W7 Article no. 62 950 ... EUR		Y8 Article no. 81 950 ... EUR	
6	M6x10	0,66	006	M5x15	1,32	050
8	M8x10	0,77	008	M6x15	1,50	051
10	M10x12	1,02	010	M8x15	1,63	052
12 - 14	M12x16	1,03	012	M10x15	1,63	053
16 - 18	M14x16	1,28	016	M12x15	2,00	054
20	M16x16	1,55	020	M16x15	2,25	055
25	M18x2x20	2,84	025	M20x15	2,50	056
32	M20x2x20	3,15	032	M20x15	2,50	056
40	M20x2x20	3,15	032	M22x1,5x15	3,44	057

Accessories



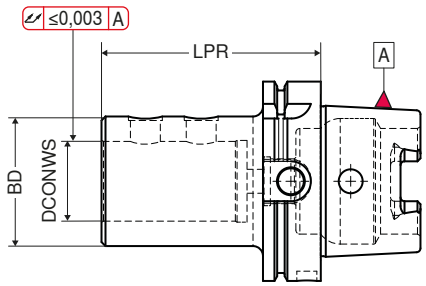
Coolant transfer pipe
→ 138



Others
→ 17|34

16

Indexable insert drill adapter ISO 12164 HSK Form A





AD
G 6,3 n_{max} 15000

2E/45

Adapter	DCONWS	LPR	BD	Article no. 10 842 ...	
	mm	mm	mm	EUR	
HSK-A 63	20	80	40	174,80	**320**
HSK-A 63	25	90	45	174,80	**325**
HSK-A 63	32	90	52	174,80	**332**
HSK-A 63	40	110	65	174,80	**340**
HSK-A 100	20	90	40	196,00	**420**
HSK-A 100	25	100	45	196,00	**425**
HSK-A 100	32	100	52	196,00	**432**
HSK-A 100	40	110	65	196,00	**440**
HSK-A 100	50	120	75	196,00	**450**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling.**

2A/28



Grubscrew

Spare parts DCONWS		Article no. 10 950 ...	
		EUR	
20	M10x1x10	3,84	**001**
25 - 32	M12x1x10	3,84	**002**
40 - 50	M16x1x12	3,84	**003**

Accessories



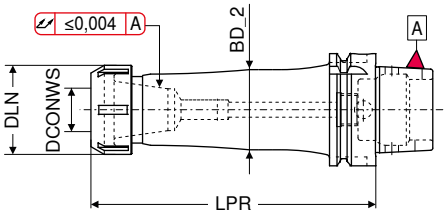
Coolant transfer pipe
→ 138



Others
→ 17|34

ER Collet chuck

Scope of supply:
Holder with lock nut and adjustable back stop





	Adapter	DCONWS	LPR	DLN	BD_2	TQX	for collet	AD G 2,5 n_{max} 25000 Y8 Article no. 84 726 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 732 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 738 ...	
		mm	mm	mm	mm	Nm		EUR		EUR		EUR	
long	HSK-A 63	1 - 10	100	22	27	8 - 56	426E (ER16 mini)	157,30	610				
	HSK-A 63	1 - 16	100	42	37	24 - 104	430E (ER25)	188,70	616				
	HSK-A 63	2 - 20	100	50	45	24 - 136	470E (ER32)	205,50	620				
	HSK-A 63	3 - 26	100	63	52	176	472E (ER40)	227,50	626				
	HSK-A 100	1 - 10	100	22	27	8 - 56	426E (ER16 mini)	201,40	110				
	HSK-A 100	1 - 16	100	42	37	24 - 104	430E (ER25)	224,40	116				
	HSK-A 100	2 - 20	100	50	45	24 - 136	470E (ER32)	242,20	120				
	HSK-A 100	3 - 26	100	63	56	176	472E (ER40)	258,00	126				
extra-long	HSK-A 63	1 - 10	160	22	27	8 - 56	426E (ER16 mini)					223,40	610
	HSK-A 63	1 - 16	160	42	37	24 - 104	430E (ER25)					225,50	616
	HSK-A 63	2 - 20	160	50	45	24 - 136	470E (ER32)					243,30	620
	HSK-A 63	3 - 26	160	63	52	176	472E (ER40)					251,70	626
	HSK-A 100	1 - 10	200	22	27	8 - 56	426E (ER16 mini)					336,60	110
	HSK-A 100	1 - 16	200	42	37	24 - 104	430E (ER25)					336,60	116
	HSK-A 100	2 - 20	200	50	45	24 - 136	470E (ER32)					352,30	120
	HSK-A 100	3 - 26	200	63	56	176	472E (ER40)					380,60	126
	HSK-A 100	1 - 10	160	22	27	8 - 56	426E (ER16 mini)			242,20	110		
	HSK-A 100	1 - 16	160	42	37	24 - 104	430E (ER25)			265,30	116		
	HSK-A 100	2 - 20	160	50	45	24 - 136	470E (ER32)			282,10	120		
	HSK-A 100	3 - 26	160	63	56	176	472E (ER40)			306,20	126		

Spare parts	Y8 Lock nut IK Article no. 83 950 ...		W7 Lock nut Article no. 62 950 ...		Y8 Y clamping key Article no. 83 357 ...		Y8 ER Mini clamping key Article no. 83 950 ...		W7 Mini lock nut Article no. 62 950 ...		Y8 Mini IK Article no. 83 950 ...		W7 Stop screw IK Article no. 62 950 ...	
for collet	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
426E (ER16 mini)							16,15	101	23,90	066	36,45	058	6,81	403
430E (ER25)	34,72	055	19,92	055	17,72	125							8,84	406
470E (ER32)	36,95	056	18,56	056	24,12	132							8,84	406
472E (ER40)	43,57	057	18,04	057	26,53	140							8,84	406

Accessories


ER collet
→ 206, 211–215

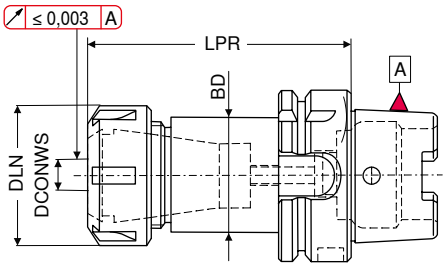

Coolant transfer pipe
→ 138


Others
→ 17|34

16

ER-Collet chuck

Scope of supply:
Toolholder with lock nut and adjustable back stop

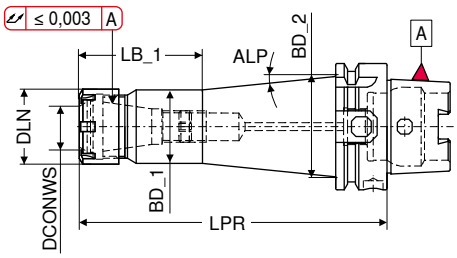




	Adapter	DCONWS	LPR	DLN	BD	TQX	for collet	AD G 6,3 n_{max} 15000 Y8 Article no. 81 735 ... EUR		AD G 2,5 n_{max} 18000 Y8 Article no. 81 735 ... EUR		AD G 2,5 n_{max} 18000 Y8 Article no. 81 737 ... EUR		AD G 6,3 n_{max} 15000 Y8 Article no. 81 737 ... EUR		AD G 6,3 n_{max} 10000 Y8 Article no. 81 737 ... EUR	
		mm	mm	mm	mm	Nm											
short	HSK-A 32	1 - 10	65	22	19	8 - 56	426E (ER16 mini)			121,30	316						
	HSK-A 32	1 - 16	70	35	30	24 - 104	430E (ER25 mini)			121,30	325						
	HSK-A 40	1 - 10	70	22	22	8 - 56	426E (ER16 mini)			113,50	416						
	HSK-A 40	1 - 16	80	42	35	24 - 104	430E (ER25)			111,80	425						
	HSK-A 50	1 - 10	80	22	22	8 - 56	426E (ER16 mini)			117,80	516						
	HSK-A 50	1 - 16	95	42	42	24 - 104	430E (ER25)			113,50	525						
long	HSK-A 40	2 - 20	100	50	40	24 - 136	470E (ER32)			117,80	432						
	HSK-A 50	2 - 20	100	50	50	24 - 136	470E (ER32)			117,80	532						
	HSK-A 63	1 - 10	100	22	19	8 - 56	426E (ER16 mini)			117,80	616						
	HSK-A 63	1 - 16	100	42	32	24 - 104	430E (ER25)			117,80	625						
	HSK-A 63	2 - 20	100	50	50	24 - 136	470E (ER32)			121,30	632						
	HSK-A 100	1 - 16	100	42	42	24 - 104	430E (ER25)	140,30	125								
	HSK-A 100	2 - 20	100	50	50	24 - 136	470E (ER32)	151,60	132								
medium length	HSK-A 40	1 - 16	120	35	35	24 - 104	430E (ER25 mini)					145,50	425				
	HSK-A 63	2 - 26	120	63	50	176	472E (ER40)			126,50	640						
	HSK-A 100	3 - 26	120	63	50	176	472E (ER40)	161,10	140								
extra-long	HSK-A 63	2 - 20	160	50	50	24 - 136	470E (ER32)							162,90	632		
	HSK-A 63	3 - 26	160	63	63	176	472E (ER40)							168,10	640		
	HSK-A 100	1 - 16	160	42	42	24 - 104	430E (ER25)									181,10	125
	HSK-A 100	2 - 20	160	50	50	24 - 136	470E (ER32)									191,40	132
	HSK-A 100	3 - 26	160	63	63	176	472E (ER40)									200,10	140

ER-Collet chuck

Scope of supply:
Toolholder with lock nut and adjustable back stop





	Adapter	DCONWS	LPR	DLN	BD_1	BD_2	LB_1	ALP	TQX	for collet	AD G 2,5 n_{max} 18000 Y8 Article no. 81 737 ... EUR		AD G 6,3 n_{max} 15000 Y8 Article no. 81 737 ... EUR	
		mm	mm	mm	mm	mm	mm		Nm					
medium length	HSK-A 40	1 - 10	120	22	22	29,15	47	4°	8 - 56	426E (ER16 mini)	145,50	**416**		
extra-long	HSK-A 63	1 - 10	160	22	22	35,00	57	5°	8 - 56	426E (ER16 mini)			168,10	**616**
	HSK-A 63	1 - 16	160	35	35	46,10	68	5°	24 - 104	430E (ER25 mini)			162,90	**625**

Spare parts	Y8 Lock nut IK Article no. 83 950 ...		W7 Lock nut Article no. 62 950 ...		Y8 Y clamping key Article no. 83 357 ...		Y8 ER Mini clamping key Article no. 83 950 ...		W7 Mini lock nut Article no. 62 950 ...		Y8 Mini IK Article no. 83 950 ...		Y8 Stop screw IK Article no. 81 950 ...	
for collet	EUR		EUR		EUR		EUR		EUR		EUR		EUR	
426E (ER16 mini)							16,15	**101**	23,90	**066**	36,45	**058**	1,63	**053**
430E (ER25 mini)							20,45	**103**	29,46	**069**	40,56	**060**	2,25	**055**
430E (ER25)	34,72	**055**	19,92	**055**	17,72	**125**							2,25	**055**
470E (ER32)	36,95	**056**	18,56	**056**	24,12	**132**							3,44	**057**
472E (ER40)	43,57	**057**	18,04	**057**	26,53	**140**							3,44	**057**

Accessories


ER collet
→ 206, 211–215


Coolant transfer pipe
→ 138


Others
→ 17|34

16

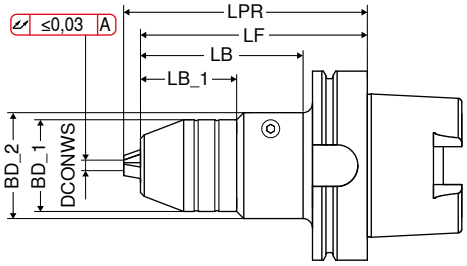
Short drill chuck

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm

Scope of supply:

Toolholder including clamping key SW4

NC 2010





AD
G 6,3 n_{max} 10000
Y8

Adapter	DCONWS	BD_1	BD_2	LB_1	LB	LPR	LF	Article no. 84 716 ...	
	mm	mm	mm	mm	mm	mm	mm	EUR	
HSK-A 63	0,5 - 13	48,5	56	50,9		116,9	126,0	286,30	**613**
HSK-A 63	2,5 - 16	51,0	56	50,9		116,9	127,5	291,50	**616**
HSK-A 100	0,5 - 13	48,5	56	50,9	86	120,0	129,0	350,30	**113**
HSK-A 100	2,5 - 16	51,0	56	50,9	86	120,0	130,5	365,90	**116**

Can be used with G 2.5 to 30,000 1/min by subsequent balancing !

Accessories



Others

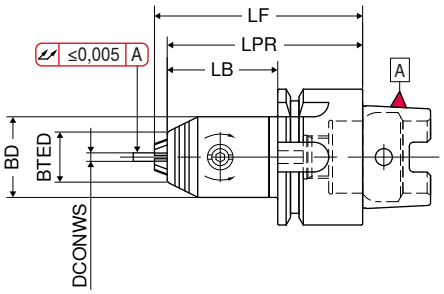
→ 17|34

Micro-precision collet chuck

- Bidirectional
- For speeds up to 60,000 1/min.

Scope of supply:

Holder including clamping wrench SW 2 x 60 mm







AD

G 2,5 n_{max} 25000

Adapter	DCONWS	LB	LPR	LF	BD	BTED	TQX	Y7 Article no. 84 710 ...	EUR	
	mm	mm	mm	mm	mm	mm	Nm			
HSK-A 32	0,2 - 3,4	26	46	49	19	12	2		514,80	**334**
HSK-A 40	0,2 - 3,4	26	46	49	19	12	2		554,70	**434**
HSK-A 50	0,2 - 3,4	26	52	55	19	12	2		574,60	**534**

Torx blade



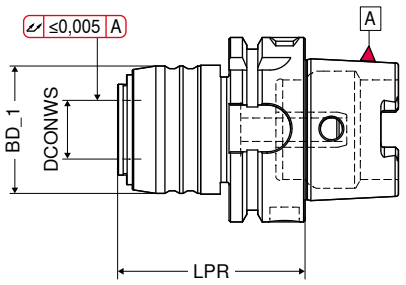
Torque screwdriver

Spare parts for Article no.	Y7 Article no. 80 950 ...	EUR			Y7 Article no. 80 021 ...	EUR	
84 710 334		5,60	**152**	1,8 Nm		97,04	**018**
84 710 434		5,60	**152**	1,8 Nm		97,04	**018**
84 710 534		5,60	**152**	1,8 Nm		97,04	**018**

16

Synchro tapping chuck with minimum length compensation

- For collets according to DIN 6499
- With length compensation under tension and under compression (LZD)
- $p_{max.}$ = 50 bar





AD

Adapter	cutting range	SZID	DCONWS	LPR	BD_1	LZD±	Y8 Article no. 83 724 ...	
			mm	mm	mm	mm	EUR	
HSK-A 63	M3 - M12	1	20	64	43	1,0 / 0,2	202,40	**612**
HSK-A 63	M6 - M20	2	32	97	60	1,0 / 0,2	253,80	**620**
HSK-A 100	M3 - M12	1	20	70	43	1,0 / 0,2	323,00	**112**
HSK-A 100	M6 - M20	2	32	91	60	1,0 / 0,2	378,60	**120**

Accessories



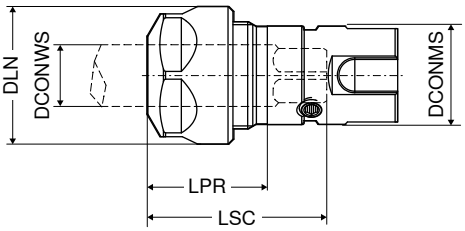
Coolant transfer pipe
→ 138



Others
→ 17|34

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut





AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	EUR	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	110,10	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	127,90	**020**

Spare parts for synchronous tapping chucks

		W7			Y8			W7		Y8	
		 Lock nut			 Lock nut IK			 Lock nut		 Y clamping key	
Spare parts		**Article no. 62 950 ...**			**Article no. 83 950 ...**			**Article no. 62 950 ...**		**Article no. 83 357 ...**	
for Article no.		EUR			EUR			EUR		EUR	
83 608 012	M22x1,5 - SW25	17,82	044	M22x1,5	30,62	054				16,04	116
83 608 020				M32x1,5	34,72	055	M32x1,5	19,92	055	17,72	125

Accessories



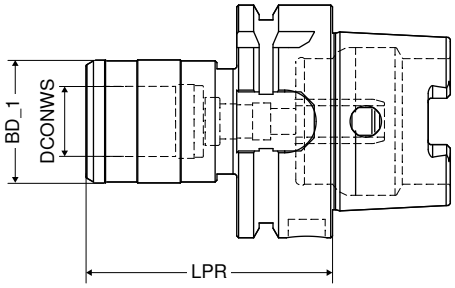
ER collet

→ 212, 214–215

16

Quick change tap chuck with length compensation

▲ With length compensation under tension and under compression (LZD)





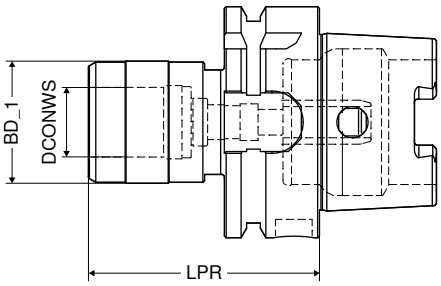


A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 712 ...	
			mm	mm	mm	mm	EUR	
HSK-A 63	M3 - M12	01	72	41	19	7,5	399,50	**612**
HSK-A 63	M6 - M20	02	110	60	31	10	463,50	**620**
HSK-A 100	M3 - M12	01	80	41	19	7,5	673,20	**112**
HSK-A 100	M6 - M20	02	100	60	31	10	673,20	**120**

Quick change tap chuck without length compensation

▲ $p_{max.}$ = 50 bar







AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	Y8 Article no. 83 710 ...	
			mm	mm	mm	EUR	
HSK-A 63	M3 - M12	01	63	33	19	266,30	**612**
HSK-A 63	M6 - M20	02	89	50	31	337,60	**620**
HSK-A 100	M3 - M12	01	69	33	19	335,60	**112**
HSK-A 100	M6 - M20	02	92	50	31	414,20	**120**

Accessories



Collet
→ 219–223



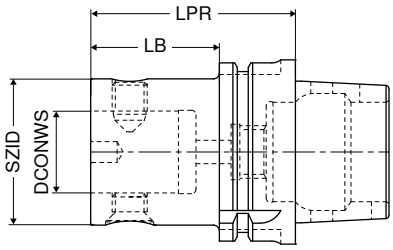
Coolant transfer pipe
→ 138



Others
→ 17|34

Adapter with ABS Connection

ABS





AD
G 6,3 n_{max} 10000
NEW 3E

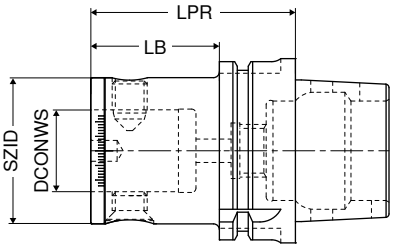
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	Article no. 84 200 ...
			mm	mm	mm	EUR
HSK-A 63	A0630150	ABS 50	28	70	44	396,20 **06397**
HSK-A 100	A0650150	ABS 50	28	80	51	476,30 **10097**

Eccentric adjuster with ABS Connection

▲ Adjustment ± 0.25 mm on diameter

Scope of supply:
Eccentric adjuster with adjuster key Ø 2.8

ABS





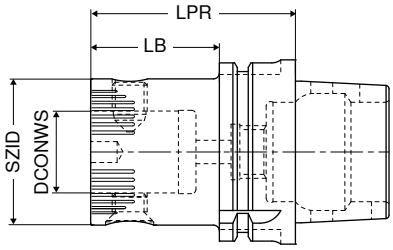
AD
NEW W4

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	Article no. 84 203 ...
			mm	mm	mm	EUR
HSK-A 63	A0636730	ABS 50	28	70	44	594,90 **06397**
HSK-A 100	A0656730	ABS 50	28	80	51	676,00 **10097**

16

Torsional vibration dampers with ABS Connection

ABS





AD

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	NEW 3E Article no. 84 206 ... EUR	
			mm	mm	mm		
HSK-A 63	A0630251	ABS 50	28	70	44	708,20	**06397**
HSK-A 100	A0650251	ABS 50	28	80	51	829,90	**10097**

Spare parts SZID	XX Clamping screw Article no. 84 950 ... EUR		XX Taper screw Article no. 84 950 ... EUR		XX Set Article no. 84 950 ... EUR	
ABS 50	12,64	**20300**	16,22	**20400**	28,81	**99800**

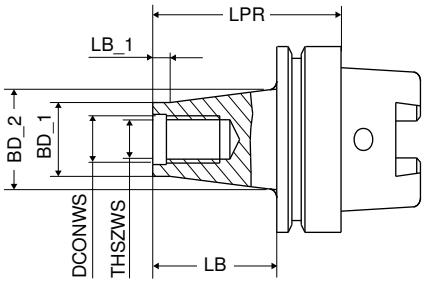
Accessories


Coolant transfer pipe
→ 138


Extension
→ 17|27


Others
→ 17|34

Adapter for milling cutters with threaded end







AD
G 2,5 n_{max} 30000

WA

Adapter	THSZWS	DCONWS	LB	BD_1	BD_2	LB_1	LPR	Article no. 56 714 ...	
		mm	mm	mm	mm	mm	mm	EUR	
HSK-A 63	M8	8,5	25	13,8	15	12	51	168,90	**081**
HSK-A 63	M8	8,5	50	13,8	23	12	76	181,40	**082**
HSK-A 63	M8	8,5	75	13,8	25	12	101	194,00	**083**
HSK-A 63	M8	8,5	100	13,8	30	12	126	208,70	**084**
HSK-A 63	M10	10,5	25	18,0	23	12	51	168,90	**101**
HSK-A 63	M10	10,5	50	18,0	25	12	76	181,40	**102**
HSK-A 63	M10	10,5	75	18,0	30	12	101	194,00	**103**
HSK-A 63	M10	10,5	100	18,0	35	12	126	208,70	**104**
HSK-A 63	M12	12,5	25	21,0	24	12	51	168,90	**121**
HSK-A 63	M12	12,5	50	21,0	30	12	76	181,40	**122**
HSK-A 63	M12	12,5	75	21,0	35	12	101	194,00	**123**
HSK-A 63	M12	12,5	100	21,0	38	12	126	208,70	**124**
HSK-A 63	M12	12,5	125	21,0	43	12	151	223,40	**125**
HSK-A 63	M12	12,5	150	21,0	45	12	176	234,90	**126**
HSK-A 63	M16	17,0	25	29,0	29	12	51	168,90	**161**
HSK-A 63	M16	17,0	50	29,0	34	12	76	181,40	**162**
HSK-A 63	M16	17,0	75	29,0	35	12	101	194,00	**163**
HSK-A 63	M16	17,0	100	29,0	40	12	126	208,70	**164**
HSK-A 63	M16	17,0	125	29,0	44	12	151	223,40	**165**
HSK-A 63	M16	17,0	150	29,0	48	12	176	234,90	**166**

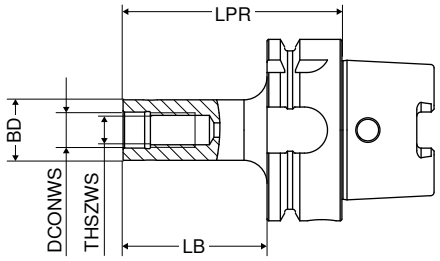
Accessories


Extension-Reduction set
→ 17|19


Coolant transfer pipe
→ 138


Others
→ 17|34

Adapter for milling cutters with threaded end







AD
G 2,5 n_{max} 25000

WA

Adapter	THSZWS	DCONWS	BD	LB	LPR	Article no. 56 719 ...	
		mm	mm	mm	mm	EUR	
HSK-A 63	M8	8,5	13,8	50	76	181,40	**082**
HSK-A 63	M10	10,5	18,0	50	76	181,40	**102**
HSK-A 63	M10	10,5	18,0	100	126	208,70	**104**
HSK-A 63	M12	12,5	21,0	50	76	181,40	**122**
HSK-A 63	M12	12,5	21,0	100	126	208,70	**124**
HSK-A 63	M16	17,0	29,0	50	76	181,40	**162**
HSK-A 63	M16	17,0	29,0	100	126	208,70	**164**

Accessories


Extension-Reduction set
→ 17|19

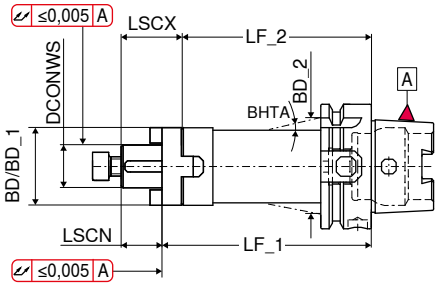

Coolant transfer pipe
→ 138


Others
→ 17|34

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:
Toolholder with retaining screw, driving ring and dowel spring





	Adapter	DCONWS	LF_1	LF_2	BD	BD_1	BD_2	LSCX	LSCN	BHTA	A G 6,3 n_{max} 15000 Y8 Article no. 81 738 ... EUR		A G 6,3 n_{max} 15000 Y8 Article no. 81 738 ... EUR		A G 6,3 n_{max} 15000 Y8 Article no. 81 739 ... EUR		A G 6,3 n_{max} 15000 Y8 Article no. 81 740 ... EUR	
		mm	mm	mm	mm	mm	mm	mm	mm									
short	HSK-A 63	16	60	50	32			27	17		117,80	616						
short	HSK-A 63	22	60	48	40			31	19		119,50	622						
short	HSK-A 63	27	60	48	48			33	21		123,90	627						
short	HSK-A 63	32	60	46	53			38	24		127,30	632						
short	HSK-A 63	40	70	56	70			41	27		129,00	640						
short	HSK-A 100	16	60	50	32			27	17				159,40	116				
short	HSK-A 100	22	60	48	40			31	19				161,10	122				
short	HSK-A 100	27	60	48	48			33	21				162,90	127				
short	HSK-A 100	32	60	46	58			38	24				170,60	132				
short	HSK-A 100	40	70	56	70			41	27				174,10	140				
long	HSK-A 63	16	100	90	32			27	17						129,00	616		
long	HSK-A 63	22	100	88	40			31	19						129,00	622		
long	HSK-A 63	27	100	88	48			33	21						130,80	627		
long	HSK-A 63	32	100	86	58			38	24						138,60	632		
long	HSK-A 63	40	100	86	70			41	27						159,40	640		
extra-long	HSK-A 63	16	160	150		32	43,21	27	17	4,5°							145,50	616
extra-long	HSK-A 63	22	160	148		40	47,25	31	19	3,0°							145,50	622
extra-long	HSK-A 63	27	160	148	48			33	21								147,20	627
extra-long	HSK-A 63	32	160	146		58	53,00	38	24								156,70	632
extra-long	HSK-A 63	40	160	146		70	53,00	41	27								181,10	640

These combination shell adapters are prebalanced without driving ring, dowel screw and retaining screw.

Spare parts DCONWS		Y8 Parallel key Article no. 83 950 ... EUR		Y8 Drive ring Article no. 83 370 ... EUR		Y8 Retaining screw Article no. 81 950 ... EUR	
16	4 x 4 x 20	1,63	284	9,91	116	M8x20 - 30 Nm	2,96 020
16	4 x 4 x 20	1,63	284	9,91	116	M8x20 - 30 Nm	2,96 020
22	6 x 6 x 25	1,63	285	11,01	122	M10x30 - 50 Nm	3,44 021
27	7 x 7 x 25	3,15	286	11,84	127	M12x35 - 80 Nm	3,86 022
32	8 x 7 x 28	1,87	287	14,16	132	M16x40 - 110 Nm	5,09 023
40	10 x 8 x 32	2,00	288	21,07	140		

Accessories


Milling Adapter Rings → 17|28


Coolant transfer pipe → 138


Others → 17|34

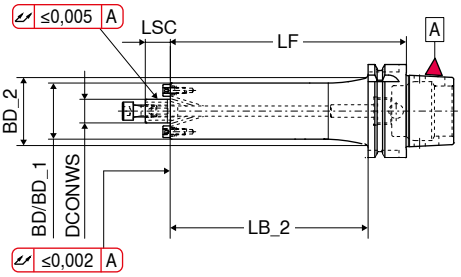
16

Shell mill adapter

▲ For milling cutters with transverse or longitudinal groove ISO 3937

Scope of supply:

Holder with fixed drive dogs, dowel spring and retaining screw





	Adapter	DCONWS	LB_2	LF	BD	BD_1	BD_2	LSC	AD G 2,5 n_{max} 25000 Y8 Article no. 84 750 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 754 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 755 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 757 ...	
		mm	mm	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
short	HSK-A 63	16	34	60	38			17	194,00	616						
	HSK-A 63	22	34	60	48			19	196,10	622						
	HSK-A 63	27	34	60	58			21	209,70	627						
	HSK-A 63	32	34	60	72			24	211,80	632						
	HSK-A 63	40	34	70	80			27	215,00	640						
	HSK-A 100	16	31	60	38			17	204,50	116						
	HSK-A 100	22	31	60	48			19	210,70	122						
	HSK-A 100	27	31	60	58			21	215,00	127						
	HSK-A 100	32	31	60	72			24	223,40	132						
	HSK-A 100	40	41	70	80			27	242,20	140						
long	HSK-A 63	16	74	100		38	44,3	17			211,80	616				
	HSK-A 63	22	74	100		48	50,3	19			211,80	622				
	HSK-A 63	27	74	100	58			21			225,50	627				
	HSK-A 63	32	74	100	72			24			225,50	632				
	HSK-A 63	40	74	100	80			27			236,00	640				
	HSK-A 100	16	71	100		38	46,3	17			211,80	116				
	HSK-A 100	22	71	100		48	56,3	19			222,30	122				
	HSK-A 100	27	71	100		58	66,3	24			228,50	127				
	HSK-A 100	32	71	100		72	80,3	24			238,00	132				
	HSK-A 100	40	71	100	80			27			245,40	140				
medium length	HSK-A 63	16	104	130		38	44,3	17					213,90	616		
	HSK-A 63	22	104	130		48	50,3	19					213,90	622		
	HSK-A 63	27	104	130	58			21					226,50	627		
	HSK-A 63	32	104	130	72			24					226,50	632		
	HSK-A 63	40	104	130	80			27					237,00	640		
	HSK-A 100	16	101	130		38	46,3	17					227,50	116		
	HSK-A 100	22	101	130		48	56,3	19					237,00	122		
	HSK-A 100	27	101	130		58	66,3	21					251,70	127		
	HSK-A 100	32	101	130		72	80,3	24					254,80	132		
	HSK-A 100	40	101	130	80			27					268,50	140		
extra-long	HSK-A 63	16	134	160		38	44,3	17							192,90	616
	HSK-A 63	22	134	160		48	50,3	19							200,20	622
	HSK-A 63	27	134	160	58			21							207,70	627
	HSK-A 63	32	134	160	72			24							217,00	632
	HSK-A 63	40	134	160	80			27							224,40	640
	HSK-A 100	16	131	160		38	46,3	17							238,00	116
	HSK-A 100	22	131	160		48	56,3	19							241,20	122
	HSK-A 100	27	131	160		58	66,3	21							252,70	127
	HSK-A 100	32	131	160		72	80,3	24							260,00	132
	HSK-A 100	40	131	160	80			27							270,50	140

Spare parts facemill adapters

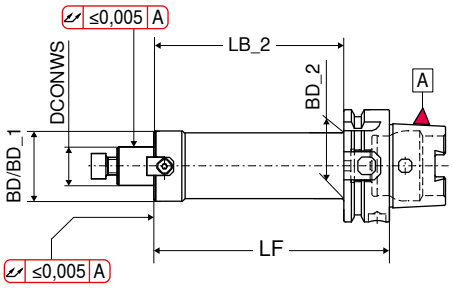
Spare parts DCONWS		Y8 Parallel key Article no. 83 950 ... EUR			W7 Drive dogs Article no. 62 950 ... EUR			W7 Differential screw Article no. 62 950 ... EUR			Y8 Clamping screw Article no. 83 950 ... EUR	
16	4 x 4 x 20	1,63	284	M4x15	17,93	442	M8x16 - SW6	44,25	433	M8x25	2,88	113
22	6 x 6 x 25	1,63	285	M5x17	17,93	443	M10x18 - SW8	51,07	434	M10x25	3,33	124
27	7 x 7 x 25	3,15	286	M6x21	17,93	444	M12x20 - SW10	56,20	435	M12x30	3,67	125
32	8 x 7 x 28	1,87	287	M6x22	17,93	445	M16x26 - SW12	73,19	436	M16x35	4,56	126
40	10 x 8 x 32	2,00	288	M6x23	17,93	446	M20x30 - SW14	91,85	437	M20x40	6,48	112

Shell mill adapter

- ▲ Enlarged seating surface (Ø BD)
- ▲ For face mills with transverse groove ISO 3937

Scope of supply:

Toolholder with retaining screw and drive dogs





	Adapter	DCONWS mm	LB_2 mm	LF mm	BD mm	BD_1 mm	BD_2 mm	AD G 2,5 n_{max} 18000 Y8 Article no. 81 728 ... EUR		A G 2,5 n_{max} 18000 Y8 Article no. 81 741 ... EUR		A G 2,5 n_{max} 18000 Y8 Article no. 81 742 ... EUR		AD G 2,5 n_{max} 18000 Y8 Article no. 81 747 ... EUR	
short	HSK-A 63	16	24	50	38			146,40	216	97,92	616				
short	HSK-A 63	22	24	50	48			148,20	222	99,62	622				
short	HSK-A 63	27	34	60	58			157,70	227	104,80	627				
short	HSK-A 63	32	34	60	78			159,40	232	109,10	632				
short	HSK-A 63	40	34	60	88			151,60	240 1)	126,50	640 1)				
short	HSK-A 100	16	21	50	38			155,00	116						
short	HSK-A 100	22	21	50	48			158,50	122						
short	HSK-A 100	27	21	50	58			161,10	127						
short	HSK-A 100	32	21	50	78			168,10	132						
short	HSK-A 100	40	31	60	88			182,80	140 1)						
short	HSK-A 100	60	41	70	129			205,30	160 2)						
long	HSK-A 63	16	74	100	38							138,60	616	159,40	616
long	HSK-A 63	22	74	100	48							140,30	622	159,40	622
long	HSK-A 63	27	74	100		58	53					142,00	627	170,60	627
long	HSK-A 63	32	74	100		78	53					142,00	632	170,60	632
long	HSK-A 63	40	74	100		88	53					147,20	640 1)	177,60	640 1)

1) With cross recess screw and threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

16

Spare parts facemill adapters

Y8



Cross nut key

Y8



Retaining screw

Y8



Retaining screw

Spare parts DCONWS	Article no. 83 368 ... EUR			Article no. 83 367 ... EUR			Article no. 81 950 ... EUR	
16	10,69	116	M8	3,23	016	M8x20 - 30 Nm	2,96	020
22	13,32	122	M10	3,54	022	M10x30 - 50 Nm	3,44	021
27	17,09	127	M12	4,53	027	M12x35 - 80 Nm	3,86	022
32	22,02	132	M16	7,28	032	M16x40 - 110 Nm	5,09	023
40	30,73	140	M20	11,54	040			
60								

Y8



Drive dogs

Y8



Drive screw

DCONWS		Article no. 81 950 ... EUR			Article no. 81 950 ... EUR	
16	8x8x14	7,23	001	M3x8	0,38	010
22	10x10x17	7,49	002	M4x8	0,48	011
27	12x14x20	8,48	003	M4x14	0,57	012
32	14x14x22	8,74	004	M5x13	0,64	013
40	15,9x16x21	11,22	005	M6x16	0,78	014
60	25,4x25x31	14,57	006	M12x25	8,41	015

Accessories



Extensions

→ 17|26



Coolant transfer pipe

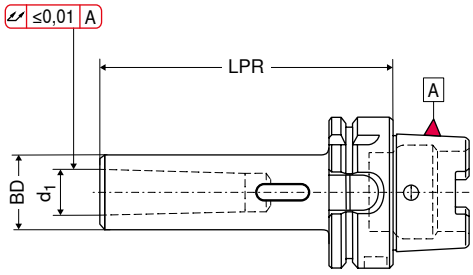
→ 138



Others

→ 17|34

Milling sleeve adapter for Morse taper shanks to DIN 228-2 D





Adapter	d_1	LPR	BD	A G 6,3 n_{max} 15000 Y8 Article no. 81 744 ...		A G 6,3 n_{max} 10000 Y8 Article no. 81 744 ...	
		mm	mm	EUR		EUR	
HSK-A 63	MK1	100	25	110,80	**601**		
HSK-A 63	MK2	120	32	117,80	**602**		
HSK-A 63	MK3	140	40	121,30	**603**		
HSK-A 63	MK4	160	48	130,80	**604**		
HSK-A 100	MK1	110	25			134,30	**101**
HSK-A 100	MK2	120	32			138,60	**102**
HSK-A 100	MK3	150	40			142,00	**103**
HSK-A 100	MK4	170	48			155,00	**104**
HSK-A 100	MK5	200	63			202,70	**105**

Accessories

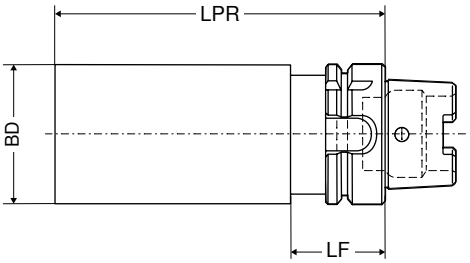

Morse taper adapter sleeve
→ 17|4


Coolant transfer pipe
→ 138


Others
→ 17|34

Blank

- Material: 20NiCrMo2
- For production of special tools
- Taper hardened and ground
- Tool 35^{+3} HRc







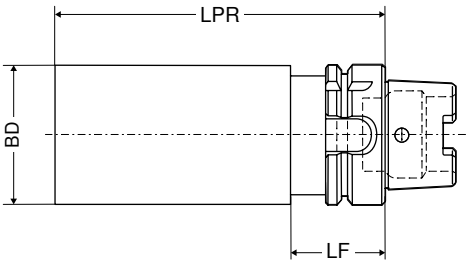
A

Y8

Adapter	BD	LPR	LF	Article no. 81 745 ...	
	mm	mm	mm	EUR	
HSK-A 32	35,0	150	35	86,62	**335**
HSK-A 40	40,0	150	35	86,62	**440**
HSK-A 40	52,0	200	35	101,30	**452**
HSK-A 50	52,0	200	42	102,20	**552**
HSK-A 50	63,0	200	42	106,50	**563**
HSK-A 63	63,0	200	42	116,10	**663**
HSK-A 63	80,0	250	42	124,70	**680**
HSK-A 100	63,0	200	45	149,00	**163**
HSK-A 100	80,0	250	45	178,40	**180**
HSK-A 100	97,5	250	45	202,70	**190**

Blank

- For the production of special tools
- Material: case hardened steel 16 MnCr 5
- Taper hardened and ground
- Tool production area = soft







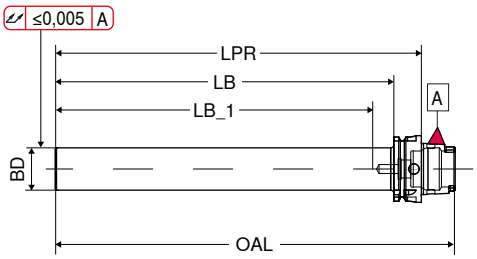
A

Y8

Adapter	BD	LPR	LF	Article no. 84 799 ...	
	mm	mm	mm	EUR	
HSK 63	63	200	42	153,10	**663**
HSK 63	80	250	42	165,70	**680**

Test arbor

Scope of supply:
In wooden box





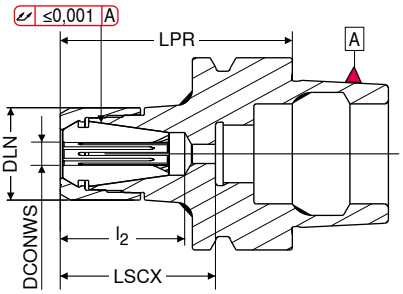
Adapter	BD	LPR	LB_1	LB	OAL	Y8 Article no. 81 746 ...	
	mm	mm	mm	mm	mm	EUR	
HSK-A 63	40	346	300	320	378	317,30	**063**
HSK-A 100	40	349	300	320	399	405,40	**100**

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P







AD
G 2,5 n_{max} 30000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 mm	for collet	Y8 Article no. 84 776 ... EUR	
HSK-E 40	2 - 16	60	40	39		430E (ER25)	140,70	**417**
HSK-E 50	2 - 16	70	40	49	30 - 39	430E (ER25)	155,90	**516**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for collet	Y8  Lock nut IK Article no. 84 950 ... EUR		Y8  Lock nut Article no. 84 950 ... EUR		Y8  Stop screw 1 Article no. 83 950 ... EUR	
430E (ER25)	38,22	**013**	31,16	**003**	10,35	**338**

Accessories


ER collet
→ 208–211, 213


Sealing ring
→ 207


Roll key
→ 17|36


Roll key device
→ 17|36


Coolant transfer pipe
→ 138

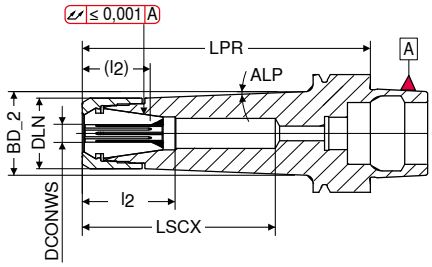

Others
→ 17|34

ER Precision tapered collet chuck

- For special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





	Adapter	DCONWS	LPR	DLN	BD_2	LSCX	l_2 (l_2)	ALP	for collet	AD G 2,5 n_{max} 30000 Y8 Article no. 84 774 ... EUR		AD G 6,3 n_{max} 42000 Y8 Article no. 84 774 ... EUR	
		mm	mm	mm	mm	mm	mm						
short	HSK-E 25	1 - 5	35	10		16			4004E (ER08 mini)	174,90	051		
short	HSK-E 25	1 - 7	35	16		22		2,5°	4008E (ER11 mini)	157,80	071		
short	HSK-E 32	1 - 7	50	16	17,5	31	18 - 20	4,5°	4008E (ER11 mini)	151,80	307		
short	HSK-E 32	1 - 7	50	16	17,5	31	18 - 20	4,5°	4008E (ER11 mini)			157,90	321
short	HSK-E 32	1 - 7	60	16	19,2	41	18 - 28	4,5°	4008E (ER11 mini)			177,90	322
short	HSK-E 32	1 - 7	70	16	20,8	45	18 - 32	4,5°	4008E (ER11 mini)			177,90	323
short	HSK-E 40	1 - 7	50	16	17,5	31	18 - 20	4,5°	4008E (ER11 mini)	129,70	407		
short	HSK-E 50	1 - 7	60	16	19,2	37	15 - 23	4,5°	4008E (ER11 mini)	153,90	507		
short	HSK-E 25	1 - 10	45	22		30			426E (ER16 mini)	147,80	101		
short	HSK-E 32	1 - 10	55	22	25,8	40	28 - 32 (12 - 22)	4,5°	426E (ER16 mini)	143,70	310		
short	HSK-E 40	1 - 10	55	22	25,8	38	28 - 30 (12 - 20)	4,5°	426E (ER16 mini)	111,60	410		
short	HSK-E 50	1 - 10	60	22	25,4	39	28 - 31 (12 - 21)	4,5°	426E (ER16 mini)	123,60	510		
long	HSK-E 40	1 - 7	100	16	25,4	64	18 - 36 (12 - 26)	4,5°	4008E (ER11 mini)	145,80	408		
long	HSK-E 50	1 - 7	100	16	25,4	50	15 - 30 (10 - 21)	4,5°	4008E (ER11 mini)	175,90	508		
long	HSK-E 40	1 - 10	100	22	29,0	66	28 - 48 (12 - 38)	2,5°	426E (ER16 mini)	133,70	411		
long	HSK-E 50	1 - 10	100	22	28,2	72	28 - 48 (12 - 38)	2,5°	426E (ER16 mini)	139,70	511		

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, dimension in brackets ( ) = with back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts

for collet	Mini lock nut IK Y8 Article no. 84 950 ... EUR		Mini lock nut Y8 Article no. 84 950 ... EUR		Stop screw 2 Y8 Article no. 83 950 ... EUR		Stop screw 1 Y8 Article no. 83 950 ... EUR	
4004E (ER08 mini)			38,19	040				
4008E (ER11 mini)			33,15	041	13,53	340	9,93	336
426E (ER16 mini)	41,22	035	33,15	034	14,08	341	9,93	337

Accessories


ER collet
→ 208–213


Sealing ring
→ 207


Device
→ 17|35


Roll key
→ 17|36


Roll key device
→ 17|36


Coolant transfer pipe
→ 138

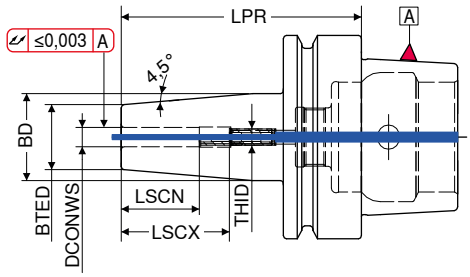

Others
→ 17|34

16

Shrink fit adapters

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG






AD
G 2,5 n_{max} 25000
Y8
Article no. 84 307 ...


AD
G 2,5 n_{max} 25000
Y8
Article no. 84 308 ...


AD
G 2,5 n_{max} 25000
Y8
Article no. 84 309 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	EUR		EUR		EUR	
short	HSK-E 32	3	60	10	15	28	12	M5	125,90	103				
	HSK-E 32	4	60	10	15	28	16	M5	125,90	104				
	HSK-E 32	5	60	10	15	30	20	M5	125,90	105				
	HSK-E 32	6	70	21	25	36	26	M5	115,40	106				
	HSK-E 32	8	70	21	25	36	26	M6	115,40	108				
	HSK-E 32	10	75	24	29	41	31	M8x1	115,40	110				
	HSK-E 32	12	80	24	29	47	37	M10x1	115,40	112				
	HSK-E 40	3	60	10	15	28	12	M6			153,10	103		
	HSK-E 40	4	60	10	15	28	16	M6			148,90	104		
	HSK-E 40	5	60	10	15	30	20	M6			148,90	105		
	HSK-E 40	6	80	21	27	36	26	M5			125,90	106		
	HSK-E 40	8	80	21	27	36	26	M6			125,90	108		
	HSK-E 40	10	80	24	32	41	31	M8x1			125,90	110		
	HSK-E 40	12	90	24	32	47	37	M10x1			125,90	112		
	HSK-E 40	14	90	27	34	47	37	M10x1			125,90	114		
	HSK-E 40	16	90	27	34	50	40	M12x1			125,90	116		
	HSK-E 50	3	80	10	15	22	12	M6					154,10	103
	HSK-E 50	4	80	15	22	26	16	M6					151,00	104
	HSK-E 50	5	80	15	22	30	20	M6					151,00	105
	HSK-E 50	6	80	21	27	36	26	M5					142,60	106
	HSK-E 50	8	80	21	27	36	26	M6					142,60	108
	HSK-E 50	10	85	24	32	41	31	M8x1					142,60	110
	HSK-E 50	12	90	24	32	47	37	M10x1					142,60	112
	HSK-E 50	14	90	27	34	47	37	M10x1					142,60	114
	HSK-E 50	16	95	27	34	50	40	M12x1					142,60	116
	HSK-E 50	18	95	33	42	50	40	M12x1					142,60	118
	HSK-E 50	20	100	33	42	52	42	M16x1					142,60	120

→ Min. clamping depth, Page 233


Y7
Stop screw IK


Y7
Thro' coolant back stop screw


Y7
Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
3 - 5	M6x14 - SW2	8,11	417	M5x14 - SW2	3,91	411			
6							M5x12,5 - SW2,5	8,11	418
8							M6x12,5 - SW3	8,11	419
10							M8x1x13,5 - SW3	8,11	420
12 - 14							M10x1x13,5 - SW5	8,11	421
16 - 18							M12x1x13,5 - SW5	8,11	422
20							M16x1x13,5 - SW5	9,34	423

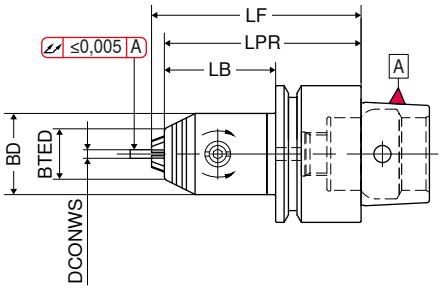
Spare part 83 950 411 only for HSK-E 32. Spare part 83 950 417 for HSK-E 40/HSK-E 50.

Micro-precision collet chuck

- Bidirectional
- For speeds up to 60,000 1/min.

Scope of supply:

Holder including clamping wrench SW 2 x 60 mm







AD

G 2,5 n_{max} 18000

Adapter	DCONWS	LB	LPR	LF	BD	BTED	TQX	Y7 Article no. 84 712 ...	EUR	
	mm	mm	mm	mm	mm	mm	Nm			
HSK-E 25	0,2 - 3,4	27	37	40	19	12	2		490,70	**234**
HSK-E 32	0,2 - 3,4	26	46	49	19	12	2		529,50	**334**
HSK-E 40	0,2 - 3,4	26	46	49	19	12	2		549,50	**434**

Torx blade

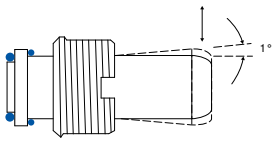


Torque screwdriver

Spare parts for Article no.	Y7 Article no. 80 950 ...	EUR			Y7 Article no. 80 021 ...	EUR	
84 712 234		5,60	**152**	1,8 Nm		97,04	**018**
84 712 334		5,60	**152**	1,8 Nm		97,04	**018**
84 712 434		5,60	**152**	1,8 Nm		97,04	**018**

Coolant pipe

Scope of supply:
Complete, including seals





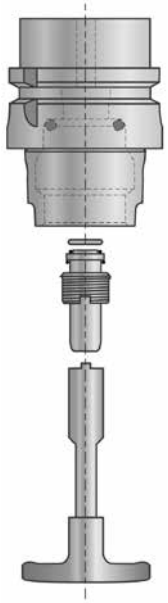
Size	G	Y8 Article no. 83 760 ...	
		EUR	
HSK 32	M10 x 1	7,73	032
HSK 40	M12 x 1	7,73	040
HSK 50	M16 x 1	7,73	050
HSK 63	M18 x 1	7,96	063
HSK 80	M20 x 1,5	9,18	080
HSK 100	M24 x 1,5	9,52	100

Key



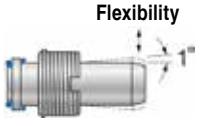
Size	Y8 Article no. 83 758 ...	
	EUR	
HSK 32	15,10	032
HSK 40	15,10	040
HSK 50	15,10	050
HSK 63	16,36	063
HSK 80	17,41	080
HSK 100	18,87	100

Coolant pipe for HSK tools

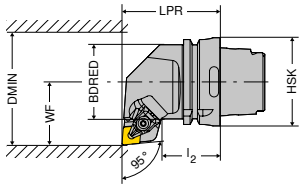


The coolant pipe is ideally mounted in vertical direction – from the bottom to the top. In this manner the sealing ring is prevented from being compressed during locating which would cause the loss of its sealing function. After mounting, the coolant pipe can be moved only to a minimum degree according to DIN (± 1°).

Flexibility



MaxiLock-D – DCLN 95° – Toolholder with top clamping



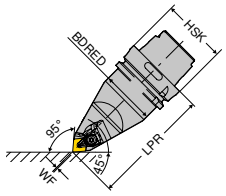


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 504 ... EUR		Right-hand 2D/80 Article no. 74 503 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 DCLN R/L 12	HSK-T 63	70	42	53	45	100	CN.. 1204	229,10	**512**	229,10	**512**
HSK T63 DCLN R/L 16	HSK-T 63	70	42	53	45	125	CN.. 1606	229,10	**516**	229,10	**516**
HSK T63 DCLN R/L 19	HSK-T 63	70	42	53	45	125	CN.. 1906	229,10	**519**	229,10	**519**
HSK T100 DCLN R/L 12	HSK-T 100	80	45	88	55	125	CN.. 1204	268,90	**712**	268,90	**712**
HSK T100 DCLN R/L 19	HSK-T 100	80	45	88	55	125	CN.. 1906	268,90	**719**	268,90	**719**

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR	
for Article no.										
74 504 512 / 74 503 512	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**810**
74 504 516 / 74 503 516	26,69	**825**	T20 - IP	12,54	**129**	M5x14 - IP	4,23	**821**	12,05	**814**
74 504 519 / 74 503 519	29,19	**826**	T20 - IP	12,54	**129**	M5x14 - IP	4,23	**821**	12,91	**816**
74 504 712 / 74 503 712	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**810**
74 504 719 / 74 503 719	29,19	**826**	T20 - IP	12,54	**129**	M5x14 - IP	4,23	**821**	12,91	**816**

MaxiLock-D – DCMN 95° – Toolholder with top clamping



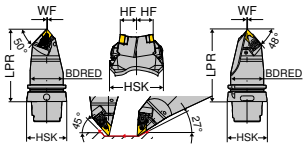


ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 506 ... EUR	
		mm	mm	mm			
HSK T63 DCMN N 12	HSK-T 63	115	53	0	CN.. 1204	314,20	**512**
HSK T100 DCMN N 12	HSK-T 100	150	88	0	CN.. 1204	369,50	**712**

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR	
for Article no.										
74 506 512	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**810**
74 506 712	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**810**

16

MaxiLock-D – DCMN + DDMN – Toolholder with top clamping



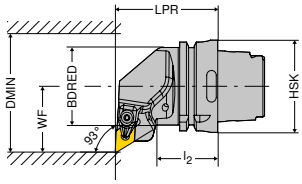


ISO designation	Adapter	LPR	BDRED	WF	HF	Insert	Neutral 2D/80 Article no. 74 600 ... EUR	
		mm	mm	mm	mm			
HSK T63 DCMN L 12 + DDMN L 15	HSK-T 63	115	53	0,5	20	CN.. 1204 / DN.. 1506	592,90	**501**
HSK T100 DCMN L 12 + DDMN L 15	HSK-T 100	150	88	0,5	20	CN.. 1204 / DN.. 1506	677,10	**701**

Face turning maximum 78 mm

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR	
for Article no.										
74 600 501	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**	7,89	**810**
74 600 701	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**	7,89	**810**

MaxiLock-D – DDUN 93° – Toolholder with top clamping



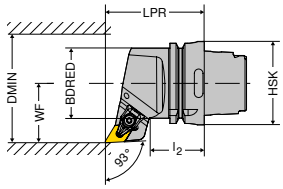


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 516 ... EUR		Right-hand 2D/80 Article no. 74 515 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 DDUN R/L 15	HSK-T 63	70	42	53	45	125	DN.. 1506	229,10	**515**	229,10	**515**
HSK T100 DDUN R/L 15	HSK-T 100	80	45	88	55	125	DN.. 1506	268,90	**715**	268,90	**715**

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR	
for Article no.								
74 516 515 / 74 515 515	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**
74 516 715 / 74 515 715	23,77	**824**	T15 - IP	11,89	**128**	M4,5x12 - IP	2,98	**820**	7,89	**811**

MaxiLock-D – DDJN 93° – Toolholder with top clamping



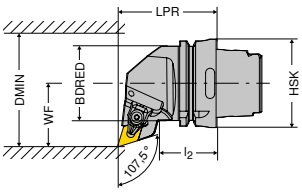


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 512 ... EUR		Right-hand 2D/80 Article no. 74 511 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 DDJN R/L 15	HSK-T 63	75	42	53	45	125	DN.. 1506	229,10	515	229,10	515
HSK T100 DDJN R/L 15	HSK-T 100	85	45	88	55	125	DN.. 1506	268,90	715	268,90	715

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
74 512 515 / 74 511 515	23,77	824	T15 - IP 11,89	128	M4,5x12 - IP 2,98	820	7,89	811
74 512 715 / 74 511 715	23,77	824	T15 - IP 11,89	128	M4,5x12 - IP 2,98	820	7,89	811

MaxiLock-D – DDHN 107.5° – Toolholder with top clamping





Illustrations show right-hand versions

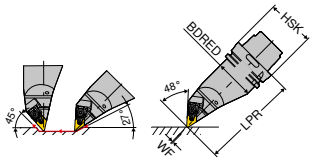
ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 508 ... EUR		Right-hand 2D/80 Article no. 74 507 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 DDHN R/L 15	HSK-T 63	70	42	53	45	125	DN.. 1506	229,10	515	229,10	515

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.	EUR		EUR		EUR		EUR	
74 508 515 / 74 507 515	23,77	824	T15 - IP 11,89	128	M4,5x12 - IP 2,98	820	7,89	811

16

MaxiLock-D – DDMN 48° – Toolholder with top clamping





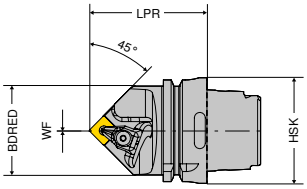


ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 519 ... EUR	
		mm	mm	mm			
HSK T63 DDMN L 15	HSK-T 63	130	53	0	DN.. 1506	314,20	**515**
HSK T100 DDMN L 15	HSK-T 100	160	88	0	DN.. 1506	369,50	**715**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR	
74 519 515	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**811**
74 519 715	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**811**

MaxiLock-D – DSDN 45° – Toolholder with top clamping



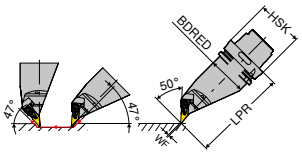




ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 522 ... EUR	
		mm	mm	mm			
HSK T63 DSDN N 12	HSK-T 63	70	53	0	SN.. 1204	229,10	**512**
HSK T63 DSDN N 15	HSK-T 63	75	53	0	SN.. 1506	229,10	**515**
HSK T100 DSDN N 12	HSK-T 100	80	88	0	SN.. 1204	268,90	**712**
HSK T100 DSDN N 19	HSK-T 100	85	88	0	SN.. 1906	268,90	**719**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide support S Article no. 70 950 ... EUR	
74 522 512	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**813**
74 522 515	26,69	**825**	T20 - IP	12,54 **129**	M5x14 - IP	4,23 **821**	12,05	**833**
74 522 712	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98 **820**	7,89	**813**
74 522 719	29,19	**826**	T20 - IP	12,54 **129**	M5x14 - IP	4,23 **821**	12,91	**817**

MaxiLock-D – DVMN 50° – Toolholder with top clamping

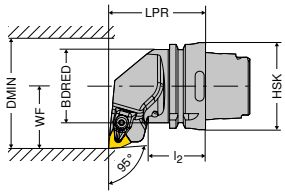




ISO designation	Adapter	LPR mm	BDRED mm	WF mm	Insert	Left-hand 2D/80 Article no. 74 525 ... EUR	
HSK T63 DVMN L 16	HSK-T 63	130	53	0	VN.. 1604	365,10	**516**
HSK T100 DVMN L 16	HSK-T 100	160	88	0	VN.. 1604	448,00	**716**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...	
for Article no.	**EUR**		**EUR**		**EUR**		**EUR**	
74 525 516	28,76	**835**	T09 - IP 11,24	**126**	M3x7 - IP 3,14	**819**	5,59	**806**
74 525 716	28,76	**835**	T09 - IP 11,24	**126**	M3x7 - IP 3,14	**819**	5,59	**806**

MaxiLock-D – DWLN 95° – Toolholder with top clamping





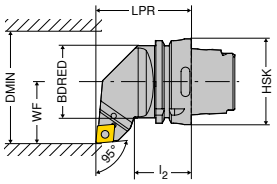
Illustrations show right-hand versions

ISO designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	Insert	Left-hand 2D/80 Article no. 74 529 ... EUR		Right-hand 2D/80 Article no. 74 528 ... EUR	
HSK T63 DWLN R/L 08	HSK-T 63	70	42	53	45	125	WN.. 0804	229,10	**508**	229,10	**508**
HSK T100 DWLN R/L 08	HSK-T 100	80	45	88	55	125	WN.. 0804	268,90	**708**	268,90	**708**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat W Article no. 70 950 ...	
for Article no.	**EUR**		**EUR**		**EUR**		**EUR**	
74 529 508 / 74 528 508	23,77	**824**	T15 - IP 11,89	**128**	M4,5x12 - IP 2,98	**820**	9,93	**812**
74 529 708 / 74 528 708	23,77	**824**	T15 - IP 11,89	**128**	M4,5x12 - IP 2,98	**820**	9,93	**812**

MaxiLock-S – SCLC 95° – Toolholder with screw clamping







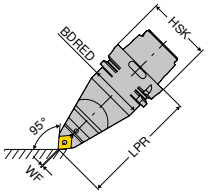
Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 541 ... EUR		Right-hand 2D/80 Article no. 74 540 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 SCLC R/L 12	HSK-T 63	70	42	53	45	100	CC.. 1204	226,80	512	226,80	512

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.									
74 541 512 / 74 540 512	T15/SW	8,28	398	M4,5x12	2,57	114	12,37	166	M4,5	4,64	170

MaxiLock-S – SCMC 50° – Toolholder with screw clamping





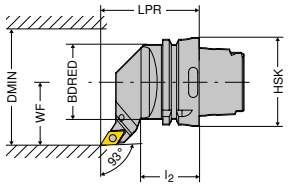


ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 542 ... EUR	
		mm	mm	mm			
HSK T63 SCMC N 12	HSK-T 63	115	53	0	CC.. 1204	309,70	512

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR		2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.									
74 542 512	T15/SW	8,28	398	M4,5x12	2,57	114	12,37	166	M4,5	4,64	170

MaxiLock-S – SDJC 93° – Toolholder with screw clamping







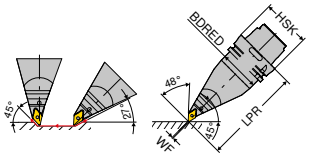
Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 544 ... EUR		Right-hand 2D/80 Article no. 74 543 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 SDJC R/L 11	HSK-T 63	70	42	53	45	100	DC.. 11T3	226,80	**511**	226,80	**511**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 544 511 / 74 543 511	T15/SW	8,28	**398**	M3,5x11	3,14	**113**	7,49	**106**	M3,5	4,64	**171**

MaxiLock-S – SDMC 48° – Toolholder with screw clamping







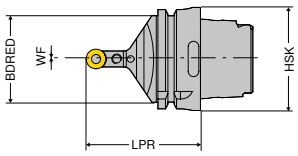
ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 546 ... EUR	
		mm	mm	mm			
HSK T63 SDMC L 11	HSK-T 63	130	53	0	DC.. 11T3	309,70	**511**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 546 511	T15/SW	8,28	**398**	M3,5x11	3,14	**113**	7,49	**106**	M3,5	4,64	**171**

16

MaxiLock-N – PRDC 0° – Toolholder with lever clamping





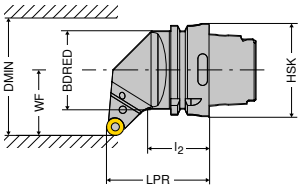


ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 548 ... EUR	
		mm	mm	mm			
HSK T63 PRDC N 12	HSK-T 63	70	53	0	RC.. 1204 MO	229,10	**512**
HSK T100 PRDC N 12	HSK-T 100	80	88	0	RC.. 1204 MO	261,10	**712**
HSK T100 PRDC N 16	HSK-T 100	80	88	0	RC.. 1606 MO	261,10	**716**

Spare parts		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid carbide support R Article no. 70 950 ... EUR	
for Article no.													
74 548 512	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	15,52	**178**	3,19	**208**	7,09	**215**
74 548 712	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	15,52	**178**	3,19	**208**	7,09	**215**
74 548 716	SW03	2,45	**176**	1,37	**196**	1,22	**192**	16,06	**387**	3,50	**390**	12,59	**384**

MaxiLock-N – PRSC – Toolholder with lever clamping







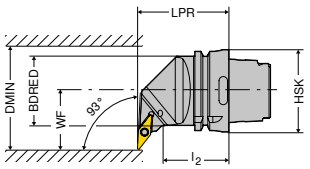
Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 552 ... EUR		Right-hand 2D/80 Article no. 74 551 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 PRSC R/L 12	HSK-T 63	70	44	53	45	100	RC.. 1204 MO	229,10	**512**	229,10	**512**
HSK T100 PRSC R/L 12	HSK-T 100	80	57	88	55	106	RC.. 1204 MO	261,10	**712**	261,10	**712**
HSK T100 PRSC R/L 16	HSK-T 100	80	55	88	55	125	RC.. 1606 MO	261,10	**716**	261,10	**716**

Spare parts		2A/28 Key I Article no. 70 950 ... EUR		2A/28 Shim Article no. 70 950 ... EUR		2A/28 Assembly pin Article no. 70 950 ... EUR		2A/28 Lever Article no. 70 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid carbide support R Article no. 70 950 ... EUR	
for Article no.													
74 552 512 / 74 551 512	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	15,52	**178**	3,19	**208**	7,09	**215**
74 552 712 / 74 551 712	SW2,5	2,45	**175**	1,76	**197**	1,22	**191**	15,52	**178**	3,19	**208**	7,09	**215**
74 552 716 / 74 551 716	SW03	2,45	**176**	1,37	**196**	1,22	**192**	16,06	**387**	3,50	**390**	12,59	**384**

MaxiLock-S – SVUC 93° – Toolholder with screw clamping







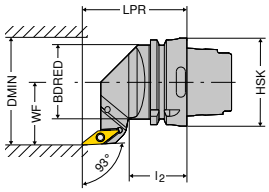
Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 557 ... EUR		Right-hand 2D/80 Article no. 74 558 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 SVUC R/L 16	HSK-T 63	70	42	53	45	100	VC.. 1604	272,10	**516**	272,10	**516**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat V Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 557 516 / 74 558 516	T15/SW	8,28	**398**	M3,5x11	3,14	**113**	10,06	**107**	M3,5	4,64	**171**

MaxiLock-S – SVJC 93° – Toolholder with screw clamping







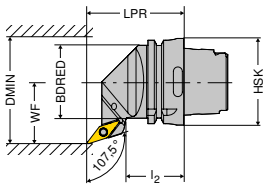
Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 556 ... EUR		Right-hand 2D/80 Article no. 74 555 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 SVJC R/L 16	HSK-T 63	75	42	53	45	100	VC.. 1604	272,10	**516**	272,10	**516**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat V Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 556 516 / 74 555 516	T15/SW	8,28	**398**	M3,5x11	3,14	**113**	10,06	**107**	M3,5	4,64	**171**

MaxiLock-S – SVHC 107.5° – Toolholder with screw clamping







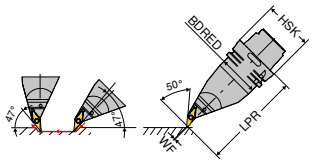
Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 554 ... EUR		Right-hand 2D/80 Article no. 74 553 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 SVHC R/L 16	HSK-T 63	70	42	53	45	100	VC.. 1604	272,10	516	272,10	516

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat V Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 554 516 / 74 553 516	T15/SW	8,28	398	M3,5x11	3,14	113	10,06	107	M3,5	4,64	171

MaxiLock-S – SVMC 50° – Toolholder with screw clamping



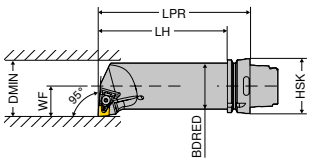




ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 560 ... EUR	
		mm	mm	mm			
HSK T63 SVMC L 16	HSK-T 63	130	53	0	VC.. 1604	365,10	516

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat V Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 560 516	T15/SW	8,28	398	M3,5x11	3,14	113	10,06	107	M3,5	4,64	171

MaxiLock-D – DCLN 95° – Boring bar with top clamping



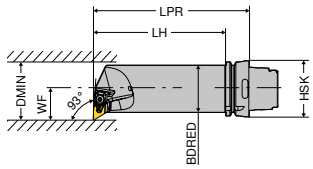


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 529 ... EUR		Right-hand 2D/80 Article no. 74 528 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 50Q DCLN R/L 12	HSK-T 63	175	149	50	35	63	CN.. 1204	314,20	512	314,20	512

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR	
for Article no.										
74 529 512 / 74 528 512	23,77	824	T15 - IP	11,89	128	M4,5x12 - IP	2,98	820	7,89	810

MaxiLock-D – DDUN 93° – Boring bar with top clamping





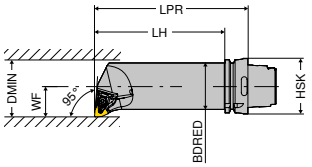
Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 533 ... EUR		Right-hand 2D/80 Article no. 74 532 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 50Q DDUN R/L 15	HSK-T 63	175	149	50	35	63	DN.. 1506	314,20	515	314,20	515

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR			Y7 Key D Article no. 80 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR	
for Article no.										
74 533 515 / 74 532 515	23,77	824	T15 - IP	11,89	128	M4,5x12 - IP	2,98	820	7,89	811

MaxiLock-D – DWLN 95° – Boring bar with top clamping







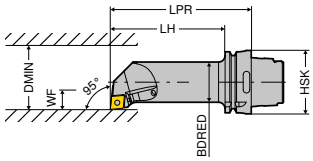
Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 537 ... EUR		Right-hand 2D/80 Article no. 74 536 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 50Q DWLN R/L 08	HSK-T 63	175	149	50	35	63	WN.. 0804	314,20	**508**	314,20	**508**

Spare parts	2A/28 XPress type Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat W Article no. 70 950 ... EUR	
for Article no.								
74 537 508 / 74 536 508	23,77	**824**	T15 - IP	11,89 **128**	M4,5x12 - IP	2,98	**820**	9,93 **812**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping







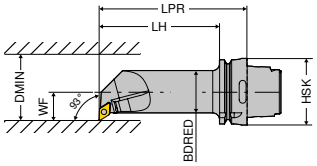
Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 564 ... EUR		Right-hand 2D/80 Article no. 74 563 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 40L SCLC R/L 12	HSK-T 63	140	114	40	27	50	CC.. 1204	312,00	**512**	312,00	**512**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Carbide type C Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 564 512 / 74 563 512	T15/SW	8,28	**398**	M4,5x12	2,57	**114**	12,37	**166**	M4,5	4,64	**170**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping







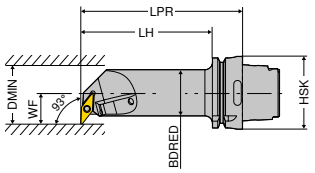
Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 566 ... EUR		Right-hand 2D/80 Article no. 74 565 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 40L SDUC R/L 11	HSK-T 63	140	114	40	27	50	DC.. 11T3	312,00	**511**	312,00	**511**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat D Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 566 511 / 74 565 511	T15/SW	8,28	**398**	M3,5x11	3,14	**113**	7,49	**106**	M3,5	4,64	**171**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping





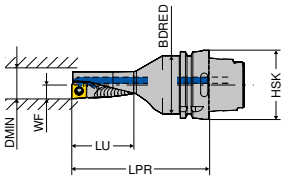


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 568 ... EUR		Right-hand 2D/80 Article no. 74 567 ... EUR	
		mm	mm	mm	mm	mm					
HSK T63 40L SVUC R/L 16	HSK-T 63	140	114	40	27	50	VC.. 1604	362,80	**516**	362,80	**516**

Spare parts		2A/28 Combination Key Article no. 70 950 ... EUR			2A/28 Clamping screw Article no. 70 950 ... EUR		2A/28 Solid Carbide Seat V Article no. 70 950 ... EUR			2A/28 Threaded sleeve Article no. 70 950 ... EUR	
for Article no.											
74 568 516 / 74 567 516	T15/SW	8,28	**398**	M3,5x11	3,14	**113**	10,06	**107**	M3,5	4,64	**171**

EcoCut – HSK-T 2.25xD



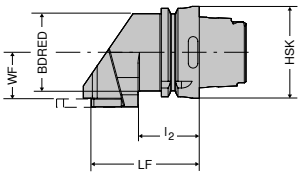


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LU	BDRED	WF	DMIN	Left-hand 2D/80 Article no. 74 591 ... EUR		Right-hand 2D/80 Article no. 74 590 ... EUR	
		mm	mm	mm	mm	mm				
HSK T63 EC 25 R/L 2,25D 13	HSK-T 63	125	56,5	53	12,5	25	320,80	**525**	320,80	**525**
HSK T63 EC 32 R/L 2,25D 17	HSK-T 63	125	72,0	53	16,0	32	320,80	**532**	320,80	**532**

Spare parts	Y7 Key D Article no. 80 950 ... EUR		2A Clamping screw Article no. 70 950 ... EUR	
for Article no.				
74 590 525 / 74 591 525	9,95	**114**	2,52	**280**
74 590 532 / 74 591 532	9,95	**114**	2,52	**280**

ModularClamp MSS – HSK - T Base Holder 0°





Illustrations show right-hand versions

ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	for Grooving Module	Left-hand 2D/80 Article no. 74 581 ... EUR		Right-hand 2D/80 Article no. 74 580 ... EUR	
HSK T63 E25 R/L 00	HSK-T 63	67	42	53	38,7	E25 R/L...	351,80	**525**	351,80	**525**
HSK T63 E32 R/L 00	HSK-T 63	74	42	53	38,7	E32 R/L...	351,80	**532**	351,80	**532**
HSK T100 E32 R/L 00	HSK-T 100	77	45	88	48,7	E32 R/L...	401,60	**732**	401,60	**732**
HSK T100 E25 R/L 00	HSK-T 100	100	45	88	48,7	E25 R/L...	401,60	**725**	401,60	**725**

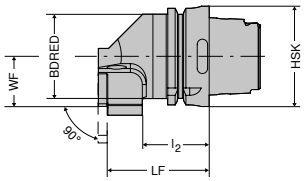

Nozzle


Key D


Clamping screw

Spare parts for Article no.		2D/81 Article no. 70 950 ... EUR		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
74 581 525 / 74 580 525	SD 12 x 8	18,35	**850**	T20	9,95	**114**	M5x18	5,72	**404**
74 581 532 / 74 580 532	SD 12 x 8	18,35	**850**	T25	10,22	**115**	M6x20	4,23	**405**
74 581 732 / 74 580 732	SD 12 x 8	18,35	**850**	T25	10,22	**115**	M6x20	4,23	**405**
74 581 725 / 74 580 725	SD 12 x 8	18,35	**850**	T20	9,95	**114**	M5x18	5,72	**404**

ModularClamp MSS – 90° HSK - T Base Holder





Illustrations show right-hand versions

ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	for Grooving Module	Left-hand 2D/80 Article no. 74 583 ... EUR		Right-hand 2D/80 Article no. 74 582 ... EUR	
HSK T63 E32 R/L 90	HSK-T 63	63,7	42	53	31,5	E32 R/L...	351,80	**532**	351,80	**532**
HSK T100 E32 R/L 90	HSK-T 100	73,7	45	88	50,0	E32 R/L...	401,60	**732**	401,60	**732**

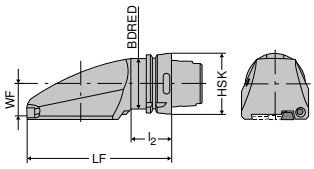

Nozzle


Key D


Clamping screw

Spare parts for Article no.		2D/81 Article no. 70 950 ... EUR		Y7 Article no. 80 950 ... EUR		2A/28 Article no. 70 950 ... EUR	
74 582 532 / 74 583 532	SD 12 x 8	18,35	**850**	T25	10,22	**115**	M6x20	4,23	**405**
74 582 732 / 74 583 732	SD 12 x 8	18,35	**850**	T25	10,22	**115**	M6x20	4,23	**405**

MonoClamp – HSK-T Blade Holder GX/LX/FX/SX



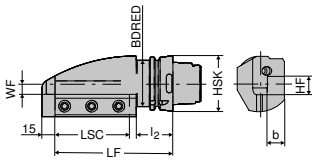


Illustrations show right-hand versions

ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	for parting blades	Left-hand 2D/80 Article no. 74 585 ... EUR		Right-hand 2D/80 Article no. 74 584 ... EUR	
HSK T63 XCLCF 32 R/L 00	HSK-T 63	150	42	53	32	XLCF R/L 32...	441,40	**532**	441,40	**532**
HSK T100 XCLCF 32 R/L 00	HSK-T 100	160	45	88	45	XLCF R/L 32...	517,00	**732**	517,00	**732**

Spare parts for Article no.		2D/81 Nozzle Article no. 70 950 ... EUR		Y7 Key D Article no. 80 950 ... EUR		2A/28 Clamping wedge Article no. 70 950 ... EUR		2A/28 clamping screw Article no. 70 950 ... EUR	
74 584 532 / 74 585 532	SD 10 x 7	18,35	**849**	T25	10,22	**115**	62,07	**860**	M6x12	2,22	**861**
74 584 732 / 74 585 732	SD 10 x 7	18,35	**849**	T25	10,22	**115**	62,07	**860**	M6x12	2,22	**861**

HSK-T square shank adapter 0°

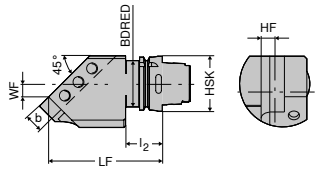




Illustrations show right-hand versions

ISO designation	Adapter	LF	l_2	BDRED	WF	LSC	b	HF	Left-hand 2D/80 Article no. 74 571 ...		Right-hand 2D/80 Article no. 74 570 ...	
		mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
HSK T63 SH R/L 00 2525	HSK-T 63	135	42	53	13	85,5	25	25	309,70	**525**	309,70	**532**
HSK T100 SH R/L 00 3232	HSK-T 100	145	45	88	15	87,5	32	32	407,10	**725**	407,10	**732**

HSK-T square shank adapter 45°

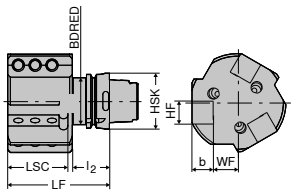




Illustrations show right-hand versions

ISO designation	Adapter	LF	l_2	BDRED	WF	b	HF	Left-hand 2D/80 Article no. 74 573 ...		Right-hand 2D/80 Article no. 74 572 ...	
		mm	mm	mm	mm	mm	mm	EUR		EUR	
HSK T63 SH R/L 45 2525	HSK-T 63	140	42	53	15	25	25	333,00	**525**	333,00	**525**
HSK T100 SH R/L 45 3232	HSK-T 100	160	45	88	20	32	32	426,90	**732**	426,90	**732**

HSK-T square shank adapter 3-face 0°

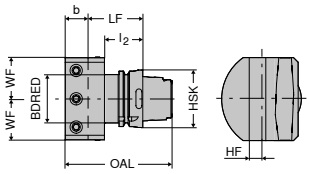




ISO designation	Adapter	LF	l_2	BDRED	WF	LSC	b	HF	Left-hand 2D/80 Article no. 74 576 ...	
		mm	mm	mm	mm	mm	mm	mm	EUR	
HSK T63 SH3 L 00 2525	HSK-T 63	115	42	53	28	68	25	25	540,00	**525**
HSK T100 SH3 L 00 2525	HSK-T 100	120	45	88	33	70	25	25	765,50	**725**

Spare parts		2D/81  Nozzle Article no. 70 950 ...		2D/81  Grubscrew Article no. 70 950 ...	
Adapter		EUR		EUR	
HSK-T 100	SD 12 x 8	18,35	**850**	M12x1,75x25	1,59 **851**
HSK-T 63	SD 12 x 8	18,35	**850**	M12x1,75x25	1,59 **851**

HSK-T square shank adapter 90°





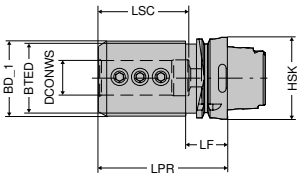
ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	OAL mm	HF mm	b mm	Neutral 2D/80 Article no. 74 575 ... EUR	
HSK T63 SH N 90 2525	HSK-T 63	60	42	53	45	85	25	25	316,30	**525**
HSK T100 SH N 90 3232	HSK-T 100	58	45	88	50	90	32	32	426,90	**732**


Nozzle


Grubscrew

Spare parts for Article no.		2D/81 Article no. 70 950 ... EUR			2D/81 Article no. 70 950 ... EUR	
74 575 525	SD 10 x 7	18,35	**849**	M12x1,75x25	1,59	**851**
74 575 732	SD 12 x 8	18,35	**850**	M12x1,75x25	1,59	**851**

HSK-T Boring bar holder





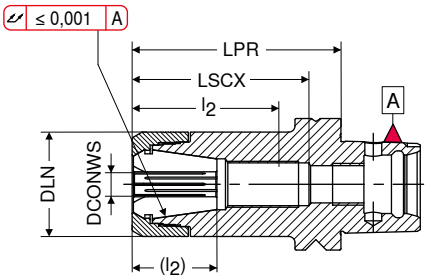
ISO designation	Adapter	LPR mm	DCONWS mm	BD_1 mm	LSC mm	LF mm	BTED mm	2D/80 Article no. 74 577 ... EUR	
HSK T63 BH08 80	HSK-T 63	80	8	32	41			230,10	**508**
HSK T63 BH10 80	HSK-T 63	80	10	40	41			230,10	**510**
HSK T63 BH12 80	HSK-T 63	80	12	40	41			230,10	**512**
HSK T63 BH16 80	HSK-T 63	80	16	40	51			230,10	**516**
HSK T63 BH20 80	HSK-T 63	80	20	50	51			230,10	**520**
HSK T63 BH25 90	HSK-T 63	90	25	53	61			230,10	**525**
HSK T63 BH32 95	HSK-T 63	95	32	68	61	42	53	230,10	**532**
HSK T100 BH20 90	HSK-T 100	90	20	55	56			293,20	**720**
HSK T100 BH25 95	HSK-T 100	95	25	55	61			293,20	**725**
HSK T100 BH32 110	HSK-T 100	110	32	68	61			293,20	**732**
HSK T100 BH40 120	HSK-T 100	120	40	83	81			293,20	**740**
HSK T100 BH50 125	HSK-T 100	125	50	98	91	45	88	293,20	**750**

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P





AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	l_2 (l_2)	for collet	Y8 Article no. 84 112 ...	
	mm	mm	mm	mm	mm		EUR	
PSC 40	1 - 10	55	30	47	29 - 38	426E (ER16)	239,30	402
PSC 40	1 - 13	55	32	44		428E (ER20)	239,30	406
PSC 50	1 - 10	60	30	47	29 - 38	426E (ER16)	248,40	501
PSC 50	1 - 10	100	30	87	29 - 51 (29 - 37)	426E (ER16)	261,50	502
PSC 50	1 - 16	60	40	48		430E (ER25)	248,40	505
PSC 50	2 - 20	60	50	49		470E (ER32)	248,40	507
PSC 63	1 - 10	60	30	44		426E (ER16)	248,30	601
PSC 63	1 - 10	100	30	83	29 - 53 (25 - 39)	426E (ER16)	262,40	602
PSC 63	1 - 13	60	32	44		428E (ER20)	248,30	603
PSC 63	1 - 13	100	32	84	33 - 59	428E (ER20)	262,40	604
PSC 63	1 - 16	60	40	38		430E (ER25)	248,30	605
PSC 63	1 - 16	100	40	78	36 - 62 (30 - 45)	430E (ER25)	262,40	606
PSC 63	1 - 16	130	40	99	34 - 70 (30 - 50)	430E (ER25)	280,50	607
PSC 63	1 - 16	160	40	118	34 - 70 (30 - 50)	430E (ER25)	315,70	608
PSC 63	2 - 20	60	50	42		470E (ER32)	248,30	609
PSC 63	2 - 20	100	50	79	45 - 63 (25 - 45)	470E (ER32)	262,40	610
PSC 63	2 - 20	130	50	99	45 - 63 (25 - 53)	470E (ER32)	280,50	611
PSC 63	3 - 26	65	63	51		472E (ER40)	263,40	612
PSC 63	3 - 26	100	63	86	46 - 50	472E (ER40)	331,70	613
PSC 80	2 - 20	100	50	86	41 - 63 (27 - 45)	470E (ER32)	357,10	804
PSC 80	3 - 26	100	63	86	47 - 55	472E (ER40)	365,30	808

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer


Lock nut IK


Lock nut


Stop screw 2


Stop screw 1

Spare parts for collet	Y8 Article no. 84 950 ... EUR		Y8 Article no. 84 950 ... EUR			Y8 Article no. 83 950 ... EUR			Y8 Article no. 83 950 ... EUR	
426E (ER16)	35,19	011	28,15	001	M11x1 - SW6	14,08	341	M11x1 - SW6	9,93	337
428E (ER20)	38,22	012	31,16	002				M14x1 - SW6	10,35	369
430E (ER25)	38,22	013	31,16	003	M18x1,5 - SW6	15,90	432	M18x1,5 - SW6	11,42	431
470E (ER32)	40,23	015	33,15	005	M22x1,5 - SW6	15,90	402	M22x1,5 - SW6	11,42	401
472E (ER40)	54,30	017	45,25	007				M28x1,5 - SW6	10,35	400

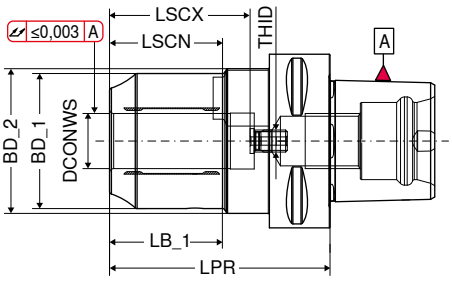
16

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	LB_1	BD_1	BD_2	LSCX	LSCN	THID	Article no. 84 108 ...
	mm	mm	mm	mm	mm	mm	mm		EUR
PSC 63	20	80	41	49	52,5	51	41	M8x1	394,90 **62000**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7



Cylindrical screw

Y7



Clamping key – T

Y7



Pressure screw

Y7



Stop screw IK

Spare parts for Article no.		Article no. 83 950 ... EUR			Article no. 80 397 ... EUR			Article no. 83 950 ... EUR			Article no. 83 950 ... EUR	
84 108 62000	M5x5 - SW2,5	1,85	**157**	SW5	4,24	**050**	M10x1x14	4,28	**429**	M16x1x13,5 - SW8	9,34	**424**

Accessories



Reduction sleeve
→ 17|32



Coolant transfer pipe
→ 173

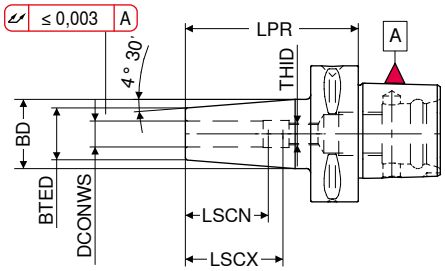


Others
→ 17|34

Shrink adapters

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder **without** IK back stop screw





	Adapter	LPR	DCONWS	BTED	BD	LSCX	LSCN	THID	AD G 6,3 n_{max} 15000 Y8 Article no. 84 104 ... EUR		AD G 6,3 n_{max} 15000 Y8 Article no. 84 105 ... EUR		AD G 6,3 n_{max} 15000 Y8 Article no. 84 106 ... EUR	
		mm	mm	mm	mm	mm	mm							
short	PSC 32	65	6	21	27	36	26	M5	163,60	306				
	PSC 32	65	8	21	27	36	26	M6	163,60	308				
	PSC 32	70	10	24	32	41	31	M8x1	163,60	310				
	PSC 32	75	12	24	32	47	37	M10x1	163,60	312				
	PSC 40	75	6	21	27	36	26	M5	166,70	406				
	PSC 40	75	8	21	27	36	26	M6	166,70	408				
	PSC 40	75	10	24	32	41	31	M8x1	166,70	410				
	PSC 40	75	12	24	32	47	37	M10x1	166,70	412				
	PSC 40	80	14	27	34	47	37	M10x1	166,70	414				
	PSC 40	80	16	27	34	50	40	M12x1	166,70	416				
	PSC 40	80	18	33	42	50	40	M12x1	166,70	418				
	PSC 40	85	20	33	42	52	42	M16x1	166,70	420				
	PSC 50	65	3	12	17				207,70	503				
	PSC 50	65	4	12	17				207,70	504				
	PSC 50	65	5	12	17				207,70	505				
	PSC 50	75	6	21	30	36	26	M5	173,00	506				
	PSC 50	75	8	21	30	36	26	M6	173,00	508				
	PSC 50	75	10	24	33	41	31	M8x1	173,00	510				
	PSC 50	75	12	24	33	47	37	M10x1	173,00	512				
	PSC 50	80	14	27	34	47	37	M10x1	173,00	514				
	PSC 50	80	16	27	34	50	40	M12x1	173,00	516				
	PSC 50	80	18	33	42	50	40	M12x1	173,00	518				
	PSC 50	85	20	33	42	52	42	M16x1	173,00	520				
	PSC 50	90	25	44	53	58	48	M16x1	173,00	525				
long	PSC 50	120	6	21	32	36	26	M5			207,70	506		
	PSC 50	120	8	21	32	36	26	M6			207,70	508		
	PSC 50	120	10	24	34	41	31	M8x1			207,70	510		
	PSC 50	120	12	24	34	47	37	M10x1			207,70	512		
	PSC 50	120	14	27	36	47	37	M10x1			207,70	514		
	PSC 50	120	16	27	36	50	40	M12x1			207,70	516		
	PSC 50	120	18	33	42	50	40	M12x1			207,70	518		
	PSC 50	120	20	33	42	52	42	M16x1			207,70	520		
	PSC 50	120	25	44	53	58	48	M16x1			207,70	525		
short	PSC 63	80	3	12	17				254,80	603				
	PSC 63	80	4	12	17				254,80	604				
	PSC 63	80	5	12	17				254,80	605				
	PSC 63	80	6	21	27	36	26	M5	215,00	606				
	PSC 63	80	8	21	27	36	26	M6	215,00	608				
	PSC 63	80	10	24	32	41	31	M8x1	215,00	610				
	PSC 63	80	12	24	32	47	37	M10x1	215,00	612				
	PSC 63	85	14	27	34	47	37	M10x1	215,00	614				
	PSC 63	85	16	27	34	50	40	M12x1	215,00	616				
	PSC 63	85	18	33	42	50	40	M12x1	215,00	618				
	PSC 63	85	20	33	42	52	42	M16x1	215,00	620				
	PSC 63	90	25	44	53	58	48	M16x1	215,00	625				
	PSC 63	95	32	44	53	61	51	M16x1	215,00	632				
long	PSC 63	120	6	21	32	36	26	M5			254,80	606		
	PSC 63	120	8	21	32	36	26	M6			254,80	608		
	PSC 63	120	10	24	32	41	31	M8x1			254,80	610		
	PSC 63	120	12	24	32	47	37	M10x1			254,80	612		
	PSC 63	120	14	27	36	47	37	M10x1			254,80	614		
	PSC 63	120	16	27	36	50	40	M12x1			254,80	616		
	PSC 63	120	18	33	44	50	40	M12x1			254,80	618		
	PSC 63	120	20	33	44	52	42	M16x1			254,80	620		
	PSC 63	120	25	44	53	58	48	M16x1			254,80	625		
	PSC 63	120	32	44	53	61	51	M16x1			254,80	632		

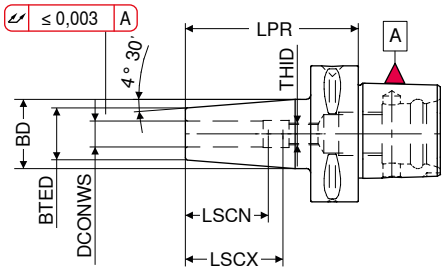
→ Min. clamping depth, Page 233

Continued on next page

Shrink adapters

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder **without** IK back stop screw






AD
G 6,3 n_{max} 15000
Y8


AD
G 6,3 n_{max} 15000
Y8


AD
G 6,3 n_{max} 15000
Y8

	Adapter	LPR	DCONWS	BTED	BD	LSCX	LSCN	THID	Article no. 84 104 ... EUR		Article no. 84 105 ... EUR		Article no. 84 106 ... EUR	
		mm	mm	mm	mm	mm	mm							
extra-long	PSC 63	160	6	21	32	36	26	M5					279,00	606
	PSC 63	160	8	21	32	36	26	M6					279,00	608
	PSC 63	160	10	24	34	41	31	M8x1					279,00	610
	PSC 63	160	12	24	34	47	37	M10x1					279,00	612
	PSC 63	160	14	27	36	47	37	M10x1					279,00	614
	PSC 63	160	16	27	36	50	40	M12x1					279,00	616
	PSC 63	160	18	33	44	50	40	M12x1					279,00	618
	PSC 63	160	20	33	44	52	42	M16x1					279,00	620
	PSC 63	160	25	44	53	58	48	M16x1					279,00	625
	PSC 63	160	32	44	53	61	51	M16x1					279,00	632
short	PSC 80	85	6	21	27	36	26	M5	230,70	806				
	PSC 80	85	8	21	27	36	26	M6	230,70	808				
	PSC 80	85	10	24	32	41	31	M8x1	230,70	810				
	PSC 80	85	12	24	32	47	37	M10x1	230,70	812				
	PSC 80	90	14	27	34	47	37	M10x1	230,70	814				
	PSC 80	90	16	27	34	50	40	M12x1	230,70	816				
	PSC 80	90	18	33	42	50	40	M12x1	230,70	818				
	PSC 80	90	20	33	42	52	42	M16x1	230,70	820				
	PSC 80	95	25	44	53	58	48	M16x1	230,70	825				
	PSC 80	100	32	44	53	61	51	M16x1	230,70	832				
long	PSC 80	120	6	21	32	36	26	M5			275,80	806		
	PSC 80	120	8	21	32	36	26	M6			275,80	808		
	PSC 80	120	10	24	34	41	31	M8x1			275,80	810		
	PSC 80	120	12	24	34	47	37	M10x1			275,80	812		
	PSC 80	120	14	27	36	47	37	M10x1			275,80	814		
	PSC 80	120	16	27	36	50	40	M12x1			275,80	816		
	PSC 80	120	18	33	44	50	40	M12x1			275,80	818		
	PSC 80	120	20	33	44	52	42	M16x1			275,80	820		
	PSC 80	120	25	44	53	58	48	M16x1			275,80	825		
	PSC 80	120	32	44	53	61	51	M16x1			275,80	832		

→ Min. clamping depth, Page 233

Y8

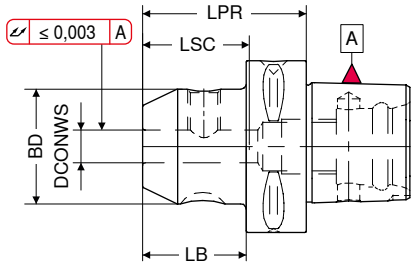

Backstop screw IK

Spare parts
DCONWS

DCONWS	Article no. 84 950 ... EUR	
6	8,29	140
8	8,29	141
10	8,29	142
12 - 14	8,29	143
16 - 18	8,29	144
20 - 32	8,29	145

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat





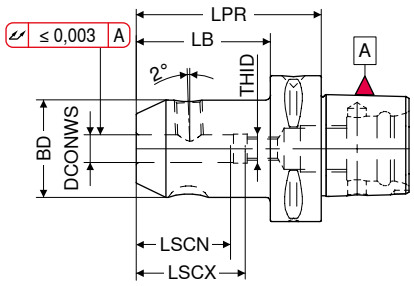


AD
G 6,3 n_{max} 15000
Y8

Adapter	DCONWS	LPR	BD	LB	LSC	Article no. 84 100 ...	
	mm	mm	mm	mm	mm	EUR	
PSC 32	6	45	25	30	35	135,30	**306**
PSC 32	8	45	28	30	35	135,30	**308**
PSC 32	10	50	35	35	39	135,30	**310**
PSC 32	12	55	42	40	44	135,30	**312**
PSC 40	6	50	25	30	35	147,90	**406**
PSC 40	8	50	28	30	35	147,90	**408**
PSC 40	10	50	35	30	39	147,90	**410**
PSC 40	12	55	42	35	44	147,90	**412**
PSC 40	14	55	44	35	44	147,90	**414**
PSC 40	16	55	48	35	47	147,90	**416**
PSC 50	6	50	25	30	35	151,00	**506**
PSC 50	8	50	28	30	35	151,00	**508**
PSC 50	10	55	35	35	39	151,00	**510**
PSC 50	12	60	42	40	44	151,00	**512**
PSC 50	14	60	44	40	44	151,00	**514**
PSC 50	16	60	48	40	47	151,00	**516**
PSC 50	18	60	50	40	47	151,00	**518**
PSC 50	20	60	52	40	47	151,00	**520**
PSC 50	25	80	65	60	54	151,00	**525**
PSC 63	6	55	25	33	35	166,70	**606**
PSC 63	8	55	28	33	35	166,70	**608**
PSC 63	10	60	35	38	39	166,70	**610**
PSC 63	12	60	42	38	44	166,70	**612**
PSC 63	14	60	44	38	44	166,70	**614**
PSC 63	16	65	48	43	47	166,70	**616**
PSC 63	18	65	50	43	47	166,70	**618**
PSC 63	20	65	52	43	49	166,70	**620**
PSC 63	25	80	65	58	54	166,70	**625**
PSC 63	32	90	72	68	58	166,70	**632**
PSC 63	40	100	80	78	75	166,70	**640**
PSC 80	6	70	25	40	35	183,50	**806**
PSC 80	8	70	28	40	35	183,50	**808**
PSC 80	10	70	35	40	39	183,50	**810**
PSC 80	12	70	42	40	44	183,50	**812**
PSC 80	14	70	44	40	44	183,50	**814**
PSC 80	16	70	48	50	47	183,50	**816**
PSC 80	18	70	50	40	47	183,50	**818**
PSC 80	20	70	52	40	49	183,50	**820**
PSC 80	25	80	65	50	54	183,50	**825**
PSC 80	32	80	72	50	58	183,50	**832**
PSC 80	40	110	80	80	75	183,50	**840**
PSC 80	50	120	100	90	83	183,50	**850**

Cylindrical Shank Adapter (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat







AD
G 6,3 n_{max} 15000

Y8

Adapter	DCONWS	LPR	BD	LB	LSCX	LSCN	THID	Article no. 84 102 ...	
	mm	mm	mm	mm	mm	mm		EUR	
PSC 32	6	70	25	55	38	28	M5	135,30	**306**
PSC 32	8	70	28	55	38	28	M6	135,30	**308**
PSC 32	10	70	35	55	41	31	M8	135,30	**310**
PSC 32	12	75	42	60	47	37	M10	135,30	**312**
PSC 40	6	70	25	50	38	28	M5	147,90	**406**
PSC 40	8	70	28	50	38	28	M6	147,90	**408**
PSC 40	10	70	35	50	41	31	M8	147,90	**410**
PSC 40	12	75	42	55	47	37	M10	147,90	**412**
PSC 40	14	75	44	55	47	37	M10	147,90	**414**
PSC 50	6	70	25	50	38	28	M5	151,00	**506**
PSC 50	8	70	28	50	38	28	M6	151,00	**508**
PSC 50	10	70	35	50	41	31	M8	151,00	**510**
PSC 50	12	75	42	55	47	37	M10	151,00	**512**
PSC 50	14	75	44	55	47	37	M10	151,00	**514**
PSC 50	16	80	48	60	50	40	M12	151,00	**516**
PSC 50	18	80	50	60	50	40	M12	151,00	**518**
PSC 50	20	85	52	65	52	42	M16	151,00	**520**
PSC 63	6	75	25	53	38	28	M5	166,70	**606**
PSC 63	8	75	28	53	38	28	M6	166,70	**608**
PSC 63	10	75	35	53	41	31	M8	166,70	**610**
PSC 63	12	80	42	58	47	37	M10	166,70	**612**
PSC 63	14	80	44	58	47	37	M10	166,70	**614**
PSC 63	16	80	48	58	50	40	M12	166,70	**616**
PSC 63	18	80	50	58	50	40	M12	166,70	**618**
PSC 63	20	85	52	63	52	42	M16	166,70	**620**
PSC 63	25	90	65	68	58	48	M16	166,70	**625**
PSC 63	32	95	72	73	61	51	M16	166,70	**632**
PSC 80	6	65	25	35	38	28	M5	183,50	**806**
PSC 80	8	65	28	35	38	28	M6	183,50	**808**
PSC 80	10	65	35	35	41	31	M8	183,50	**810**
PSC 80	12	70	42	40	47	37	M10	183,50	**812**
PSC 80	14	70	44	40	47	37	M10	183,50	**814**
PSC 80	16	75	48	45	50	40	M12	183,50	**816**
PSC 80	18	75	50	45	50	40	M12	183,50	**818**
PSC 80	20	80	52	50	52	42	M16	183,50	**820**
PSC 80	25	90	65	60	58	48	M16	183,50	**825**
PSC 80	32	95	72	65	61	51	M16	183,50	**832**

Y8

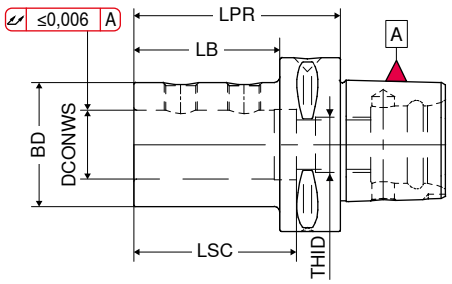


Backstop screw IK

Spare parts DCONWS		Article no. 84 950 ...	
		EUR	
6	M5	8,29	**146**
8	M6	8,29	**147**
10	M8	8,29	**148**
12 - 14	M10	8,29	**149**
16 - 18	M12	8,29	**150**
20 - 32	M16	8,29	**151**

Indexable insert drill adapter ISO 26623-1 PSC

▲ Run out ≤ 0.005 mm





AD

Adapter	DCONWS	LPR	BD	LB	LSC	THID	Y8 Article no. 84 128 ... EUR	
	mm	mm	mm	mm	mm			
PSC 32	16	60	36	45	49	M10x1	223,40	**316**
PSC 32	20	60	40	45	54	M10x1	223,40	**320**
PSC 40	16	60	36	40	49	M10x1	230,70	**416**
PSC 40	20	60	40	40	54	M10x1	230,70	**420**
PSC 40	25	80	45	50	59	M12x1	230,70	**425**
PSC 50	16	65	36	45	49	M10x1	247,50	**516**
PSC 50	20	65	40	45	54	M10x1	247,50	**520**
PSC 50	25	70	45	50	59	M12x1	247,50	**525**
PSC 50	32	75	52	55	63	M12x1	247,50	**532**
PSC 63	16	70	36	48	49	M10x1	247,50	**616**
PSC 63	20	70	40	48	54	M10x1	247,50	**620**
PSC 63	25	75	45	53	59	M12x1	247,50	**625**
PSC 63	32	75	52	53	63	M12x1	247,50	**632**
PSC 63	40	85	65	63	73	M16x1	247,50	**640**
PSC 63	50	115	75	93	83	M16x1	247,50	**650**
PSC 80	16	80	36	50	49	M10x1	295,70	**816**
PSC 80	20	80	40	50	54	M10x1	295,70	**820**
PSC 80	25	85	45	55	59	M12x1	295,70	**825**
PSC 80	32	90	52	60	63	M12x1	295,70	**832**
PSC 80	40	95	65	65	73	M16x1	295,70	**840**
PSC 80	50	100	75	70	83	M16x1	295,70	**850**

Y8



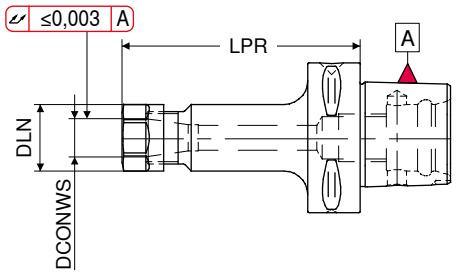
Grubscrew

Spare parts DCONWS		Article no. 83 950 ... EUR	
16 - 20	M10x1x10	4,90	**180**
25 - 32	M10x1x12	4,90	**181**
40 - 50	M16x1x13	6,02	**182**

16

ER Collet chuck

▲ Without an internal thread







AD
G 6,3 n_{max} 15000

Y8

Adapter	DCONWS	LPR	DLN	TQX	for collet	Article no. 84 114 ...	
	mm	mm	mm	Nm		EUR	
PSC 32	1 - 10	45	28	8 - 56	426E (ER16)	119,60	**304**
PSC 40	1 - 10	55	28	8 - 56	426E (ER16)	126,90	**404**
PSC 50	1 - 10	60	28	8 - 56	426E (ER16)	135,30	**504**
PSC 50	1 - 10	100	28	8 - 56	426E (ER16)	159,40	**506**
PSC 63	1 - 10	60	28	8 - 56	426E (ER16)	135,30	**604**
PSC 63	1 - 10	100	28	8 - 56	426E (ER16)	159,40	**606**
PSC 80	1 - 10	60	28	8 - 56	426E (ER16)	151,00	**804**
PSC 80	1 - 10	100	28	8 - 56	426E (ER16)	175,10	**806**

W7



Lock nut

Spare parts		Article no. 62 950 ...	
for collet		EUR	
426E (ER16)	M22x1,5 - SW25	17,82	**044**

Accessories

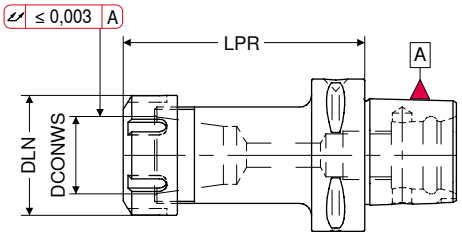


ER collet

→ 211, 213

ER Collet chuck

▲ Without an internal thread







AD
G 6,3 n_{max} 15000

Adapter	DCONWS	LPR	DLN	TQX	for collet	Y8 Article no. 84 115 ...	
	mm	mm	mm	Nm		EUR	
PSC 32	1 - 13	45	34	16 - 80	428E (ER20)	119,60	**306**
PSC 40	1 - 13	55	34	16 - 80	428E (ER20)	126,90	**404**
PSC 40	1 - 16	55	42	24 - 104	430E (ER25)	126,90	**406**
PSC 40	2 - 20	55	50	24 - 136	470E (ER32)	126,90	**408**
PSC 50	1 - 13	60	34	16 - 80	428E (ER20)	135,30	**502**
PSC 50	1 - 13	100	34	16 - 80	428E (ER20)	166,70	**504**
PSC 50	1 - 16	60	42	24 - 104	430E (ER25)	135,30	**506**
PSC 50	1 - 16	100	42	24 - 104	430E (ER25)	166,70	**508**
PSC 50	2 - 20	60	50	24 - 136	470E (ER32)	143,70	**510**
PSC 50	2 - 20	100	50	24 - 136	470E (ER32)	175,10	**512**
PSC 50	3 - 26	65	63	176	472E (ER40)	147,90	**514**
PSC 50	3 - 26	100	63	176	472E (ER40)	180,40	**516**
PSC 63	1 - 13	60	34	16 - 80	428E (ER20)	135,30	**602**
PSC 63	1 - 13	100	34	16 - 80	428E (ER20)	166,70	**604**
PSC 63	1 - 16	60	42	24 - 104	430E (ER25)	135,30	**606**
PSC 63	1 - 16	100	42	24 - 104	430E (ER25)	166,70	**608**
PSC 63	2 - 20	60	50	24 - 136	470E (ER32)	143,70	**610**
PSC 63	2 - 20	100	50	24 - 136	470E (ER32)	175,10	**612**
PSC 63	3 - 26	65	63	176	472E (ER40)	147,90	**614**
PSC 63	3 - 26	100	63	176	472E (ER40)	180,40	**616**
PSC 80	1 - 13	65	34	16 - 80	428E (ER20)	183,50	**802**
PSC 80	1 - 13	100	34	16 - 80	428E (ER20)	239,00	**804**
PSC 80	1 - 16	70	42	24 - 104	430E (ER25)	183,50	**806**
PSC 80	1 - 16	100	42	24 - 104	430E (ER25)	239,00	**808**
PSC 80	2 - 20	70	50	24 - 136	470E (ER32)	183,50	**810**
PSC 80	2 - 20	100	50	24 - 136	470E (ER32)	239,00	**812**
PSC 80	3 - 26	80	63	176	472E (ER40)	183,50	**814**
PSC 80	3 - 26	100	63	176	472E (ER40)	239,00	**816**

Spare parts

for collet	W7 Lock nut Article no. 62 950 ...			Y8 Lock nut IK Article no. 83 950 ...			W7 Lock nut Article no. 62 950 ...		
		EUR			EUR			EUR	
428E (ER20)	M25x1,5 - SW30	18,87	**045**						
430E (ER25)				M32x1,5	34,72	**055**	M32x1,5	19,92	**055**
470E (ER32)				M40x1,5	36,95	**056**	M40x1,5	18,56	**056**
472E (ER40)				M50x1,5	43,57	**057**	M50x1,5	18,04	**057**

Accessories



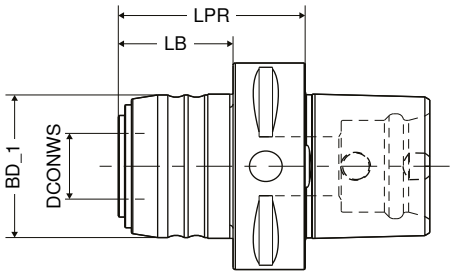
ER collet

→ 211, 213

16

Synchronised quick change tap chuck with minimal length compensation

- Length compensation under tension and compression (LZD)
- For collet types DIN 6499
- $p_{max.}$ = 50 bar



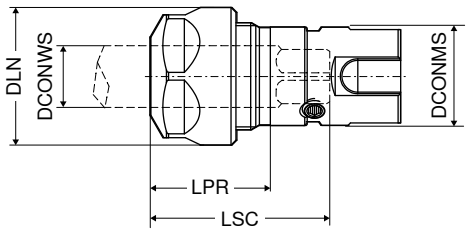


AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LB	LZD±	Y8 Article no. 84 140 ...	
			mm	mm	mm	mm	mm	EUR	
PSC 63	M3 - M12	1	57	43	20	35	1,0 / 0,2	542,10	**612**
PSC 63	M6 - M20	2	77	60	32	55	1,0 / 0,2	608,10	**620**

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut





AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	EUR	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	110,10	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	127,90	**020**

Spare parts		W7 Lock nut Article no. 62 950 ...		Y8 Lock nut IK Article no. 83 950 ...		W7 Lock nut Article no. 62 950 ...		Y8 Y clamping key Article no. 83 357 ...	
for Article no.		EUR		EUR		EUR		EUR	
83 608 012	M22x1,5 - SW25	17,82	**044**	M22x1,5	30,62	**054**			16,04	**116**
83 608 020				M32x1,5	34,72	**055**	M32x1,5	19,92	**055**	17,72	**125**

Accessories

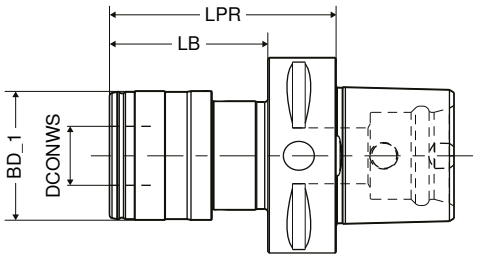


ER collet

→ 212, 214–215

Quick change tap chuck with length compensation

▲ Length compensation under tension and compression (LZD)





A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LB	LZD±	Y8 Article no. 84 142 ...	
			mm	mm	mm	mm	mm	EUR	
PSC 63	M3 - M12	01	73	41	19	51	7,5	562,00	**612**
PSC 63	M6 - M20	02	97	60	31	75	10	631,20	**620**

Accessories

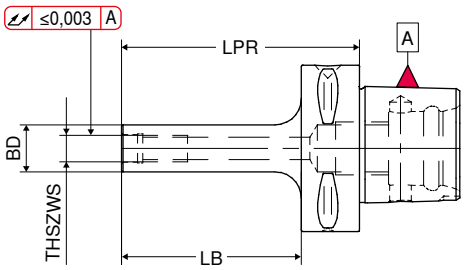


Collet

→ 219–223

16

Adapter for screw-in milling cutter







AD
G 2,5 n_{max} 20000
Y8

Adapter	THSZWS	LPR	BD	LB	Article no. 84 110 ...	
		mm	mm	mm	EUR	
PSC 32	M8	60	13	45	183,50	**302**
PSC 32	M10	70	18	55	183,50	**306**
PSC 40	M8	70	13	50	187,70	**402**
PSC 40	M10	80	18	60	187,70	**405**
PSC 40	M12	80	21	60	187,70	**408**
PSC 50	M8	70	13	50	190,90	**502**
PSC 50	M10	80	18	60	190,90	**505**
PSC 50	M12	80	21	60	190,90	**508**
PSC 50	M16	80	29	60	190,90	**512**
PSC 63	M8	70	13	48	207,70	**602**
PSC 63	M10	90	18	68	207,70	**605**
PSC 63	M12	100	21	78	207,70	**608**
PSC 63	M16	100	29	78	207,70	**612**

Accessories



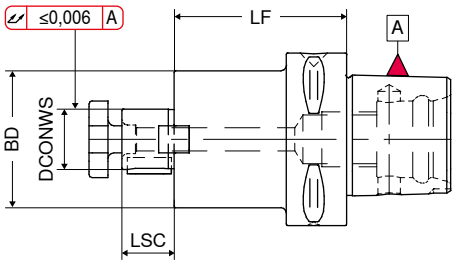
Coolant transfer pipe

→ 173

Shell mill adapters

▲ For cutters with longitudinal or transverse groove

Scope of supply:
Holder with clamping screw and drive key





G 6,3 n_{max} 15000

Adapter	DCONWS	LF	BD	LSC	Y8 Article no. 84 122 ...	
	mm	mm	mm	mm	EUR	
PSC 40	16	28	40	17	143,70	**401**
PSC 40	16	63	40	17	151,00	**402**
PSC 40	22	40	50	19	143,70	**411**
PSC 40	22	63	50	19	151,00	**412**
PSC 50	16	28	40	17	143,70	**501**
PSC 50	16	63	40	17	151,00	**502**
PSC 50	22	28	50	19	143,70	**511**
PSC 50	22	63	50	19	151,00	**512**
PSC 50	27	32	50	21	143,70	**521**
PSC 50	27	63	50	21	151,00	**522**
PSC 50	32	40	63	24	143,70	**531**
PSC 50	32	63	63	24	151,00	**532**
PSC 63	16	63	40	17	159,40	**602**
PSC 63	22	28	63	19	151,00	**611**
PSC 63	22	63	50	19	159,40	**612**
PSC 63	27	28	58	21	151,00	**621**
PSC 63	27	63	58	21	159,40	**622**
PSC 63	32	22	63	24	151,00	**631**
PSC 63	32	86	63	24	159,40	**632**
PSC 63	40	40	70	27	175,10	**641**
PSC 80	16	63	40	17	187,70	**802**
PSC 80	22	30	50	19	181,40	**811**
PSC 80	22	63	50	19	187,70	**812**
PSC 80	27	30	58	21	181,40	**821**
PSC 80	27	63	58	21	187,70	**822**
PSC 80	32	30	63	24	181,40	**831**
PSC 80	32	86	63	24	187,70	**832**
PSC 80	40	40	70	27	181,40	**841**


Drive key


Drive dog


Cross nut key


Retaining screw


Clamping screw

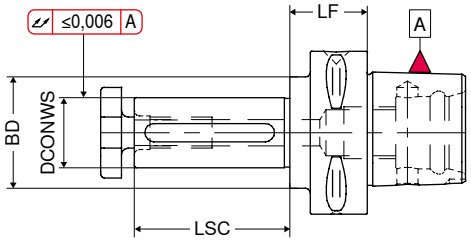
Spare parts DCONWS	Y8 Drive key Article no. 84 950 ... EUR		Y8 Drive dog Article no. 84 950 ... EUR		Y8 Cross nut key Article no. 83 368 ... EUR			Y8 Retaining screw Article no. 83 367 ... EUR			Y8 Clamping screw Article no. 83 950 ... EUR	
16	3,13	**108**	7,09	**113**	10,69	**116**	M8	3,23	**016**	M8x25	2,88	**113**
22	3,13	**109**	8,29	**114**	13,32	**122**	M10	3,54	**022**	M10x25	3,33	**124**
27	3,13	**110**	8,99	**115**	17,09	**127**	M12	4,53	**027**	M12x30	3,67	**125**
32	3,13	**111**	10,19	**116**	22,02	**132**	M16	7,28	**032**	M16x35	4,56	**126**
40	3,13	**112**	11,43	**117**	30,73	**140**	M20	11,54	**040**	M20x40	6,48	**112**

16

Milling arbor

- For cutters with long drive slot
- Runout ≤ 0.005 mm

Scope of supply:
Holder with clamping screw and drive key

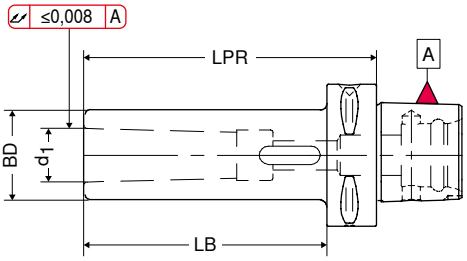




Adapter	DCONWS	LF	BD	LSC	Y8 Article no. 84 124 ... EUR	
	mm	mm	mm	mm		
PSC 32	16	20	28	30	143,70	**316**
PSC 40	16	25	28	30	151,00	**416**
PSC 40	22	25	36	40	151,00	**422**
PSC 40	27	25	40	60	151,00	**427**
PSC 50	16	25	28	30	151,00	**516**
PSC 50	22	25	36	40	151,00	**522**
PSC 50	27	25	43	60	151,00	**527**
PSC 50	32	25	50	60	151,00	**532**
PSC 63	16	30	28	30	151,00	**616**
PSC 63	22	30	36	40	151,00	**622**
PSC 63	27	30	43	60	151,00	**627**
PSC 63	32	25	48	60	151,00	**632**
PSC 63	40	25	56	60	151,00	**640**
PSC 80	16	40	28	30	175,10	**816**
PSC 80	22	40	36	40	175,10	**822**
PSC 80	27	30	43	60	175,10	**827**
PSC 80	32	30	48	60	175,10	**832**
PSC 80	40	30	56	60	175,10	**840**
PSC 80	50	30	70	60	175,10	**850**
PSC 80	60	30	60	60	175,10	**860**

Spare parts DCONWS	Y8  Drive key Article no. 84 950 ... EUR		Y8  Cross nut key Article no. 83 368 ... EUR			Y8  Retaining screw Article no. 83 367 ... EUR	
16	3,13	**101**	10,69	**116**	M8	3,23	**016**
22	3,13	**102**	13,32	**122**	M10	3,54	**022**
27	3,13	**103**	17,09	**127**	M12	4,53	**027**
32	3,13	**104**	22,02	**132**	M16	7,28	**032**
40	3,13	**105**	30,73	**140**	M20	11,54	**040**
50	3,13	**106**	41,84	**150**	M24	25,58	**050**
60	3,13	**107**					

Taper sleeve DIN6383 for DIN 228-2D Morse taper shanks

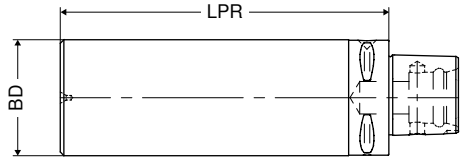




Adapter	d_1	LPR	BD	LB	Y8 Article no. 84 126 ...	
		mm	mm	mm	EUR	
PSC 40	MK2	110	32	90	151,00	**402**
PSC 40	MK3	130	40	119	159,40	**403**
PSC 50	MK2	110	32	90	159,40	**502**
PSC 50	MK3	130	40	110	166,70	**503**
PSC 50	MK4	150	48	132	175,10	**504**
PSC 63	MK2	110	32	88	159,40	**602**
PSC 63	MK3	130	40	108	166,70	**603**
PSC 63	MK4	150	48	128	175,10	**604**
PSC 80	MK2	120	32	90	183,50	**802**
PSC 80	MK3	140	40	110	199,20	**803**
PSC 80	MK4	160	48	130	215,00	**804**

Blank

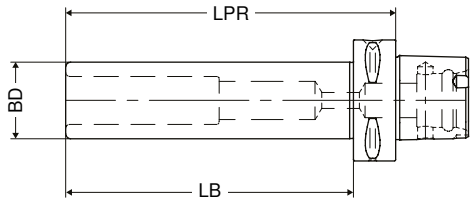
- Material: 25CrMoV4
- For production of special tools
- Taper hardened and ground
- Special tool area in soft state





Adapter	LPR	BD	Y8 Article no. 84 134 ...
	mm	mm	EUR
PSC 40	95	40	111,10 **402**
PSC 40	120	40	119,60 **403**
PSC 40	165	60	126,90 **404**
PSC 40	75	80	143,70 **405**
PSC 40	120	80	151,00 **406**
PSC 40	85	100	159,40 **408**
PSC 50	125	50	126,90 **502**
PSC 50	150	50	135,30 **503**
PSC 50	175	75	151,00 **504**
PSC 50	80	90	159,40 **506**
PSC 50	150	95	166,70 **508**
PSC 50	90	110	159,40 **510**
PSC 63	180	63	151,00 **602**
PSC 63	195	75	159,40 **604**
PSC 63	85	110	159,40 **606**
PSC 63	180	120	239,00 **608**
PSC 63	95	130	183,50 **610**
PSC 80	200	80	183,50 **802**
PSC 80	160	120	183,50 **804**
PSC 80	90	130	175,10 **806**
PSC 80	200	145	199,20 **808**

Test bar





Adapter	LPR	BD	LB	Y8 Article no. 84 136 ...	
	mm	mm	mm	EUR	
PSC 32	175	25	160	539,00	**030**
PSC 40	180	25	160	597,60	**040**
PSC 50	235	32	215	638,60	**050**
PSC 63	322	40	300	672,10	**060**
PSC 80	330	40	300	806,30	**080**

Coolant pipe

Scope of supply:
Complete, including seals



Size	G	Y8 Article no. 84 116 ... EUR	
PSC 40	M14 x 1,5	30,24	**04000**
PSC 50	M16 x 1,5	31,81	**05000**
PSC 63	M20 x 1,5	33,37	**06300**
PSC 80	M20 x 1,5	41,56	**08000**

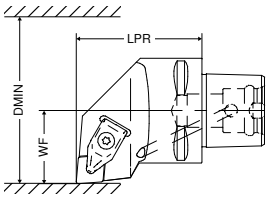
Key



Size	Y8 Article no. 84 117 ... EUR	
PSC 40	27,17	**04000**
PSC 50	29,10	**05000**
PSC 63	31,09	**06300**
PSC 80	42,03	**08000**

16

Toolholder DCLN 95°/80°



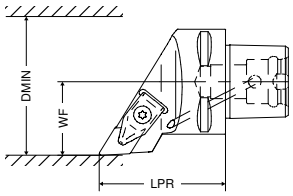


Illustrations show right-hand versions

ISO designation	Adapter	WF mm	LPR mm	DMIN mm	Insert	Left-hand Y8 Article no. 84 151 ... EUR		Right-hand Y8 Article no. 84 150 ... EUR	
PSC40 DCLN R/L 27050-12	PSC 40	27	50	75	CN.. 1204	166,70	**400**	166,70	**400**
PSC50 DCLN R/L 35060-12	PSC 50	35	60	95	CN.. 1204	185,60	**500**	185,60	**500**
PSC63 DCLN R/L 45065-12	PSC 63	45	65	110	CN.. 1204	215,00	**600**	215,00	**600**

Spare parts / Adapter	Y8 Clamping claw Article no. 84 950 ... EUR		Y8 Clamping screw Article no. 84 950 ... EUR		Y8 Carbide seat Article no. 84 950 ... EUR		Y8 Threaded bush Article no. 84 950 ... EUR	
PSC 40	55,05	**118**	12,69	**132**	14,26	**136**	6,86	**121**
PSC 50	55,05	**118**	12,69	**132**	14,26	**136**	6,86	**121**
PSC 63	55,05	**118**	12,69	**132**	14,26	**136**	6,86	**121**

Toolholder – DDJN 93°/55°



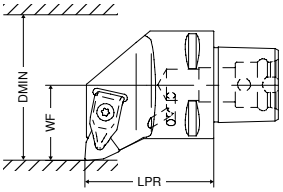


Illustrations show right-hand versions

ISO designation	Adapter	WF mm	LPR mm	DMIN mm	Insert	Left-hand Y8 Article no. 84 153 ... EUR		Right-hand Y8 Article no. 84 152 ... EUR	
PSC40 DDJN R/L 27055-15	PSC 40	27	55	85	DN.. 1506	166,70	**400**	166,70	**400**
PSC50 DDJN R/L 35060-15	PSC 50	35	60	95	DN.. 1506	185,60	**500**	185,60	**500**
PSC63 DDJN R/L 45065-15	PSC 63	45	65	110	DN.. 1506	215,00	**600**	215,00	**600**

Spare parts / Adapter	Y8 Clamping claw Article no. 84 950 ... EUR		Y8 Clamping screw Article no. 84 950 ... EUR		Y8 Carbide seat Article no. 84 950 ... EUR	
PSC 40	55,05	**118**	12,69	**132**	17,51	**137**
PSC 50	55,05	**118**	12,69	**132**	17,51	**137**
PSC 63	55,05	**118**	12,69	**132**	17,51	**137**

Toolholder – DWLN 95°/80°



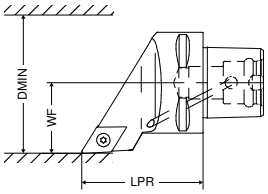


Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	DMIN	Insert	Left-hand Y8 Article no. 84 155 ... EUR		Right-hand Y8 Article no. 84 154 ... EUR	
		mm	mm	mm					
PSC40 DWLN R/L 27050-08	PSC 40	27	50	75	WN.. 0804	166,70	**400**	166,70	**400**
PSC50 DWLN R/L 35060-08	PSC 50	35	60	95	WN.. 0804	185,60	**500**	185,60	**500**
PSC63 DWLN R/L 45065-08	PSC 63	45	65	110	WN.. 0804	215,00	**600**	215,00	**600**

Spare parts Adapter	Y8 Clamping claw Article no. 84 950 ... EUR		Y8 Clamping screw Article no. 84 950 ... EUR		Y8 Carbide seat Article no. 84 950 ... EUR	
PSC 40	55,05	**118**	13,53	**133**	14,26	**138**
PSC 50	55,05	**118**	13,53	**133**	14,26	**138**
PSC 63	55,05	**118**	13,53	**133**	14,26	**138**

Toolholder – SDJC 93°/55°



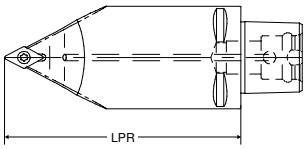


Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	DMIN	Insert	Left-hand Y8 Article no. 84 157 ... EUR		Right-hand Y8 Article no. 84 156 ... EUR	
		mm	mm	mm					
PSC40 SDJC R/L 27050-11	PSC 40	27	50	80	DC.. 11T3	166,70	**400**	166,70	**400**
PSC50 SDJC R/L 35060-11	PSC 50	35	60	95	DC.. 11T3	185,60	**500**	185,60	**500**
PSC63 SDJC R/L 45065-11	PSC 63	45	65	110	DC.. 11T3	215,00	**600**	215,00	**600**

Spare parts Adapter	Y8 Clamping screw Article no. 84 950 ... EUR		Y8 Carbide seat Article no. 84 950 ... EUR	
PSC 40	15,21	**134**	10,49	**139**
PSC 50	15,21	**134**	10,49	**139**
PSC 63	15,21	**134**	10,49	**139**

Toolholder – SDNC 62,5°/55°

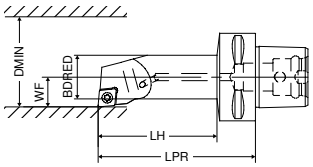


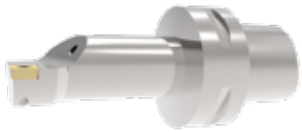


ISO designation	Adapter	LPR mm	Insert	Neutral Y8 Article no. 84 158 ... EUR	
PSC40 SDNC N 00115-11	PSC 40	115	DC.. 11T3	239,00	**400**
PSC50 SDNC N 00115-11	PSC 50	115	DC.. 11T3	250,60	**500**
PSC63 SDNC N 00115-11	PSC 63	115	DC.. 11T3	286,30	**600**

Spare parts	Y8  Clamping screw Article no. 84 950 ...		Y8  Carbide seat Article no. 84 950 ...	
Adapter	EUR		EUR	
PSC 40	15,21	**134**	10,49	**139**
PSC 50	15,21	**134**	10,49	**139**
PSC 63	15,21	**134**	10,49	**139**

Boring bar SCLC 95°/80°





Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	BDRED	LH	DMIN	Insert	Left-hand Y8 Article no. 84 171 ... EUR		Right-hand Y8 Article no. 84 170 ... EUR	
		mm	mm	mm	mm	mm					
PSC40 SCLC R/L 13080-09	PSC 40	13	80	20	57	25	CC.. 09T3	226,50	**400**	226,50	**400**
PSC50 SCLC R/L 17090-09	PSC 50	17	90	25	68	32	CC.. 09T3	250,60	**500**	250,60	**500**

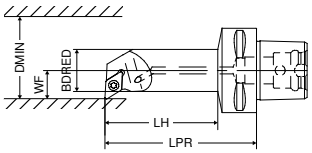
Y8

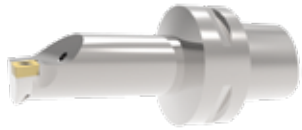


Clamping screw

Spare parts		Article no. 84 950 ... EUR	
Adapter			
PSC 40		7,20	**152**
PSC 50		7,20	**152**

Boring bar SDUC 93°/55°





Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	BDRED	LH	DMIN	Insert	Left-hand Y8 Article no. 84 173 ... EUR		Right-hand Y8 Article no. 84 172 ... EUR	
		mm	mm	mm	mm	mm					
PSC40 SDUC R/L 13080-11	PSC 40	13	80	20	57	25	DC.. 11T3	226,50	**400**	226,50	**400**
PSC50 SDUC R/L 17090-11	PSC 50	17	90	25	67	32	DC.. 11T3	250,60	**500**	250,60	**500**
PSC50 SDUC R/L 22110-11	PSC 50	22	110	32	67	40	DC.. 11T3	250,60	**501**	250,60	**501**

Y8



Clamping screw

Y8

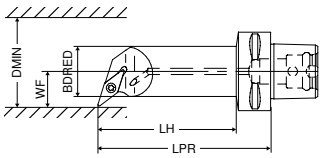


Carbide seat

Spare parts		Article no. 84 950 ... EUR		Article no. 84 950 ... EUR	
Adapter					
PSC 40		15,21	**134**	10,49	**139**
PSC 50		15,21	**134**	10,49	**139**

16

Boring bar SVQC 107,5°/35°





Illustrations show right-hand versions

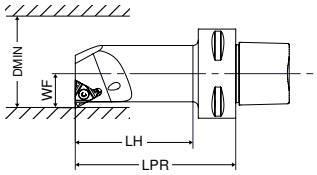
ISO designation	Adapter	WF	LPR	BDRED	LH	DMIN	Insert	Left-hand Y8 Article no. 84 175 ... EUR		Right-hand Y8 Article no. 84 174 ... EUR	
		mm	mm	mm	mm	mm					
PSC40 SVQC R/L 18090-16	PSC 40	18	90	25	68	32	VC.. 1604	286,30	**400**	286,30	**400**
PSC50 SVQC R/L 22110-16	PSC 50	22	110	32	88	40	VC.. 1604	310,40	**500**	310,40	**500**
PSC63 SVQC R/L 22120-16	PSC 63	22	120	32	94	40	VC.. 1604	359,60	**600**	359,60	**600**
PSC63 SVQC R/L 27145-16	PSC 63	27	145	40	120	50	VC.. 1604	359,60	**601**	359,60	**601**



Clamping screw

Spare parts	Y8 Article no. 84 950 ... EUR	
Adapter		
PSC 40	12,69	**132**
PSC 50	12,69	**132**
PSC 63	12,69	**132**

Internal threading holder

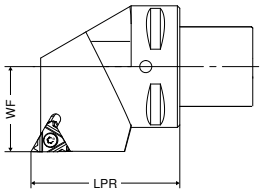




Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	LH	DMIN	Left-hand Y8 Article no. 84 197 ...		Right-hand Y8 Article no. 84 196 ...	
		mm	mm	mm	mm	EUR		EUR	
PSC40 SI R/L 12060-16.IK	PSC 40	12	60	37	20	334,50	410	334,50	410
PSC40 SI R/L 14060-16.IK	PSC 40	14	60	38	25	334,50	412	334,50	412
PSC40 SI R/L 17070-16.IK	PSC 40	17	70	48	32	334,50	414	334,50	414
PSC40 SI R/L 22090-16.IK	PSC 40	22	90	69	40	334,50	416	334,50	416
PSC40 SI R/L 27080-16.IK	PSC 40	27	80	60	50	334,50	418	334,50	418
PSC40 SI R/L 15065-22.IK	PSC 40	15	65	42	25	334,50	420	334,50	420
PSC40 SI R/L 19070-22.IK	PSC 40	19	70	48	32	334,50	422	334,50	422
PSC40 SI R/L 22090-22.IK	PSC 40	22	90	69	40	334,50	424	334,50	424
PSC40 SI R/L 27080-22.IK	PSC 40	27	80	60	50	334,50	426	334,50	426
PSC50 SI R/L 12060-16.IK	PSC 50	12	60	35	20	372,30	510	372,30	510
PSC50 SI R/L 14060-16.IK	PSC 50	14	60	36	25	372,30	512	372,30	512
PSC50 SI R/L 17070-16.IK	PSC 50	17	70	47	32	372,30	514	372,30	514
PSC50 SI R/L 22090-16.IK	PSC 50	22	90	68	40	372,30	516	372,30	516
PSC50 SI R/L 27105-16.IK	PSC 50	27	105	84	50	372,30	518	372,30	518
PSC50 SI R/L 15065-22.IK	PSC 50	15	65	41	25	372,30	520	372,30	520
PSC50 SI R/L 19070-22.IK	PSC 50	19	70	47	32	372,30	522	372,30	522
PSC50 SI R/L 22090-22.IK	PSC 50	22	90	68	40	372,30	524	372,30	524
PSC50 SI R/L 27105-22.IK	PSC 50	27	105	84	50	372,30	526	372,30	526
PSC63 SI R/L 14070-16.IK	PSC 63	14	70	42	25	427,90	610	427,90	610
PSC63 SI R/L 17075-16.IK	PSC 63	17	75	48	32	427,90	612	427,90	612
PSC63 SI R/L 22090-16.IK	PSC 63	22	90	64	40	427,90	614	427,90	614
PSC63 SI R/L 27105-16.IK	PSC 63	27	105	80	50	427,90	616	427,90	616
PSC63 SI R/L 19075-22.IK	PSC 63	19	75	48	32	427,90	620	427,90	620
PSC63 SI R/L 22090-22.IK	PSC 63	22	90	64	40	427,90	622	427,90	622
PSC63 SI R/L 27105-22.IK	PSC 63	27	105	80	50	427,90	624	427,90	624

External threading holder

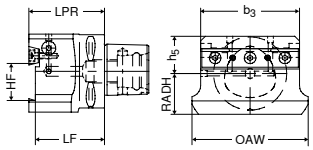




Illustrations show right-hand versions

ISO designation	Adapter	LPR	WF	Left-hand Y8 Article no. 84 191 ...		Right-hand Y8 Article no. 84 190 ...	
		mm	mm	EUR		EUR	
PSC40 SE R/L 27050-16.IK	PSC 40	50	27	239,00	412	239,00	412
PSC40 SE R/L 27050-22.IK	PSC 40	50	27	239,00	422	239,00	422
PSC50 SE R/L 35060-16.IK	PSC 50	60	35	264,30	512	264,30	512
PSC50 SE R/L 35060-22.IK	PSC 50	60	35	264,30	522	264,30	522
PSC63 SE R/L 45065-16.IK	PSC 63	65	45	303,00	612	303,00	612
PSC63 SE R/L 45065-22.IK	PSC 63	65	45	303,00	622	303,00	622
PSC80 SE R/L 55080-22.IK	PSC 80	80	55	319,80	822	319,80	822

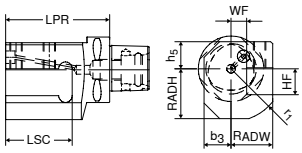
Radial parting blade holder, right / left





Adapter	HF	LPR	OAW	b_3	h_5	RADH	LF	Neutral Y8 Article no. 84 132 ...	
	mm	mm	mm	mm	mm	mm	mm	EUR	
PSC 63	26	65	91	75	30	30	60	254,80	626
PSC 63	32	65	100	85	32	35	88	254,80	632

Square section adapter, single face

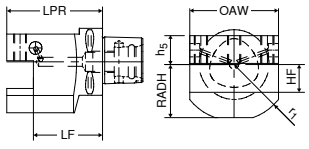




Illustrations show right-hand versions

Adapter	HF	LPR	b_3	RADW	r_1	WF	h_5	RADH	LSC	Left-hand Y8 Article no. 84 611 ...		Right-hand Y8 Article no. 84 610 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
PSC 50	20	80	26	35	45	15	26	43	53	207,70	520	207,70	520
PSC 50	25	90	26	40	51	15	26	48	64	207,70	525	207,70	525
PSC 50	32	115	26	47	61	15	26	55	90	207,70	532	207,70	532
PSC 63	20	90	26	35	45	15	26	43	53	239,00	620	239,00	620
PSC 63	25	100	26	40	51	15	26	48	64	239,00	625	239,00	625
PSC 63	32	125	26	47	61	15	26	55	90	239,00	632	239,00	632
PSC 80	20	90	26	35	45	15	26	43	53	287,30	820	287,30	820
PSC 80	25	100	26	40	51	15	26	48	64	287,30	825	287,30	825
PSC 80	32	125	26	47	61	15	26	55	90	287,30	832	287,30	832

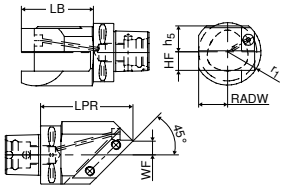
Square section adapter





Adapter	HF	LPR	OAW	r_1	RADH	h_5	LF	Neutral Y8 Article no. 84 602 ...	
	mm	mm	mm	mm	mm	mm	mm	EUR	
PSC 50	20	70	70	45	69	43	50	207,70	520
PSC 50	25	80	80	51	74	48	55	215,00	525
PSC 50	32	90	90	61	81	55	58	230,70	532
PSC 63	20	80	70	45	69	43	60	239,00	620
PSC 63	25	90	80	51	74	48	65	254,80	625
PSC 63	32	100	90	61	81	55	68	271,60	632
PSC 80	20	80	70	45	69	43	60	254,80	820
PSC 80	25	90	80	51	74	48	65	271,60	825
PSC 80	32	100	90	61	81	55	68	287,30	832

Square section adapter 45°

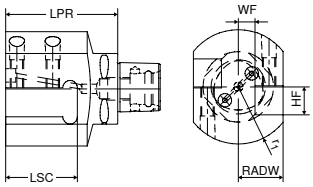


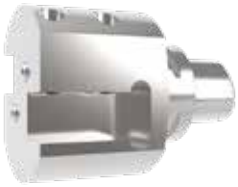


Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	h_5	LB	Left-hand Y8 Article no. 84 605 ...		Right-hand Y8 Article no. 84 604 ...	
	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
PSC 50	20	100	31	36	15	26	80	207,70	**520**	207,70	**520**
PSC 63	20	100	32	36	15	28	78	247,50	**620**	247,50	**620**
PSC 80	32	135	45	70	17	40	105	279,00	**832**	279,00	**832**

Square section adapter, double face

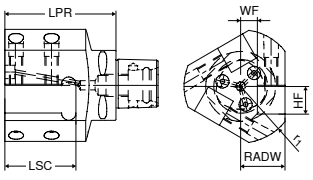




Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	LSC	Left-hand Y8 Article no. 84 613 ...		Right-hand Y8 Article no. 84 612 ...	
	mm	mm	mm	mm	mm	mm	EUR		EUR	
PSC 50	20	80	35	45	15	53	351,30	**520**	351,30	**520**
PSC 50	25	90	40	51	15	64	359,60	**525**	359,60	**525**
PSC 50	32	115	47	61	15	90	367,00	**532**	367,00	**532**
PSC 63	20	90	35	45	15	53	367,00	**620**	367,00	**620**
PSC 63	25	100	40	51	15	64	375,40	**625**	375,40	**625**
PSC 63	32	125	47	61	15	90	382,70	**632**	382,70	**632**
PSC 80	20	90	35	45	15	53	439,40	**820**	439,40	**820**
PSC 80	25	100	40	51	15	64	446,70	**825**	446,70	**825**
PSC 80	32	125	47	61	15	90	456,20	**832**	456,20	**832**

Square section adapter, triple face

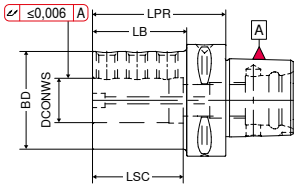




Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	LSC	Left-hand Y8 Article no. 84 615 ...		Right-hand Y8 Article no. 84 614 ...	
	mm	mm	mm	mm	mm	mm	EUR		EUR	
PSC 50	20	80	35	45	15	53	470,80	**520**	470,80	**520**
PSC 50	25	90	40	51	15	64	479,20	**525**	479,20	**525**
PSC 50	32	115	47	61	15	90	495,00	**532**	495,00	**532**
PSC 63	20	90	35	45	15	53	551,50	**620**	551,50	**620**
PSC 63	25	100	40	51	15	64	575,60	**625**	575,60	**625**
PSC 63	32	125	47	61	15	90	591,40	**632**	591,40	**632**
PSC 80	20	90	35	45	15	53	662,70	**820**	662,70	**820**
PSC 80	25	100	40	51	15	64	679,50	**825**	679,50	**825**
PSC 80	32	125	47	61	15	90	695,20	**832**	695,20	**832**

Boring bar holder





Adapter	DCONWS	LPR	BD	LB	LSC	Y8 Article no. 84 130 ...	
	mm	mm	mm	mm	mm	EUR	
PSC 50	6	70	40	50	40	183,50	**506**
PSC 50	8	70	44	50	40	183,50	**508**
PSC 50	10	70	44	50	45	183,50	**510**
PSC 50	12	70	44	50	45	183,50	**512**
PSC 50	16	75	44	55	45	183,50	**516**
PSC 50	20	75	50	75	51	183,50	**520**
PSC 50	25	80	55	50	51	183,50	**525**
PSC 50	32	90	72	70	60	183,50	**532**
PSC 63	6	75	40	53	40	183,50	**606**
PSC 63	8	75	44	53	40	183,50	**608**
PSC 63	10	75	44	53	45	183,50	**610**
PSC 63	12	75	44	53	45	183,50	**612**
PSC 63	16	75	44	53	45	183,50	**616**
PSC 63	20	75	50	53	51	183,50	**620**
PSC 63	25	75	55	53	51	183,50	**625**
PSC 63	32	75	72	52	60	183,50	**632**
PSC 63	40	105	70	82	90	183,50	**640**

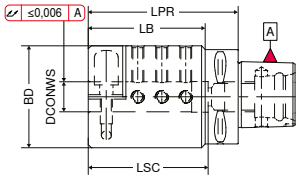


Grubscrew

Spare parts DCONWS		Y8 Article no. 84 950 ...	
		EUR	
6	M6x16	3,84	**153**
8	M8x16	3,84	**154**
10	M10x16	3,84	**155**
12 - 40	M12x14	3,84	**156**

Boring bar adapter, split version

- Vibration-damped
- Ideally suited for large overhangs





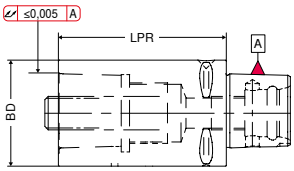
Adapter	DCONWS	LPR	BD	LB	LSC	Y8 Article no. 84 131 ...	
	mm	mm	mm	mm	mm	EUR	
PSC 63	6	80	40	58	60	223,40	**606**
PSC 63	8	85	45	63	65	223,40	**608**
PSC 63	10	85	50	63	65	223,40	**610**
PSC 63	12	100	63	78	80	223,40	**612**
PSC 63	16	100	63	78	80	223,40	**616**
PSC 63	20	100	68	78	80	223,40	**620**
PSC 63	25	100	68	78	80	223,40	**625**
PSC 63	32	100	72	78	80	223,40	**632**

Spare parts DCONWS		Y8  Grubscrew Article no. 83 950 ... EUR			Y8  Grubscrew Article no. 84 950 ... EUR			Y8  Stop screw IK Article no. 81 950 ... EUR	
6								M5x15	1,32 **050**
8	M6x20	2,06	**462**						
10				M6x16	3,84	**153**			
12 - 20	M8x20	2,06	**468**						
25	M8x25	2,06	**467**						
32	M10x20	2,06	**471**						

16

Extension, axial clamping

▲ Run out ≤ 0,002mm





Adapter	BD	LPR	Y8 Article no. 84 620 ... EUR	
	mm	mm		
PSC 32	32	60	151,00	**301**
PSC 32	32	80	151,00	**302**
PSC 40	40	60	159,40	**401**
PSC 40	40	80	159,40	**402**
PSC 50	50	80	166,70	**501**
PSC 50	50	100	166,70	**502**
PSC 63	63	100	175,10	**601**
PSC 63	63	140	175,10	**602**
PSC 80	80	100	183,50	**801**
PSC 80	80	125	183,50	**802**



Threaded ring



Tightening screw

Spare parts Adapter	Y8 Article no. 84 950 ... EUR			Y8 Article no. 84 950 ... EUR	
PSC 32	25,69	**127**	SW8	18,56	**122**
PSC 40	25,69	**128**	SW8	20,97	**123**
PSC 50	25,69	**129**	SW10	20,97	**124**
PSC 63	51,28	**130**	SW14	23,49	**126**
PSC 80	51,28	**130**	SW14	23,49	**126**

Accessories

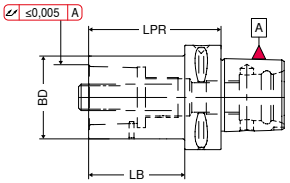


Hollow nose keys

→ 187

Cylindrical reduction

▲ Run out ≤ 0,002mm





Adapter	BD	LPR	LB	Y8 Article no. 84 624 ...	
	mm	mm	mm	EUR	
PSC 40	32	55	35	143,70	**403**
PSC 50	32	60	40	159,40	**503**
PSC 50	40	65	45	159,40	**504**
PSC 63	32	70	48	166,70	**603**
PSC 63	40	80	58	166,70	**604**
PSC 63	50	80	58	166,70	**605**
PSC 80	32	60	30	175,10	**803**
PSC 80	40	70	40	175,10	**804**
PSC 80	50	80	50	175,10	**805**
PSC 80	63	80	50	175,10	**806**
PSC 80X	63	80	48	230,70	**816**
PSC 80X	80	100	68	230,70	**818**

Spare parts



Threaded ring



Tightening screw

Adapter	Y8 Article no. 84 950 ... EUR			Y8 Article no. 84 950 ... EUR	
PSC 40	25,69	**128**	SW8	20,97	**123**
PSC 50	25,69	**129**	SW10	20,97	**124**
PSC 63	51,28	**130**	SW14	23,49	**126**
PSC 80	51,28	**130**	SW14	23,49	**126**
PSC 80X	51,28	**130**	SW14	23,49	**126**

Accessories



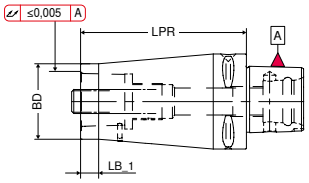
Hollow nose keys

→ 187

16

Tapered reduction

▲ Run out ≤ 0,002mm





Adapter	BD	LPR	LB_1	Y8 Article no. 84 625 ...	
	mm	mm	mm	EUR	
PSC 40	32	70	12	143,70	**403**
PSC 50	40	85	12	159,40	**504**
PSC 63	50	110	12	166,70	**605**
PSC 80	63	120	12	183,50	**806**
PSC 80X	80	150	12	230,70	**818**



Threaded ring



Tightening screw

Spare parts	Y8 Article no. 84 950 ...			Article no. 84 950 ...	
Adapter	EUR			EUR	
PSC 40	25,69	**128**	SW8	20,97	**123**
PSC 50	25,69	**129**	SW10	20,97	**124**
PSC 63	51,28	**130**	SW14	23,49	**126**
PSC 80	51,28	**130**	SW14	23,49	**126**
PSC 80X	51,28	**130**	SW14	23,49	**126**

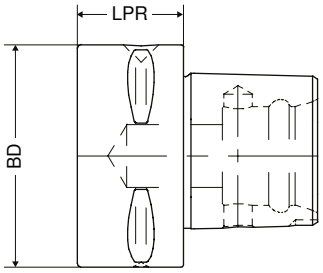
Accessories



Hollow nose keys

→ 187

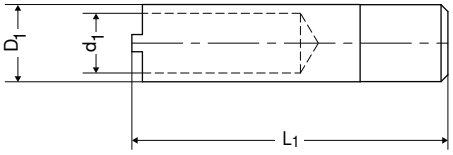
Sealing plugs





Adapter	BD	LPR	Y8 Article no. 84 135 ...
	mm	mm	EUR
PSC 40	40	28	80,00 040
PSC 50	50	28	80,00 050
PSC 63	63	30	94,47 060
PSC 80	80	38	102,50 080

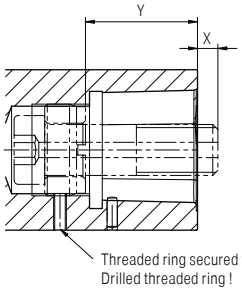
Hollow nose key for clamping screw for PSC extensions and reductions





Adapter	D_1 mm	L_1 mm	d_1 mm	Y8 Article no. 84 651 ...
				EUR
PSC 32	16	80	12,5	43,20 032
PSC 40	20	80	15,0	45,62 040
PSC 50	22	90	17,0	45,62 050
PSC 63/80/80X	34	110	21,0	50,33 063

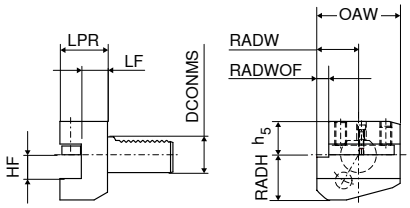
Installation instructions: clamping screw for PSC extensions and reductions



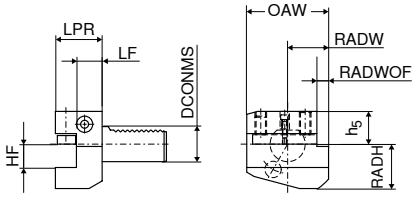
X = Screw leading edge
Y = Threaded ring insertion depth

Adapter	X mm	Y mm
PSC 32	5	24
PSC 40	5	29
PSC 50	6	36
PSC 63	8	44
PSC 80	0	53
PSC 80X	0	53

Radial tool holders, short



B2



B1



B2

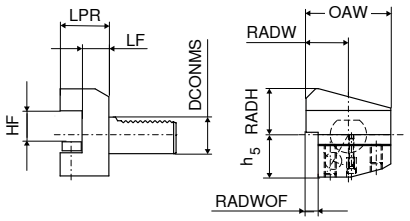


B1

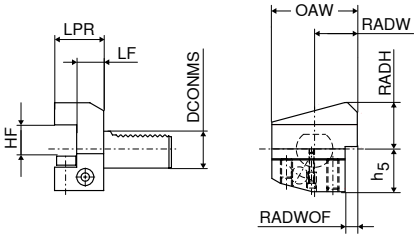
DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 189 ...		Right-hand Y8 Article no. 82 185 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
16	12	42	23,0	5,0	20,0	22	13,0	24	142,60	160	103,00	160
16	12	42	23,0	5,0	20,0	22	23,0	34	117,40	161		
20	16	55	30,0	7,0	25,0	30	16,0	30	110,10	200	117,40	200
20	16	55	30,0	7,0	25,0	30	26,0	40	115,40	201	113,30	201
20	16	55	30,0	7,0	25,0	30	18,0	30	317,80	202 1)	355,40	202 1)
20	16	55	30,0	7,0	25,0	30	25,5	40			315,60	203 1)
25	16	55	30,0	7,0	25,0	30	16,0	30	188,70	250	128,90	250
30	20	70	35,0	10,0	28,0	38	18,5	40	118,50	300	106,90	300
30	20	70	35,0	10,0	28,0	35	32,0	50			661,70	302 1)
30	20	70	35,0	10,0	28,0	38	42,0	60	148,90	301	140,60	301
40	25	85	42,5	12,5	32,5	48	18,5	44	120,60	400	110,10	400
50	32	100	50,0	16,0	35,0	60	30,0	55	185,60	500	183,50	500

1) Height adjustable +/- 1 mm

Radial tool holders, overhead, short



B4



B3



B4



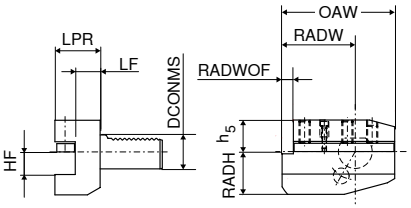
B3

DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 196 ...		Right-hand Y8 Article no. 82 193 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
16	12	42	23,0	5,0	20,0	22	13,0	24			109,10	160
20	16	55	30,0	7,0	25,0	30	16,0	30	115,40	200	117,40	200
20	16	55	30,0	7,0	25,0	30	26,0	40	195,00	201	135,30	201
20	16	55	30,0	7,0	25,0	30	18,5	30	386,90	202 1)	385,90	202 1)
20	16	55	30,0	7,0	25,0	30	26,0	40	535,80	203 1)	343,90	203 1)
25	16	55	30,0	7,0	25,0	30	16,0	30	188,70	250	134,20	250
30	20	70	35,0	10,0	35,0	38	42,0	60	148,90	301	148,90	301
30	20	70	35,0	10,0	35,0	38	18,5	40	120,60	300	111,10	300
40	25	85	42,5	12,5	42,5	48	18,5	44	122,70	400	112,20	400
50	32	100	50,0	16,0	50,0	60	30,0	55	185,60	500	185,60	500

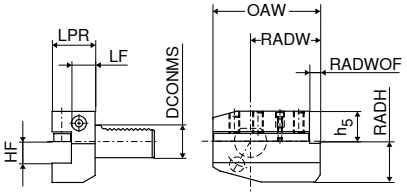
1) Height adjustable +/- 1 mm

Spare parts can be found in → **Chapter 17, Accessories**

Radial tool holders, long



B6



B5

B6



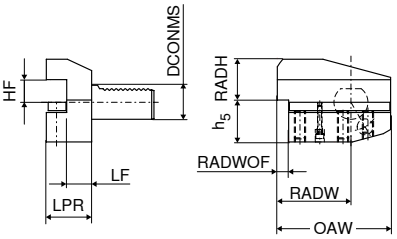
B5



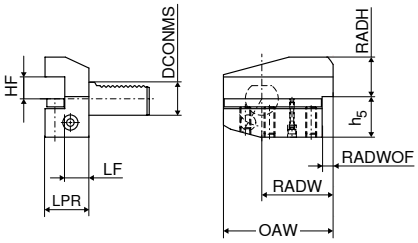
DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 202 ...		Right-hand Y8 Article no. 82 199 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
20	16	75	50,0	7,0	25,0	30	16,0	30	148,90	200	162,60	200
20	16	75	50,0	7,0	25,0	30	26,0	40	143,70	201	152,10	201
20	16	75	50,0	7,0	25,0	30	18,0	30			382,70	202 1)
30	20	100	65,0	10,0	28,0	38	18,5	40	138,40	300	134,20	300
30	20	100	65,0	10,0	28,0	38	42,0	60	160,40	301	272,60	301
40	25	118	75,5	12,5	32,5	48	18,5	44	136,30	400	139,40	400
50	32	130	80,0	16,0	35,0	60	30,0	55	209,70	500	216,00	500

1) Height adjustable +/- 1 mm

Radial tool holders, overhead, long



B8



B7

B8



B7



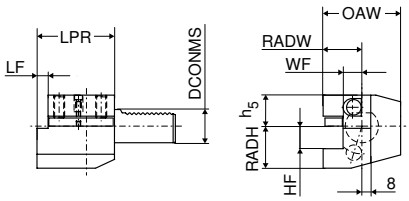
DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 208 ...		Right-hand Y8 Article no. 82 205 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
20	16	75	50,0	7,0	25,0	30	16,0	30	158,40	200	132,10	200
20	16	75	50,0	7,0	25,0	30	26,0	40			205,50	201
20	16	75	50,0	7,0	25,0	30	18,0	30			382,70	202 1)
30	20	100	65,0	10,0	35,0	38	18,5	40	122,70	300	138,40	300
30	20	100	65,0	10,0	35,0	38	42,0	60			162,60	301
40	25	118	75,5	12,5	42,5	48	18,5	44	138,40	400	139,40	400
50	32	130	80,0	16,0	50,0	60	30,0	55	194,00	500	220,20	500

1) Height adjustable +/- 1 mm

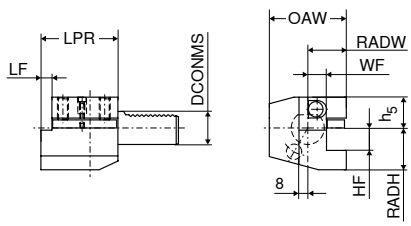
Spare parts can be found in → **Chapter 17, Accessories**

16

Axial tool holders



C2



C1



C2

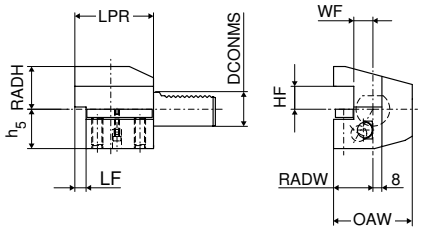


C1

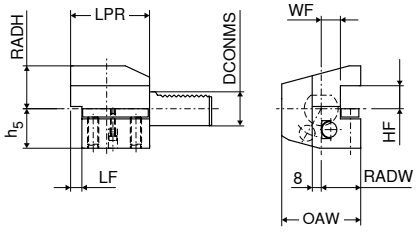
DCONMS h6	HF 0/-0,1	OAW	RADW	WF 0/+0,3	h5	RADH	LPR	LF	Left-hand Y8 Article no. 82 214 ...		Right-hand Y8 Article no. 82 211 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
16	12	43	24,0	13,0	20,0	22	44	5,0			131,10	160
20	16	65	40,0	26,0	25,0	30	50		135,30	200	138,40	201
20	16	65	40,0	25,5	25,0	30	50				393,20	202 1)
20	16	52	27,0	13,0	25,0	30	55	7,0			136,30	200
25	16	58	33,0	19,0	25,0	30	55	7,0	138,40	250	139,40	250
30	20	70	35,0	17,0	28,0	38	70	10,0			124,80	300
30	20	76	41,0	23,0	28,0	38	70	10,0	133,20	300		
40	25	90	47,5	25,5	32,5	48	85	12,5	146,80	400		
40	25	85	42,5	20,5	32,5	48	85	12,5			142,60	400
50	32	100	50,0	25,5	35,0	60	100	16,0			211,80	500
50	32	105	55,0	30,5	35,0	60	100	16,0	224,40	500		

1) Height adjustable +/- 1 mm

Axial tool holders, overhead



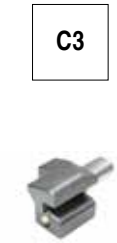
C4



C3



C4



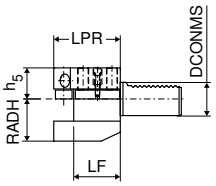
C3

DCONMS h6	HF 0/-0,1	OAW	RADW	WF 0/+0,3	h5	RADH	LPR	LF	Left-hand Y8 Article no. 82 220 ...		Right-hand Y8 Article no. 82 217 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
16	12	43	24,0	13,0	20,0	22	44	5,0			140,60	160
20	16	65	40,0	26,0	25,0	30	50		143,70	200	153,10	201
20	16	65	40,0	25,5	30,0	25	50				492,80	202 1)
20	16	65	40,0	25,5	25,0	30	50		466,70	201 1)		
20	16	52	27,0	13,0	25,0	30	55	7,0			157,30	200
25	16	58	33,0	19,0	25,0	30	55	7,0	152,10	250	152,10	250
30	20	70	35,0	17,0	35,0	38	70	10,0			127,90	300
30	20	76	41,0	23,0	35,0	38	70	10,0	133,20	300		
40	25	85	42,5	20,5	42,5	48	85	12,5			146,80	400
40	25	90	47,5	25,5	42,5	48	85	12,5	146,80	400		
50	32	100	50,0	25,5	50,0	60	100	16,0			215,00	500
50	32	105	55,0	30,5	50,0	60	100	16,0	183,50	500		

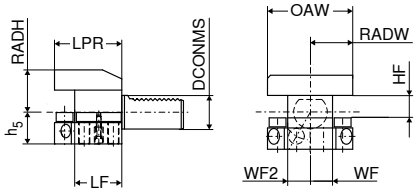
1) Height adjustable +/- 1 mm

Spare parts can be found in → **Chapter 17, Accessories**

Multiple tool holders



D1



D2

D1 D2

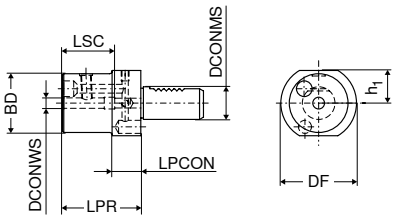




DCONMS h6	HF 0/-0,1	RADW	WF 0/+0,3	WF2 0/+0,3	OAW	h5	RADH	LF 0/+0,5	LPR	Y8 Article no. 82 222 ...		Y8 Article no. 82 224 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
25	16	33,0	19,0	19,0	66	22,0	30	34	48	291,50	250		
25	16	33,0	19,0	19,0	66	25,0	30	34	48			311,40	250
30	20	35,0	17,0	23,0	76	28,0	38	42	60	295,70	300		
30	20	35,0	17,0	23,0	76	35,0	38	42	60			295,70	300
40	25	42,5	20,5	25,5	90	32,5	48	50	72	311,40	400		
40	25	42,5	20,5	25,5	90	42,5	48	50	72			311,40	400

Cylindrical tool holders

- For tools with cylindircal shank to DIN 6535 and DIN 1835 Form E (Whistle Notch)
- Coolant supply either centrally through the tool or via the adjustable ball spray nozzles



E

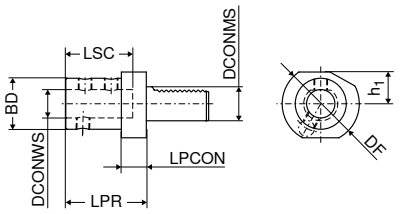


DCONMS h6	DCONWS	DF	BD	h1	LPR	LPCON	LSC	Y8 Article no. 83 269 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR	
20	6	50	45	23,0	60	22	40	136,30	206
20	8	50	45	23,0	60	22	40	131,10	208
20	10	50	45	23,0	60	22	44	131,10	210
20	12	50	45	23,0	60	22	49	131,10	212
20	14	50	45	23,0	62	22	49	131,10	214
20	16	50	45	23,0	67	22	52	126,90	216
20	18	50	45	23,0	67	22	52	126,90	218
20	20	50	45	23,0	67	22	52	126,90	220
30	6	68	52	28,0	67	22	35	142,60	306
30	8	68	52	28,0	67	22	35	135,30	308
30	10	68	52	28,0	67	22	39	135,30	310
30	12	68	52	28,0	67	22	44	135,30	312
30	14	68	52	28,0	67	22	44	135,30	314
30	16	68	52	28,0	67	22	47	131,10	316
30	18	68	52	28,0	67	22	47	135,30	318
30	20	68	52	28,0	67	22	52	131,10	320
40	6	83	52	32,5	67	22	35	158,40	406
40	8	83	52	32,5	67	22	35	153,10	408
40	10	83	52	32,5	67	22	39	153,10	410
40	12	83	52	32,5	67	22	44	153,10	412
40	14	83	52	32,5	67	22	44	153,10	414
40	16	83	52	32,5	67	22	47	147,90	416
40	18	83	52	32,5	67	22	47	147,90	418
40	20	83	52	32,5	67	22	52	147,90	420

Spare parts can be found in → **Chapter 17, Accessories**

Cylindrical tool holders for indexable insert drills

▲ For drilling tools with internal coolant supply



E1



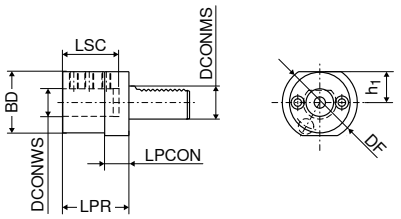
DCONMS h6	DCONWS H6	DF	BD	h1	LPR	LPCON	LSC	Y8 Article no. 82 274 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR	
20	16	50	36	23,0	67	18	54	104,30	**200**
20	20	50	40	23,0	67	18	54	104,30	**201**
20	25	50	45	23,0	71	18	59	104,30	**202**
25	16	58	36	25,0	67	18	54	141,60	**250**
25	20	58	40	25,0	67	18	54	141,60	**251**
25	25	58	45	25,0	71	18	59	141,60	**252**
30	16	68	36	28,0	67	22	54	96,67	**300**
30	20	68	40	28,0	67	22	54	96,67	**301**
30	25	68	45	28,0	71	22	59	96,67	**302**
30	32	68	52	28,0	75	22	63	96,67	**303**
30	40	68	60	28,0	87	22	73	103,90	**304**
40	16	83	36	32,5	67	22	54	110,10	**400**
40	20	83	40	32,5	67	22	54	110,10	**401**
40	25	83	45	32,5	75	22	59	110,10	**402**
40	32	83	52	32,5	75	22	63	110,10	**403**
40	40	83	60	32,5	90	22	73	110,10	**404**
50	20	98	40	35,0	80	30	54	154,10	**500**
50	25	98	45	35,0	80	30	59	154,10	**501**
50	32	98	52	35,0	80	30	63	154,10	**502**
50	40	98	60	35,0	90	30	73	154,10	**503**
50	50	98	70	35,0	100	30	83	113,30	**504**

Spare parts can be found in → **Chapter 17, Accessories**

Boring bar holder

- For turning tools with cylindrical shank
- Coolant supply either through the tool or via the ball-shaped spray nozzle

E2





DCONMS $_{h6}$	DCONWS $_{H7}$	DF	BD	h_1	LPR	LPCON	LSC	Y8 Article no. 82 268 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR	
16	6	40	32	18,0	44	13	34	125,90	**160** [1]
16	8	40	32	18,0	44	13	34	106,90	**161** [1]
16	10	40	32	18,0	44	13	34	106,90	**162** [1]
16	12	40	40	18,0	44	13	34	106,90	**163** [1]
16	16	40	40	18,0	44	13	34	106,90	**164** [1]
20	8	50	40	23,0	50	18	41	112,20	**200**
20	10	50	40	23,0	50	18	41	112,20	**201**
20	12	50	40	23,0	50	18	41	112,20	**202**
20	16	50	40	23,0	50	18	41	112,20	**203**
20	20	50	50	23,0	50	18	41	112,20	**204**
20	25	50	50	23,0	60	18	51	112,20	**205**
25	8	58	40	25,0	50	18	41	128,90	**250**
25	10	58	40	25,0	50	18	41	128,90	**251**
25	12	58	40	25,0	50	18	41	128,90	**252**
25	16	58	40	25,0	50	18	41	128,90	**253**
25	20	58	58	25,0	50	18	41	128,90	**254**
25	25	58	58	25,0	60	18	51	128,90	**255**
30	8	68	55	28,0	60	22	51	110,10	**300**
30	10	68	55	28,0	60	22	51	110,10	**301**
30	12	68	55	28,0	60	22	51	110,10	**302**
30	16	68	55	28,0	60	22	51	110,10	**303**
30	20	68	55	28,0	60	22	51	110,10	**304**
30	25	68	55	28,0	60	22	51	110,10	**305**
30	32	68	68	28,0	75	22	61	110,10	**306**
40	8	83	55	32,5	75	22	61	112,20	**400**
40	10	83	55	32,5	75	22	61	112,20	**401**
40	12	83	55	32,5	75	22	61	112,20	**402**
40	16	83	55	32,5	75	22	61	112,20	**403**
40	20	83	55	32,5	75	22	61	112,20	**404**
40	25	83	55	32,5	75	22	61	112,20	**405**
40	32	83	83	32,5	75	22	61	112,20	**406**
40	40	83	83	32,5	90	22	76	112,20	**407**
50	12	98	68	35,0	90	30	76	160,40	**500**
50	16	98	68	35,0	90	30	76	160,40	**501**
50	20	98	68	35,0	90	30	76	160,40	**502**
50	25	98	68	35,0	90	30	76	153,10	**503**
50	32	98	68	35,0	90	30	76	153,10	**504**
50	40	98	98	35,0	90	30	76	153,10	**505**
50	50	98	98	35,0	100	30	86	153,10	**506**

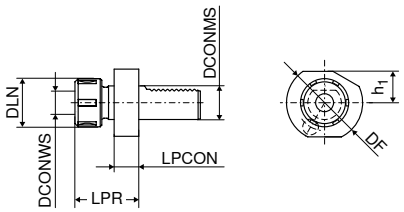
1) Coolant supply through pipe joint

Spare parts + accessories can be found in → **Chapter 17, Accessories**

16

OZ-Collet chuck

E3



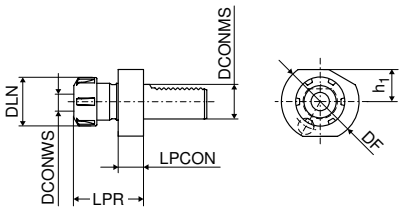


DCONMS h6	DCONWS	DF	DLN	h1	LPR	LPCON	for collet	Y8 Article no. 82 285 ...	
mm	mm	mm	mm	mm	mm	mm		EUR	
20	2 - 16	50	43	23,0	57	18	415E / 421E (OZ)	170,90	**202**
30	2 - 16	68	43	28,0	57	22	415E / 421E (OZ)	165,70	**301**
30	2 - 25	68	60	28,0	75	22	459E / 462E (OZ)	165,70	**302**
40	2 - 25	83	60	32,5	75	22	459E / 462E (OZ)	174,10	**402**
40	4 - 32	83	72	32,5	90	22	460E / 467E (OZ)	179,40	**403**
50	2 - 25	98	60	35,0	75	30	459E / 462E (OZ)	266,30	**500**
50	4 - 32	98	72	35,0	90	30	460E / 467E (OZ)	266,30	**501**

Collets can be found on → **Page 217+218.**

ER Collet chucks

E4





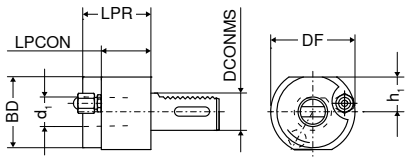
DCONMS h6	DCONWS	DF	DLN	h1	LPR	LPCON	for collet	Y8 Article no. 82 286 ...	
mm	mm	mm	mm	mm	mm	mm		EUR	
16	1 - 10	40	28	18,0	45,5	14	426E (ER16)	151,00	**160**
16	1 - 13	40	34	18,0	44,0	14	428E (ER20)	148,90	**161**
20	1 - 16	50	42	23,0	57,0	18	430E (ER25)	152,10	**202**
20	2 - 20	50	50	23,0	62,0	18	470E (ER32)	156,20	**203**
25	1 - 16	58	42	25,0	57,0	18	430E (ER25)	221,20	**250**
25	2 - 20	58	50	25,0	62,0	18	470E (ER32)	223,40	**251**
30	1 - 16	68	42	28,0	57,0	22	430E (ER25)	135,30	**300**
30	2 - 20	68	50	28,0	75,0	22	470E (ER32)	138,40	**301**
40	1 - 16	83	42	32,5	63,0	22	430E (ER25)	153,10	**400**
40	2 - 20	83	50	32,5	75,0	22	470E (ER32)	153,10	**401**
40	3 - 26	83	63	32,5	75,0	22	472E (ER40)	158,40	**402**
50	2 - 20	94	50	35,0	75,0	30	470E (ER32)	232,80	**500**
50	3 - 26	94	63	35,0	63,0	30	472E (ER40)	232,80	**501**

Collets can be found on → **Page 208–213.**

Morse taper adapters

▲ For taper shanks with ejector tang

F1



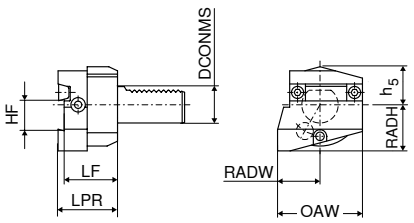


DCONMS $_{h6}$ mm	d_1	BD mm	DF mm	h_1 mm	LPR mm	LPCON mm	Y8 Article no. 82 277 ... EUR	
20	MK1		50	23,0	23		105,90	**200**
20	MK2		50	23,0	87		105,90	**201**
30	MK1		68	28,0	27		95,52	**300**
30	MK2		68	28,0	27		102,10	**301**
30	MK3	58	68	28,0	55	40	102,10	**302**
40	MK2	55	83	32,5	36	22	112,20	**401**
40	MK3	58	83	32,5	36	22	112,20	**402**
40	MK4	68	83	32,5	80	22	112,20	**403**
50	MK2	55	98	35,0	36	30	170,90	**500**
50	MK3	58	98	35,0	36	30	170,90	**501**
50	MK4	68	98	35,0	50	30	170,90	**502**

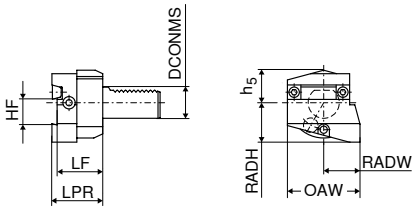
16

Parting blade holders, height adjustable

- Vertical adjustment ± 1 mm
- Suitable for internal cooling through the parting blade
- Axially parallel, adjustable external coolant supply



left



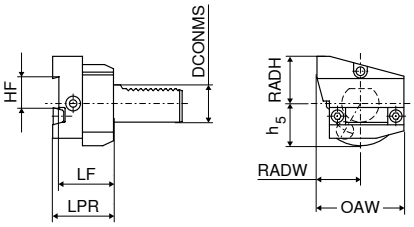
right



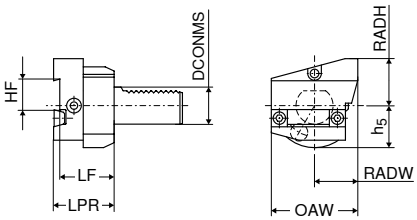
DCONMS h6	OAW	RADW	HF	h_5	RADH	LF	LPR	Left-hand Y8 Article no. 82 237 ...		Right-hand Y8 Article no. 82 236 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
25	53	28,0	26	25,0	30	35	40			389,10	**250**
30	70	35,0	26	28,0	38	44	49	321,90	**300**	321,90	**300**
30	70	35,0	32	30,5	38	44	49	378,60	**302**	378,60	**302**
40	73	42,5	26	32,0	48	44	49	392,20	**040**	392,20	**040**
40	85	42,5	32	32,0	48	44	49	325,10	**400**	325,10	**400**

Parting blade holders, height adjustable, overhead

- Vertical adjustment ± 1 mm
- Suitable for internal cooling through the parting blade
- Axially parallel, adjustable external coolant supply



left



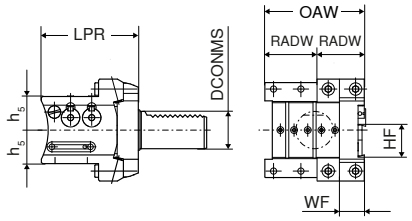
right

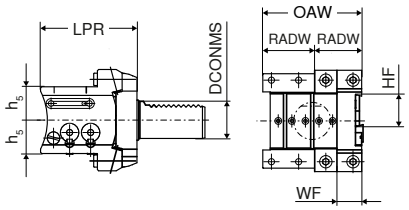


DCONMS h6	OAW	RADW	HF	h_5	RADH	LF	LPR	Left-hand Y8 Article no. 82 243 ...		Right-hand Y8 Article no. 82 242 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
30	70	35,0	26	34,0	38	44	49	431,00	**300**	431,00	**300**
30	70	35,0	32	30,5	38	44	49	378,60	**302**	378,60	**302**
40	73	42,5	26	32,0	48	44	49	392,20	**040**	392,20	**040**
40	85	42,5	32	32,0	48	44	49	325,10	**400**	325,10	**400**

Parting blade holders, height adjustable

- Vertical adjustment ± 1 mm
- Suitable for internal cooling through the parting blade
- Axially parallel, adjustable external coolant supply







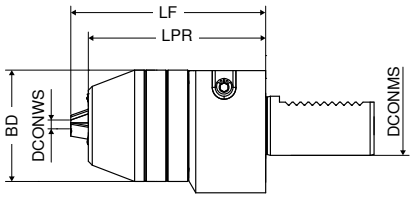
DCONMS h6	OAW	RADW	HF	h5	WF	LPR	Universal Y8 Article no. 82 238 ...		Universal-overhead Y8 Article no. 82 244 ...	
mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
30	80	40	26	27	20	78	602,90	**300**	602,90	**300**
40	80	40	26	27	20	88	669,00	**400**	669,00	**400**
40	80	40	32	32	20	88	669,00	**402**	669,00	**402**

Short drill chuck NC2010

- ▲ Coolant supply via 3 adjustable ball-shaped spray nozzles in the housing
- ▲ Independent of direction of rotation

Scope of supply:

Basic body including chuck key SW 4



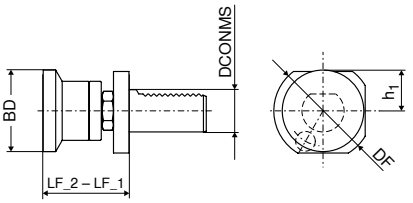


DCONMS h6	DCONWS	BD	LPR	LF	Y8 Article no. 84 297 ...	
mm	mm	mm	mm	mm	EUR	
20	0,5 - 10	48,5	40	50	302,00	**210** 1)
30	0,5 - 13	56,5	90	99	302,00	**313**
30	2,5 - 16	56,5	90	99	323,00	**316**
40	0,5 - 13	56,5	90	99	308,30	**413**
40	2,5 - 16	56,5	90	99	328,30	**416**

1) Without Through Coolant

Material stops

- ▲ Revolving, length adjustable



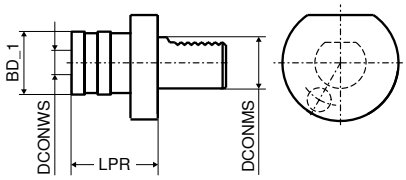


DCONMS h6	BD	DF	h_1	LF_2	LF_1	Y8 Article no. 83 292 ...	
mm	mm	mm	mm	mm	mm	EUR	
20	26	50	23,0	50	70	347,10	**200** 1)
20	32	50	23,0	50	70	360,70	**201** 1)
20	42	50	23,0	50	70	355,40	**202** 1)
30	32	68	28,0	62	95	271,60	**300**
30	42	68	28,0	62	95	275,80	**301**
30	58	68	28,0	62	95	276,80	**302**
40	32	83	32,5	62	95	280,00	**400**
40	42	83	32,5	62	95	282,10	**401**
40	58	83	32,5	62	95	277,80	**402**

1) Without VDI location

Quick-change tap chucks GSF

▲ LZD = Length compensation under tension and compression



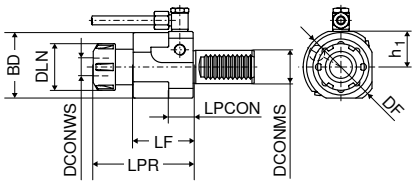


DCONMS h6 mm	cutting range	SZID	DCONWS mm	BD_1 mm	LPR mm	LZD± mm	Y8 Article no. 83 307 ... EUR	
20	M3 - M12	01	19	38	55	9	341,80	**112**
25	M3 - M12	01	19	38	55	9	341,80	**212**
30	M3 - M12	01	19	38	55	9	262,20	**312**
40	M3 - M12	01	19	38	55	9	293,60	**412**
20	M6 - M20	02	31	55	77	15	374,40	**120**
25	M6 - M20	02	31	55	77	15	374,40	**220**
30	M6 - M20	02	31	55	77	15	347,10	**320**
40	M6 - M20	02	31	55	77	15	362,80	**420**

Quick change adapters can be found on → **Page 219–223.**

Tap holders with length compensation GML

▲ LZD = Length compensation under tension and compression
▲ For ER collets with internal square ISO 15488-A (DIN 6499-A)



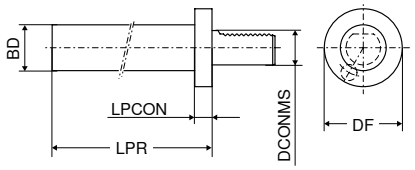


DCONMS mm	DCONWS mm	DLN mm	BD mm	DF mm	h_1 mm	LPR mm	LF mm	LPCON mm	LZD mm	for collet	Y8 Article no. 83 290 ... EUR	
20	0,5 - 10	28	45	50	23,0	65	40	18	6,0 / 1,5	4031E (ER16)	555,80	**213**
30	1 - 16	42	62	68	28,0	90	54	42	8,0 / 2,0	4282E (ER25)	555,80	**316**
40	1 - 16	42	62	83	32,5	85	49	42	8,0 / 2,0	4282E (ER25)	555,80	**416**

ER collets can be found on → **Pages 208–213.**

Test arbors

▲ Radial run-out ≤ 0.02 mm



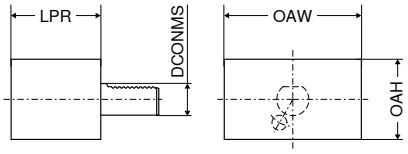


DCONMS	BD h5	DF	LPR	LPCON	Y8 Article no. 83 324 ...	
mm	mm	mm	mm	mm	EUR	
16	30	40	120	15	197,20	**016**
20	40	50	150	15	216,00	**020**
30	40	68	200	15	230,70	**030**
40	40	83	200	15	245,40	**040**
50	40	98	200	15	268,50	**050**

Tool holders, rough machined, rectangular

▲ Manufactured from C45

A1



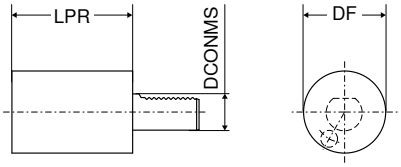


DCONMS h6	LPR	OAW	OAH	Y8 Article no. 82 327 ...	
mm	mm	mm	mm	EUR	
16	44	78	44	88,39	**160**
20	65	100	60	170,90	**200**
25	75	100	60	122,70	**250**
30	85	130	76	160,40	**300**
40	100	151	96	175,10	**400**
50	125	160	120	258,00	**500**

Tool holders, rough machined, round

▲ Manufactured from C45

A2

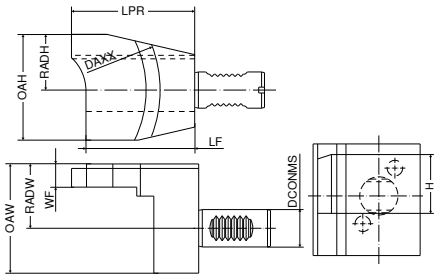




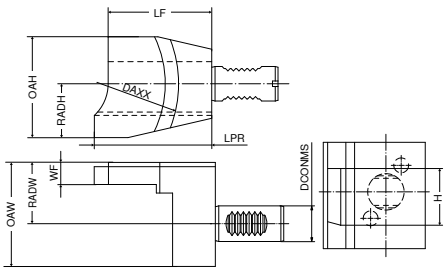
DCONMS $_{h6}$	LPR	DF	Y8 Article no. 82 330 ...	
mm	mm	mm	EUR	
16	60	40	76,13	**160**
20	70	50	61,34	**200**
25	80	58	88,61	**250**
25	200	58	101,80	**253**
30	100	68	70,04	**300**
30	240	68	83,36	**303**
40	120	83	80,21	**400**
40	320	83	120,60	**403**
50	135	98	118,50	**500**
50	400	98	191,90	**502**

Parting blade holder

▲ Doubles = reciprocally interlocked VDI shank



double - overhead



double



DCONMS	OAH	RADH	OAW	RADW	WF	LPR	LF	DAXX	H	double-overhead Y7 Article no. 65 170 ...		double Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
20	94	47	95	60	15,5	85,5	75	176	26	488,40	**040** 1)	488,40	**039** 1)
25	73	39	72	43	15,5	85,0	75	176	26	522,90	**042** 1)	522,90	**041** 1)
25	73	39	72	43	15,5	85,0	75	176	32	522,90	**044** 1)	522,90	**043** 1)
30	100	50	95	60	15,5	85,5	75	176	26	522,90	**046** 1)	522,90	**045** 1)
30	100	50	95	60	15,5	85,5	75	176	32	522,90	**048** 1)	522,90	**047** 1)
40	100	50	95	60	15,5	85,5	75	176	26	563,50	**050** 1)	563,50	**049** 1)
40	100	50	95	60	15,5	85,5	75	176	32	563,50	**052** 1)	563,50	**051** 1)

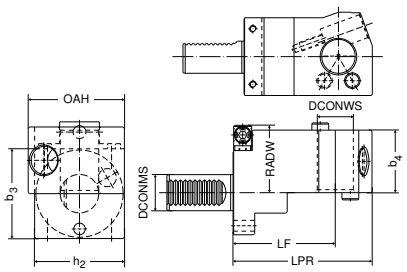
1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

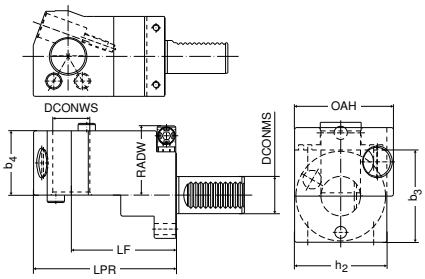
16

90° VDI to VDI adapter, double sided

▲ For rotating toolholder



left



right





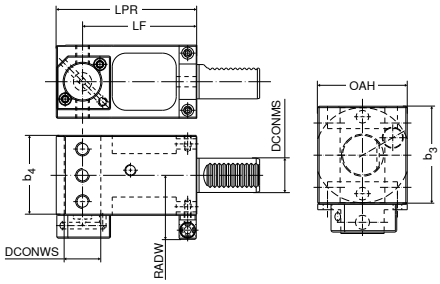
DCONMS	DCONWS	OAH	h_2	b_3	b_4	RADW	LF	LPR	Left-hand Y7 Article no. 65 170 ...		Right-hand Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR		EUR	
25	20	60	54	60	44	48,0	75	100	463,40	**012** [1]	463,40	**011** [1]
25	25	63	54	60	44	48,0	75	100	463,40	**014**	463,40	**013** [1]
30	30	75	70	70	52	56,0	85	115	455,10	**004**	446,70	**006** [1]
30	30	75	70	70	52	56,0	100	130	507,50	**003** [1]	507,50	**005**
40	40	93	85	85	60	67,5	100	138	663,50	**008**	663,50	**007**
40	40	93	85	85	60	67,5	120	158	415,70	**009**	553,90	**010** [1]
50	50	109	90	100	72	73,5	120	165	788,60	**002** [1]	788,60	**001** [1]

1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

Boring bar holder with through coolant

▲ Delivered as left hand tool
▲ Can be re-assembled as right hand tool
▲ External coolant supply avaialble



left



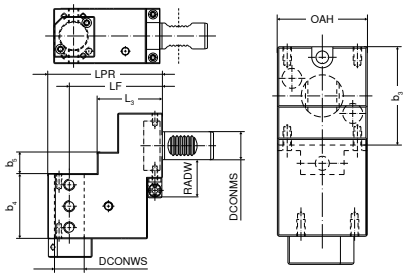
DCONMS	DCONWS	OAH	b_3	b_4	RADW	LF	LPR	right / left Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR	
25	25	54	60	60	48,0	75	97,5	406,20	**065**
30	32	64	70	70	56,0	85	108,0	442,00	**062**
30	32	64	70	70	56,0	100	123,0	451,50	**063**
40	40	76	85	85	67,5	100	132,0	476,50	**067**
40	40	76	85	85	67,5	120	152,0	514,60	**068**
50	50	85	100	100	73,5	120	160,0	696,90	**066** [1]

1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

Boring bar holder, with offset, with through coolant

- Doubles = reciprocally interlocked VDI shank
- External coolant supply available





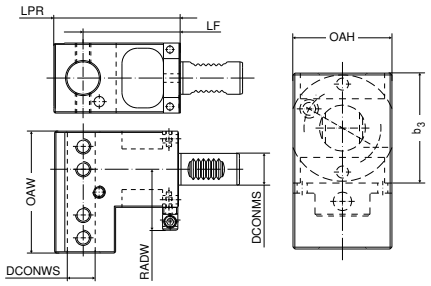
DCONMS	DCONWS	OAH	b_3	b_4	RADW	b_5	LF	LPR	L_3	double Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	EUR	
25	25	54	60	60	48,0	20	75	97,5	48	581,30	**069**
30	32	64	70	70	56,0	30	100	123,0	70	576,60	**070** 1)
40	40	85	85	85	67,5	40	100	132,0	63	624,20	**071** 1)

1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

Double boring bar holder with through coolant

- Doubles = reciprocally interlocked VDI shank
- For use of two boring bars for main and sub-spindle machining
- External coolant supply available





DCONMS	DCONWS	OAH	b_3	OAW	RADW	LF	LPR	double Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	EUR	
25	25	54	60	96	48,0	75	97,5	544,40	**080** 1)
30	32	64	70	120	56,0	85	108,0	484,80	**082** 1)
30	32	64	70	120	56,0	100	123,0	576,60	**083** 1)
40	40	76	85	120	67,5	120	152,0	676,60	**084**

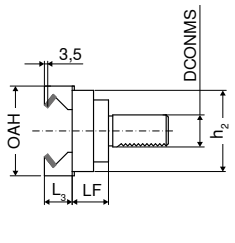
1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

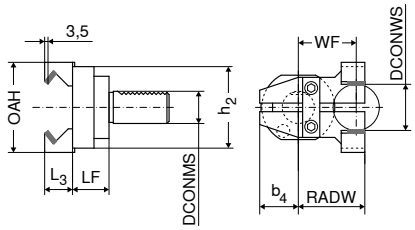
Bar pullers for disc turrets, radial

- Two adjustable, spring-mounted, replaceable grippers are fitted to the main body. Each of these is equipped with a carbide insert. The grippers are set to a slightly smaller diameter than the bar and then pressed onto the bar in an axial direction (x axis) by the tool turret.
- GA = Gripper set

Scope of supply:
Bar puller incl. GA 1 for VDI 16, and GA 3 from VDI 20



left



right



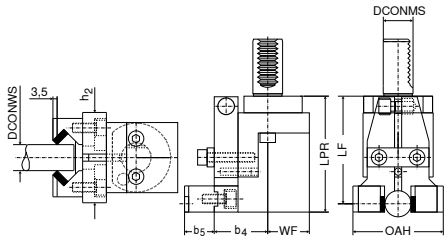


DCONMS $_{h6}$ mm	DCONWS mm	RADW mm	WF mm	b_4 mm	OAH mm	h_2 mm	LF mm	L_3 mm	suitable for GA	Left-hand Y7 Article no. 80 309 ... EUR		Right-hand Y7 Article no. 80 306 ... EUR	
16	2 - 22	35,0	28,5	26,5	73	55	27,8	24,5	1			877,60	**160**
20	2 - 42	60,5	54,0	36,0	86	76	33,7	26,0	3			1.054,00	**200**
30	2 - 65	60,5	54,0	36,0	102	76	33,7	26,0	3 - 4			1.054,00	**300**
30	2 - 65	47,5	41,0	49,0	102	76	33,7	26,0	3 - 4	1.054,00	**300**		
40	2 - 65	60,5	54,0	41,5	122	76	33,7	26,0	3 - 4	1.454,00	**400**	1.454,00	**400**

Bar pullers for star turrets

- Two adjustable, spring-mounted, replaceable grippers are fitted to the main body. Each of these is equipped with a carbide insert. The grippers are set to a slightly smaller diameter than the bar and then pressed onto the bar in an axial direction (x axis) by the tool turret.
- 90° angle head
- GA = Gripper set

Scope of supply:
Bar puller with GA 3



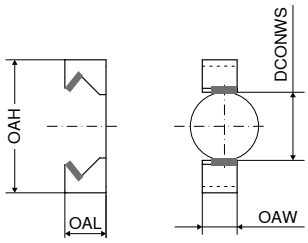


left

DCONMS $_{h6}$ mm	DCONWS mm	LPR mm	LF mm	OAH mm	h_2 mm	b_4 mm	b_5 mm	WF mm	suitable for GA	Left-hand Y7 Article no. 80 310 ... EUR	
30	2 - 65	97	90,5	86	76	46,7	26	34,0	3 - 4	1.157,00	**300**
40	2 - 65	97	90,5	102	76	59,7	26	41,5	3 - 4	1.520,00	**400**

Gripper accessories

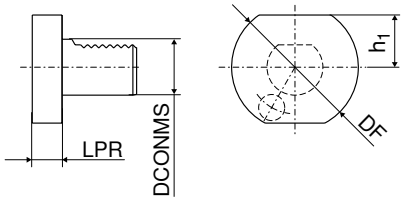
▲ For bar pullers 80 306 ... / 80 309 ... / 80 310 ...
▲ Price per pair



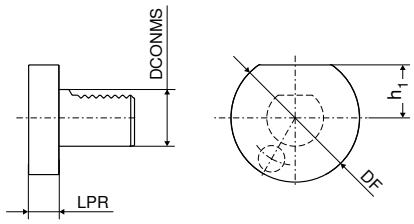


GA	DCONWS	OAL	OAW	OAH	Y7 Article no. 80 312 ... EUR	
	mm	mm	mm	mm		
1	2 - 22	24,5	13	58	194,00	022
3	2 - 42	26,0	22	86	194,00	042
4	42 - 65	29,5	22	102	256,90	065

Protection plugs



Steel



Plastic

Z2



Z2

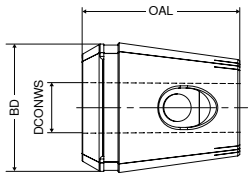


DCONMS h8	DF	h1	LPR	Steel Y8 Article no. 82 317 ... EUR		Plastic Y8 Article no. 83 318 ... EUR	
mm	mm	mm	mm				
16	40	18,0	16	26,95	160	20,13	160
20	50	23,0	16	25,27	200	8,10	200
25	58	25,0	16	36,07	250		
30	68	28,0	16	24,95	300	8,29	300
40	83	32,5	20	31,66	400	9,39	400
50	98	35,0	20	31,66	500	13,53	500

ER wedge collet with pull out protection, for precision collet chuck

- Similar to DIN ISO 15488-B
- Slotted
- Double taper collet

Centro-P WD	ER 5 µm





BD = 32,7
OAL = 40
ER 32

DCONWS		Y8 Article no. 83 629 ... EUR	
mm			
12		91,57	120
14		91,57	140
16		91,57	160
18		91,57	180

Y8



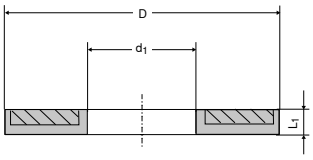
Conical spring

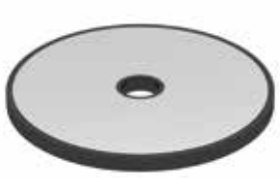
Spare parts DCONWS		Article no. 83 950 ... EUR	
12 - 18	CP 32	4,61	455

Sealing rings for precision collet chucks

- For sealing when using tools with internal cooling
- Sealing range: nominal diameter –0,1 mm / +0,4 mm
- Can be applied up to 80 bar

Centro-P



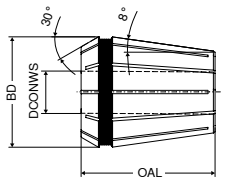


	D = 12,6 L_1 = 2 426E (ER16)		D = 15,8 L_1 = 2 428E (ER20)		D = 20,2 L_1 = 2 430E (ER25)		D = 26,2 L_1 = 2 444E / OZ (ER32)		D = 34,2 L_1 = 2 472E (ER40)	
	Y8		Y8		Y8		Y8		Y8	
d_1	Article no. 83 690 ...		Article no. 83 694 ...		Article no. 83 691 ...		Article no. 83 692 ...		Article no. 83 693 ...	
mm	EUR		EUR		EUR		EUR		EUR	
1,0	18,31	010								
1,5	18,31	015								
2,0	18,31	020	19,00	020	18,31	020	19,00	020		
2,5	18,31	025	19,00	025	18,31	025	19,00	025		
3,0	14,98	030	15,59	030	14,98	030	15,59	030	19,00	030
3,5	14,98	035	15,59	035	14,98	035	15,59	035	19,00	035
4,0	14,98	040	15,59	040	14,98	040	15,59	040	19,00	040
4,5	14,98	045	15,59	045	14,98	045	15,59	045	19,00	045
5,0	14,98	050	15,59	050	14,98	050	15,59	050	19,00	050
5,5	14,98	055	15,59	055	14,98	055	15,59	055	19,00	055
6,0	14,98	060	15,59	060	14,98	060	15,59	060	19,00	060
6,5	14,98	065	15,59	065	14,98	065	15,59	065	19,00	065
7,0	14,98	070	15,59	070	14,98	070	15,59	070	19,00	070
7,5	14,98	075	15,59	075	14,98	075	15,59	075	19,00	075
8,0	14,98	080	15,59	080	14,98	080	15,59	080	19,00	080
8,5	14,98	085	15,59	085	14,98	085	15,59	085	19,00	085
9,0	14,98	090	15,59	090	14,98	090	15,59	090	19,00	090
9,5	14,98	095	15,59	095	14,98	095	15,59	095	19,00	095
10,0	14,98	100	15,59	100	14,98	100	15,59	100	19,00	100
10,5			15,59	105	14,98	105	15,59	105	19,00	105
11,0			15,59	110	14,98	110	15,59	110	19,00	110
11,5			15,59	115	14,98	115	15,59	115	19,00	115
12,0			15,59	120	14,98	120	15,59	120	19,00	120
12,5			15,59	125	14,98	125	15,59	125	19,00	125
13,0			15,59	130	14,98	130	15,59	130	19,00	130
13,5					14,98	135	15,59	135	19,00	135
14,0					14,98	140	15,59	140	19,00	140
14,5					14,98	145	15,59	145	19,00	145
15,0					14,98	150	15,59	150	19,00	150
15,5					14,98	155	15,59	155	19,00	155
16,0					14,98	160	15,59	160	19,00	160
16,5							15,59	165	19,00	165
17,0							15,59	170	19,00	170
17,5							15,59	175	19,00	175
18,0							15,59	180	19,00	180
18,5							15,59	185	19,00	185
19,0							15,59	190	19,00	190
19,5							15,59	195	19,00	195
20,0							15,59	200	19,00	200
20,5									19,00	205
21,0									19,00	210
21,5									19,00	215
22,0									19,00	220
22,5									19,00	225
23,0									19,00	230
23,5									19,00	235
24,0									19,00	240
24,5									19,00	245
25,0									19,00	250
25,5									19,00	255
26,0									19,00	260

Precision ER collet for precision collet chuck

- DIN ISO 15488-B (old DIN 6499-B)
- 12 times slotted
- Double taper collet
- Coloured ring as identification of precision collet
- ER08: 5 µm runout and repeatability

Centro-P Coated | **ER-B 2 µm**





DCONWS mm		BD = 8,5 OAL = 13,6 4004 E / ER08 Y8 Article no. 84 577 ... EUR		BD = 11,5 OAL = 18 4008 E / ER11 Y8 Article no. 84 585 ... EUR		BD = 17 OAL = 27,5 426 E / ER16 Y8 Article no. 84 596 ... EUR		BD = 26 OAL = 34 430 E / ER25 Y8 Article no. 84 597 ... EUR		BD = 33 OAL = 40 470 E / ER32 Y8 Article no. 84 598 ... EUR		BD = 41 OAL = 46 472 E / ER40 Y8 Article no. 84 599 ... EUR	
1,0		64,87	010	62,35	010	61,84	010						
1,1						97,00	011						
1,2						97,00	012						
1,4						97,00	014						
1,5		64,87	015	62,35	015	61,84	015						
1,6						97,00	016						
1,8						97,00	018						
2,0		50,53	020	48,53	020	46,52	020	48,01	020	49,27	020		
2,2						85,97	022						
2,4						85,97	024						
2,5		50,53	025	48,53	025	46,52	025	48,01	025				
2,6						85,97	026						
2,8						85,97	028						
3,0		43,47	030	41,22	030	39,72	030 [1]	40,72	030	41,22	030	68,36	030
3,2						76,42	032						
3,4						76,42	034						
3,5		43,47	035	41,22	035	56,82	035	59,82	035				
3,6						76,42	036						
3,8						76,42	038						
4,0		43,47	040	41,22	040	39,72	040 [1]	40,72	040	41,22	040 [1]	52,05	040
4,5		43,47	045	41,22	045	56,82	045	59,82	045				
5,0		43,47	050	41,22	050	39,72	050 [1]	40,72	050	41,22	050	52,05	050
5,5				41,22	055	56,82	055	59,82	055				
5,6						76,42	056						
6,0				41,22	060	39,72	060 [1]	40,72	060 [1]	41,22	060 [1]	52,05	060
6,3						76,42	063						
6,5				41,22	065	56,82	065	59,82	065				
7,0				41,22	070	39,72	070 [1]	40,72	070	41,22	070	52,05	070
7,1						76,42	071						
7,5						56,82	075	59,82	075				
8,0						39,72	080 [1]	40,72	080 [1]	41,22	080 [1]	52,05	080
8,5						56,82	085	59,82	085				
9,0						39,72	090	40,72	090	41,22	090	52,05	090
9,5						56,82	095	59,82	095				
10,0						39,72	100 [1]	40,72	100 [1]	41,22	100 [1]	52,05	100
10,5								59,82	105				
11,0								40,72	110	41,22	110	52,05	110
11,5								59,82	115				
12,0								40,72	120 [1]	41,22	120 [1]	52,05	120
12,5								59,82	125				
13,0								40,72	130	41,22	130	52,05	130
13,5								59,82	135				
14,0								40,72	140 [1]	41,22	140 [1]	52,05	140
14,5								59,82	145				
15,0								40,72	150	41,22	150	52,05	150
15,5								59,82	155				
16,0								40,72	160 [1]	41,22	160 [1]	52,05	160
17,0										41,22	170	52,05	170
18,0										41,22	180	52,05	180
19,0										41,22	190	52,05	190
20,0										41,22	200 [1]	52,05	200
21,0												52,05	210
22,0												52,05	220
23,0												52,05	230
24,0												52,05	240
25,0												52,05	250
26,0												52,05	260
	Set in wooden box					253,40	999	305,70	999	351,90	999		

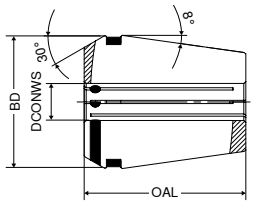
1) Included in the set

Clamping range covered: H10 corresponding to shank Ø DCONWS

ER precision collet, sealed, for precision collet chuck

- Similar to DIN ISO 15488-A
- 8 slotted
- Coloured ring as identification of precision collet
- $p_{max.}$ = 120 bar

Centro-P Coated | **ER-A 2 µm**



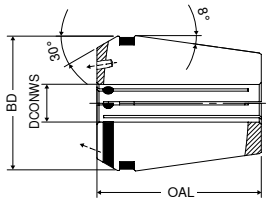


DCONWS	BD = 11,3 OAL = 18 425 E / ER11		BD = 16,7 OAL = 27,5 425 E / ER16		BD = 25,7 OAL = 34 429 E / ER25		BD = 32,7 OAL = 40 469 E / ER32		BD = 40,7 OAL = 46 471 E / ER40	
	Y8		Y8		Y8		Y8		Y8	
	Article no. 84 536 ...		Article no. 84 537 ...		Article no. 84 538 ...		Article no. 84 539 ...		Article no. 84 540 ...	
mm	EUR		EUR		EUR		EUR		EUR	
3	58,31	030	53,28	030	61,33	030	63,36	030		
4	58,31	040	53,28	040	56,31	040	58,31	040		
5	63,36	050	58,31	050	61,33	050	63,36	050		
6	58,31	060	53,28	060	56,31	060	58,31	060	66,35	060
7			58,31	070	61,33	070	63,36	070		
8			53,28	080	56,31	080	58,31	080	66,35	080
9			58,31	090	61,33	090	63,36	090		
10			53,28	100	56,31	100	58,31	100	66,35	100
11					61,33	110	63,36	110		
12					56,31	120	58,31	120	66,35	120
13					61,33	130	63,36	130		
14					56,31	140	58,31	140	66,35	140
15					61,33	150	63,36	150		
16					56,31	160	58,31	160	66,35	160
17							63,36	170		
18							58,31	180	66,35	180
19							63,36	190		
20							58,31	200	66,35	200
22									73,40	220
25									66,35	250

ER precision collet, sealed with coolant channels, for precision collet chuck

- Similar to DIN ISO 15488-A
- 8 slotted
- Coloured ring as identification of precision collet

Centro-P Coated | **ER-A 2 µm**



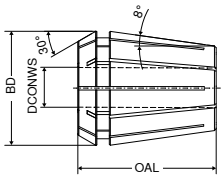


DCONWS	BD = 16,7 OAL = 27,5 425 E / ER16		BD = 25,7 OAL = 34 429 E / ER25		BD = 32,7 OAL = 40 469 E / ER32		BD = 40,7 OAL = 46 471 E / ER40	
	Y8		Y8		Y8		Y8	
	Article no. 84 548 ...		Article no. 84 549 ...		Article no. 84 550 ...		Article no. 84 551 ...	
mm	EUR		EUR		EUR		EUR	
4	78,40	040	83,44	040	86,48	040		
6	78,40	060	83,44	060	86,48	060		
8	78,40	080	83,44	080	86,48	080		
10			83,44	100	86,48	100	99,51	100
12			83,44	120	86,48	120	99,51	120
14			83,44	140	86,48	140		
16					86,48	160	99,51	160
18					86,48	180		
20					86,48	200	99,51	200
25							99,51	250

ER precision collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ 12 times slotted
- ▲ Double taper collet

Coated | **ER-B 5 µm**





DCONWS mm		BD = 11,5 OAL = 18 4008 E / ER11		BD = 17 OAL = 27,5 426 E / ER16		BD = 21 OAL = 31,5 428 E / ER20		BD = 26 OAL = 34 430 E / ER25		BD = 33 OAL = 40 470 E / ER32		BD = 41 OAL = 46 472 E / ER40	
		Y8		Y8		Y8		Y8		Y8		Y8	
		Article no. 84 576 ...		Article no. 84 578 ...		Article no. 84 579 ...		Article no. 84 580 ...		Article no. 84 581 ...		Article no. 84 582 ...	
		EUR		EUR		EUR		EUR		EUR		EUR	
1,0		25,16	010	24,40	010	25,15	010 1)	26,49	010 1)				
1,5		25,16	015	24,40	015 1)	25,15	015 1)	26,49	015 1)				
2,0		25,16	020	24,40	020	25,15	020	26,49	020	28,00	020 1)		
2,5		25,16	025	24,40	025 1)	25,15	025 1)	26,49	025	28,00	025 1)		
3,0		20,40	030	19,25	030	19,91	030	20,40	030	21,73	030	37,70	030 1)
3,5		20,40	035										
4,0		20,40	040	19,25	040	19,91	040	20,40	040	21,73	040	28,03	040
4,5		20,40	045										
5,0		20,40	050	19,25	050	19,91	050	20,40	050	21,73	050	28,03	050
5,5		20,40	055										
6,0		20,40	060	19,25	060	19,91	060	20,40	060	21,73	060	28,03	060
6,5		20,40	065										
7,0		20,40	070	19,25	070	19,91	070	20,40	070	21,73	070	28,03	070
8,0				19,25	080	19,91	080	20,40	080	21,73	080	28,03	080
9,0				19,25	090	19,91	090	20,40	090	21,73	090	28,03	090
10,0				19,25	100	19,91	100	20,40	100	21,73	100	28,03	100
11,0						19,91	110	20,40	110	21,73	110	28,03	110
12,0						19,91	120	20,40	120	21,73	120	28,03	120
13,0						19,91	130	20,40	130	21,73	130	28,03	130
14,0								20,40	140	21,73	140	28,03	140
15,0								20,40	150	21,73	150	28,03	150
16,0								20,40	160	21,73	160	28,03	160
17,0										21,73	170	28,03	170
18,0										21,73	180	28,03	180
19,0										21,73	190	28,03	190
20,0										21,73	200	28,03	200
21,0												28,03	210
22,0												28,03	220
23,0												28,03	230
24,0												28,03	240
25,0												28,03	250
26,0												28,03	260
	Set in wooden box	301,60	999	219,20	999	267,50	999	337,90	999	422,30	999	683,70	999

1) Not included in the set

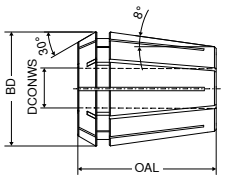
Clamping range covered: up to Ø 2 mm = 0.5 mm, from Ø 2.5 mm = 1 mm

16

ER collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ 12 times slotted
- ▲ Double taper clamping

ER-B
10 µm





DCONWS		BD = 8,5 OAL = 13,6 4004 E / ER08		BD = 17 OAL = 27,5 426 E / ER16		BD = 26 OAL = 34 430 E / ER25		BD = 33 OAL = 40 470 E / ER32	
		Y8		Y8		Y8		Y8	
		Article no. 84 574 ...		Article no. 83 665 ...		Article no. 83 667 ...		Article no. 83 668 ...	
mm		EUR		EUR		EUR		EUR	
1,0		27,05	010 [1]						
1,0				19,57	010				
1,5		27,05	015 [1]						
2,0				19,57	020	21,37	020		
2,0		27,05	020 [1]						
2,5		27,05	025 [1]						
3,0		22,63	030 [1]						
3,0				15,53	030	16,31	030	17,55	030
3,5		22,63	035 [1]						
4,0		22,63	040 [1]						
4,0				15,53	040	16,31	040	17,55	040
4,5		22,63	045 [1]						
5,0		22,63	050 [1]						
5,0				15,53	050	16,31	050	17,55	050
6,0				15,53	060	16,31	060	17,55	060
7,0				15,53	070	16,31	070	17,55	070
8,0				15,53	080	16,31	080	17,55	080
9,0				15,53	090	16,31	090	17,55	090
10,0				15,53	100	16,31	100	17,55	100
11,0						16,31	110	17,55	110
12,0						16,31	120	17,55	120
13,0						16,31	130	17,55	130
14,0						16,31	140	17,55	140
15,0						16,31	150	17,55	150
16,0						16,31	160	17,55	160
17,0								17,55	170
18,0								17,55	180
19,0								17,55	190
20,0								17,55	200
	Set in wooden box	238,30	999 [1]						

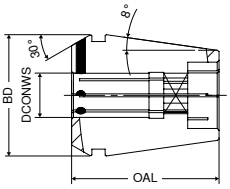
1) Type Coated - coated collet

Clamping range covered: up tp Ø 2 mm = 0.5 mm, from Ø 3 mm = 1 mm

ER precision tap collet

- Similar to DIN ISO 15488-A
- 8 slotted
- For Centro-P and standard collet chucks
- $p_{max.}$ = 120 bar

Coated **ER-A 10 µm**



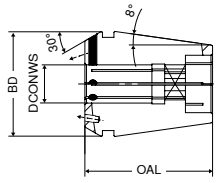


DCONWS	BD = 16,7 OAL = 27,5 4031 E / ER16		BD = 25,7 OAL = 34 4282 E / ER25		BD = 32,7 OAL = 40 4537 E / ER32	
	Y8		Y8		Y8	
	Article no. 84 531 ...		Article no. 84 533 ...		Article no. 84 534 ...	
mm	EUR		EUR		EUR	
2,8	50,70	028				
3,5	43,25	035	47,47	035		
4,0	43,25	040	47,47	040	52,20	040
4,5	43,25	045	47,47	045	52,20	045
6,0	43,25	060	47,47	060	52,20	060
7,0	43,25	070	47,47	070	52,20	070
8,0	43,25	080	47,47	080	52,20	080
9,0	43,25	090	47,47	090	52,20	090
10,0			47,47	100	52,20	100
11,0			47,47	110	52,20	110
12,0			47,47	120	52,20	120
14,0			47,47	140	52,20	140
16,0			47,47	160	52,20	160
18,0					52,20	180
20,0					52,20	200

ER precision collet, sealed with coolant channels

- Similar to DIN ISO 15488-A
- 8 slotted
- For Centro-P and standard collet chucks

Coated **ER-A 10 µm**



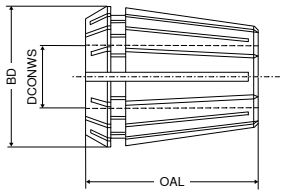


DCONWS	BD = 16,7 OAL = 27,5 4537 E / ER16		BD = 25,7 OAL = 34 4537 E / ER25		BD = 32,7 OAL = 40 4537 E / ER32	
	Y8		Y8		Y8	
	Article no. 84 567 ...		Article no. 84 568 ...		Article no. 84 569 ...	
mm	EUR		EUR		EUR	
3,5	69,39	035				
4,5	69,39	045	76,41	045	82,44	045
6,0	69,39	060	76,41	060	82,44	060
7,0	69,39	070	76,41	070	82,44	070
8,0	69,39	080	76,41	080	82,44	080
9,0			76,41	090	82,44	090
10,0			76,41	100	82,44	100
11,0			76,41	110	82,44	110
12,0			76,41	120	82,44	120
14,0			76,41	140	82,44	140
16,0					82,44	160
18,0					82,44	180
20,0					82,44	200

ER precision collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ Double taper collet
- ▲ 16 times slotted

ER-B
20 µm





DCONWS		BD = 17 OAL = 27,5 426 E / ER16		BD = 21 OAL = 31,5 428 E / ER20		BD = 26 OAL = 34 430 E / ER25		BD = 33 OAL = 40 470 E / ER32		BD = 41 OAL = 46 472 E / ER40	
		Y8		Y8		Y8		Y8		Y8	
		Article no. 82 673 ...		Article no. 82 674 ...		Article no. 82 675 ...		Article no. 82 676 ...		Article no. 82 677 ...	
mm		EUR		EUR		EUR		EUR		EUR	
1		15,62	01000	16,15	01000 [1]						
2		15,62	02000	16,15	02000 [1]	16,77	02000 [1]				
3		12,69	03000	11,74	03000	12,58	03000	13,53	03000	17,09	03000
4		12,69	04000	11,74	04000	12,58	04000	13,53	04000	17,09	04000
5		12,69	05000	11,74	05000	12,58	05000	13,53	05000	17,09	05000
6		12,69	06000	11,74	06000	12,58	06000	13,53	06000	17,09	06000
7		12,69	07000	11,74	07000	12,58	07000	13,53	07000	17,09	07000
8		12,69	08000	11,74	08000	12,58	08000	13,53	08000	17,09	08000
9		12,69	09000	11,74	09000	12,58	09000	13,53	09000	17,09	09000
10		12,69	10000	11,74	10000	12,58	10000	13,53	10000	17,09	10000
11				11,74	11000	12,58	11000	13,53	11000	17,09	11000
12				11,74	12000	12,58	12000	13,53	12000	17,09	12000
13				11,74	13000	12,58	13000	13,53	13000	17,09	13000
14						12,58	14000	13,53	14000	17,09	14000
15						12,58	15000	13,53	15000	17,09	15000
16						12,58	16000	13,53	16000	17,09	16000
17								13,53	17000	17,09	17000
18								13,53	18000	17,09	18000
19								13,53	19000	17,09	19000
20								13,53	20000	17,09	20000
21										17,09	21000
22										17,09	22000
23										17,09	23000
24										17,09	24000
25										17,09	25000
26										17,09	26000
	Set in wooden box	140,60	99900	151,00	99900	198,20	99900	243,30	99900	411,10	99900

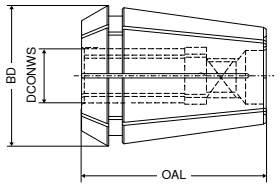
1) Not included in the set

Clamping range covered: up to Ø 3 mm = 0.5 mm, from Ø 4 mm = 1 mm

ER collet with internal square

- DIN ISO 15488-A (old DIN 6499-A)
- 8 times slotted
- Double taper collets for holding taps on synchronised spindle machines, without compensating lengths

ER-A
15 µm





DCONWS	BD = 25,7 OAL = 34 430 E / ER25		BD = 32,7 OAL = 40 470 E / ER32		BD = 40,7 OAL = 46 472 E / ER40	
	Y8		Y8		Y8	
	Article no. 82 650 ...		Article no. 82 651 ...		Article no. 82 652 ...	
mm	EUR		EUR		EUR	
4,5	33,24	04500	36,39	04500		
5,5	33,24	05500	36,39	05500		
6,0	33,24	06000	36,39	06000		
7,0	33,24	07000	36,39	07000	43,52	07000
8,0	33,24	08000	36,39	08000	43,52	08000
9,0	33,24	09000	36,39	09000	43,52	09000
10,0	33,24	10000	36,39	10000	43,52	10000
11,0	33,24	11000	36,39	11000	43,52	11000
12,0	33,24	12000	36,39	12000	43,52	12000
14,0			36,39	14000	43,52	14000
16,0			36,39	16000	43,52	16000
18,0					43,52	18000
20,0					43,52	20000

Wooden boxes for collets

- For collets form A+B

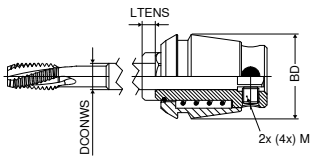


Size	Piece	Y8 Article no. 83 689 ...	
		EUR	
4004 E / ER08	9	14,47	008
4008 E / ER11	13	14,47	011
426 E / ER16	10	20,77	116
428 E / ER20	11	23,07	020
430 E / ER25	14	25,90	025
470 E / ER32	18	25,90	032
472 E / ER40	24	32,61	040

Tapping Collet Form ET (ER) with length compensation

- DIN ISO 15488 (old DIN 6499)
- With pull out length compensation (LTENS)
- The spring force is adapted to the thread size
- Anti-rotation by 2 and/or 4 clamping screws on the shank square drive

ER
10 µm





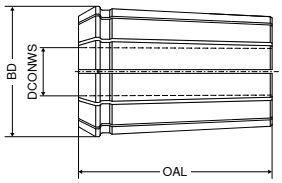
	BD = 17 LTENS = 7 426 E / ER16		BD = 21 LTENS = 7 428 E / ER20		BD = 26 LTENS = 8 430 E / ER25		BD = 33 LTENS = 10 470 E / ER32		BD = 41 LTENS = 13 472 E / ER40	
	Y7		Y7		Y7		Y7		Y7	
DCONWS	**Article no.** **80 661 ...**		**Article no.** **80 662 ...**		**Article no.** **80 663 ...**		**Article no.** **80 664 ...**		**Article no.** **80 665 ...**	
mm	**EUR**		**EUR**		**EUR**		**EUR**		**EUR**	
2,2	87,48	**022**	87,48	**022**						
2,5	87,48	**025**	87,48	**025**	91,48	**025**				
2,8	87,48	**028**	87,48	**028**	91,48	**028**				
3,0	87,48	**030**	87,48	**030**	91,48	**030**				
3,5	87,48	**035**	87,48	**035**	91,48	**035**				
4,0	87,48	**040**	87,48	**040**	91,48	**040**				
4,5	87,48	**045**	87,48	**045**	91,48	**045**	97,51	**045**		
5,0							97,51	**050**		
5,5	87,48	**055**	87,48	**055**	91,48	**055**	97,51	**055**		
6,0	87,48	**060**	87,48	**060**	91,48	**060**	97,51	**060**	112,60	**060**
7,0			87,48	**070**	91,48	**070**	97,51	**070**	112,60	**070**
8,0					91,48	**080**	97,51	**080**	112,60	**080**
9,0					91,48	**090**	97,51	**090**	112,60	**090**
10,0					91,48	**100**	97,51	**100**	112,60	**100**
11,0							97,51	**110**	112,60	**110**
12,0							97,51	**120**	112,60	**120**
14,0									112,60	**140**
16,0									112,60	**160**

When using CNC machines apply canned cycles with a feed rate or pitch of only 95 % with small threads and up to 99 % with large threads. In this way when reversing the rotation of the spindle an optimum length compensation in both directions is guaranteed.

OZ Precision collet for precision collet chuck

- DIN ISO 10897-B (old DIN 6388-B)
- Ø = 10 mm 10 slots, Ø > 10 mm 12 slots
- Double angle collets

OZ-B 3 µm | **Centro-P**





BD = 35,05
OAL = 52
462 E / OZ

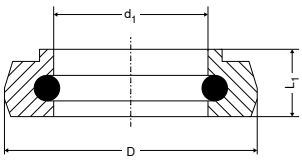
DCONWS	Y8 Article no. 83 660 ...	
mm	EUR	
3	50,29	030
4	50,29	040
6	50,29	060
8	50,29	080
10	50,29	100
12	50,29	120
14	50,29	140
16	50,29	160
18	50,29	180
20	50,29	200
25	50,29	250

Clamping range covered: H10 corresponding to shank Ø DCONWS

Sealing ring for OZ Collet Chuck 462E

- For use for sealing tools with through coolant
- Seal diameter: Nominal diameter - 0.5 mm
- Use up to 150 bar

OZ-B 5 µm





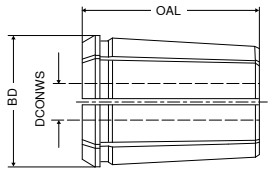
D = 31
L_1 = 4
462E

d_1	Y8 Article no. 83 675 ...	
mm	EUR	
4	20,30	040
5	20,30	050
6	20,30	060
8	20,30	080
10	20,30	100
12	20,30	120
14	20,30	140
16	20,30	160
18	20,30	180
20	20,30	200
22	20,30	220
25	20,30	250

16

OZ-collets

- DIN ISO 10897-B (old DIN 6388-B)
- Ø = 10 mm 10 slots, Ø > 10 mm 12 slots



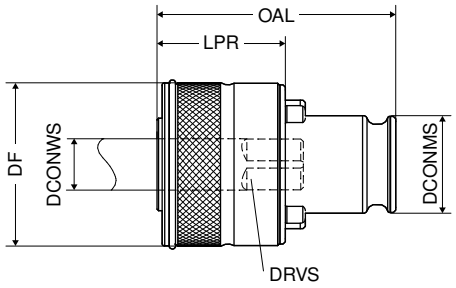


	OZ-B 6 µm		OZ-B 6 µm		OZ-B 10 µm		OZ-B 20 µm		OZ-B 20 µm		OZ-B 20 µm	
	BD = 25,5 OAL = 40 415 E / OZ		BD = 35,05 OAL = 52 462 E / OZ		BD = 43,7 OAL = 60 467 E / OZ		BD = 25,5 OAL = 40 415 E / OZ		BD = 35,05 OAL = 52 462 E / OZ		BD = 43,7 OAL = 60 467 E / OZ	
	Y8		Y8		Y8		Y8		Y8		Y8	
DCONWS	Article no. 83 651 ...		Article no. 83 652 ...		Article no. 83 653 ...		Article no. 82 653 ...		Article no. 82 654 ...		Article no. 82 655 ...	
mm	EUR		EUR		EUR		EUR		EUR		EUR	
2,0							22,55	02000	25,69	02000		
2,5							22,55	02500	25,69	02500		
3,0	22,52	030					18,04	03000	21,60	03000		
3,5							18,04	03500	21,60	03500		
4,0	22,52	040	26,50	040			18,04	04000	21,60	04000	33,76	04000
4,5							18,04	04500	21,60	04500	33,76	04500
5,0	22,52	050	26,50	050			18,04	05000	21,60	05000	33,76	05000
5,5							18,04	05500	21,60	05500	33,76	05500
6,0	22,52	060	26,50	060			18,04	06000	21,60	06000	33,76	06000
6,5							18,04	06500	21,60	06500	33,76	06500
7,0							18,04	07000	21,60	07000	33,76	07000
7,5							18,04	07500	21,60	07500	33,76	07500
8,0	22,52	080	26,50	080			18,04	08000	21,60	08000	33,76	08000
8,5							18,04	08500	21,60	08500	33,76	08500
9,0							18,04	09000	21,60	09000	33,76	09000
9,5							18,04	09500	21,60	09500	33,76	09500
10,0	22,52	100	26,50	100	34,29	100	18,04	10000	21,60	10000	33,76	10000
10,5							18,04	10500	21,60	10500	33,76	10500
11,0							18,04	11000	21,60	11000	33,76	11000
11,5							18,04	11500	21,60	11500	33,76	11500
12,0	22,52	120	26,50	120	34,29	120	18,04	12000	21,60	12000	33,76	12000
12,5							18,04	12500	21,60	12500	33,76	12500
13,0							18,04	13000	21,60	13000	33,76	13000
13,5							18,04	13500	21,60	13500	33,76	13500
14,0			26,50	140	34,29	140	18,04	14000	21,60	14000	33,76	14000
14,5							18,04	14500	21,60	14500	33,76	14500
15,0							18,04	15000	21,60	15000	33,76	15000
15,5							18,04	15500	21,60	15500	33,76	15500
16,0	22,52	160	26,50	160	34,29	160	18,04	16000	21,60	16000	33,76	16000
16,5									21,60	16500	33,76	16500
17,0									21,60	17000	33,76	17000
17,5									21,60	17500	33,76	17500
18,0			26,50	180	34,29	180			21,60	18000	33,76	18000
18,5									21,60	18500	33,76	18500
19,0									21,60	19000	33,76	19000
19,5									21,60	19500	33,76	19500
20,0			26,50	200	34,29	200			21,60	20000	33,76	20000
20,5									21,60	20500	33,76	20500
21,0									21,60	21000	33,76	21000
21,5									21,60	21500	33,76	21500
22,0									21,60	22000	33,76	22000
22,5									21,60	22500	33,76	22500
23,0									21,60	23000	33,76	23000
23,5									21,60	23500	33,76	23500
24,0									21,60	24000	33,76	24000
24,5									21,60	24500	33,76	24500
25,0			26,50	250	34,29	250			21,60	25000	33,76	25000
25,5											33,76	25500
26,0											33,76	26000
26,5											33,76	26500
27,0											33,76	27000
27,5											33,76	27500
28,0											33,76	28000
28,5											33,76	28500
29,0											33,76	29000
29,5											33,76	29500
30,0					34,29	300					33,76	30000
30,5											33,76	30500
31,0											33,76	31000
31,5											33,76	31500
32,0					34,29	320					33,76	32000

The collet has a clamping range of 0.5 mm (+0.1 / -0.4 mm)

Quick change tap adapter with overload clutch

- ▲ Adapter with adjustable overload clutch
- ▲ For use with taps







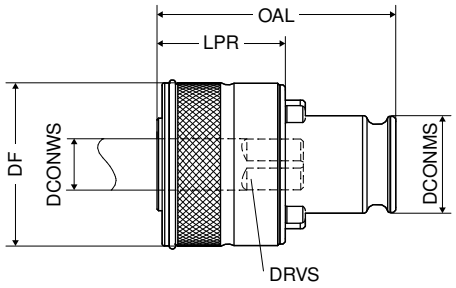
A

Y8

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Article no. 83 612 ...	
	mm	mm			mm	mm	mm	mm	EUR	
01	2,8	2,1	M2		33	19	46,5	25	51,28	100
01	2,8	2,1	M2,5		33	19	46,5	25	51,28	101
01	3,5	2,7	M3		33	19	46,5	25	51,28	102
01	4,0	3,0	M3,5		33	19	46,5	25	51,28	103
01	4,5	3,4	M4		33	19	46,5	25	51,28	104
01	6,0	4,9	M4,5		33	19	46,5	25	51,28	105
01	6,0	4,9	M5		33	19	46,5	25	51,28	106
01	4,5	3,4		M6	33	19	46,5	25	51,28	107
01	6,0	4,9	M6		33	19	46,5	25	51,28	108
01	5,5	4,3		M7	33	19	46,5	25	51,28	109
01	7,0	5,5	M7		33	19	46,5	25	51,28	110
01	6,0	4,9		M8	33	19	46,5	25	51,28	111
01	8,0	6,2	M8		33	19	46,5	25	51,28	112
01	9,0	7,0	M9		33	19	46,5	25	51,28	113
01	7,0	5,5		M10	33	19	46,5	25	51,28	114
01	10,0	8,0	M10		33	19	46,5	25	51,28	115
01	8,0	6,2		M11	33	19	46,5	25	51,28	116
01	9,0	7,0		M12	33	19	46,5	25	51,28	117
02	6,0	4,9	M4,5 - M6		50	31	69,0	34	66,69	200
02	6,0	4,9	M7 (DIN 352)		50	31	69,0	34	66,69	201
02	7,0	5,5	M7		50	31	69,0	34	66,69	202
02	6,0	4,9		M8	50	31	69,0	34	66,69	203
02	8,0	6,2	M8		50	31	69,0	34	66,69	204
02	9,0	7,0	M9		50	31	69,0	34	66,69	205
02	7,0	5,5		M10	50	31	69,0	34	66,69	206
02	10,0	8,0	M10		50	31	69,0	34	66,69	207
02	8,0	6,2		M11	50	31	69,0	34	66,69	208
02	9,0	7,0		M12	50	31	69,0	34	66,69	209
02	11,0	9,0		M14	50	31	69,0	34	66,69	210
02	12,0	9,0		M16	50	31	69,0	34	66,69	211
02	14,0	11,0		M18	50	31	69,0	34	66,69	212
02	16,0	12,0		M20	50	31	69,0	34	66,69	213

Quick change tap adapter with overload clutch, with through coolant

- Adapter with adjustable overload clutch
- For use with taps







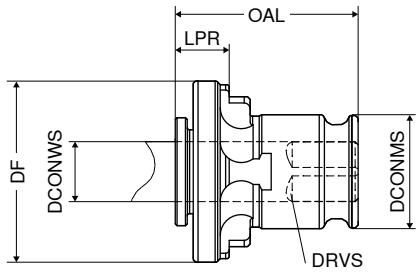
AD

Y8

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Article no. 83 616 ...
	mm	mm			mm	mm	mm	mm	EUR
01	3,5	2,7	M3	M4,5 - M5	33	19	46,5	25	88,49 100
01	4,5	3,4	M4	M6	33	19	46,5	25	88,49 102
01	5,5	4,3		M7	33	19	46,5	25	88,49 104
01	6,0	4,9	M4,5 - M6	M8	33	19	46,5	25	88,49 106
01	7,0	5,5	M7	M10	33	19	46,5	25	88,49 108
01	8,0	6,2	M8	M11	33	19	46,5	25	88,49 110
01	9,0	7,0	M9	M12	33	19	46,5	25	88,49 112
01	10,0	8,0	M10		33	19	46,5	25	88,49 114
01	11,0	9,0		M14	33	19	46,5	25	88,49 116
02	6,0	4,9	M4,5 - M6	M8	50	31	69,0	34	106,90 200
02	7,0	5,5	M7	M10	50	31	69,0	34	106,90 202
02	8,0	6,2	M8	M11	50	31	69,0	34	106,90 204
02	9,0	7,0	M9	M12	50	31	69,0	34	106,90 206
02	10,0	8,0	M10		50	31	69,0	34	106,90 208
02	11,0	9,0		M14	50	31	69,0	34	106,90 210
02	12,0	9,0	M12	M16	50	31	69,0	34	106,90 212
02	14,0	11,0		M18	50	31	69,0	34	106,90 214
02	16,0	12,0		M20	50	31	69,0	34	106,90 216

Quick change tap adapter

- Normal version without overload clutch
- For mounting taps
- For right-hand and left-hand threads





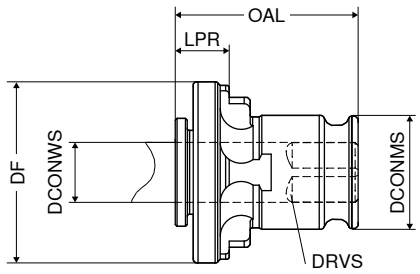


A

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Y8 Article no. 83 610 ...	
	mm	mm			mm	mm	mm	mm	EUR	
01	3,5	2,7	M3		30	19	28,5	7	20,55	**100**
01	4,5	3,4	M4		30	19	28,5	7	20,55	**101**
01	4,0	3,0	M3,5		30	19	28,5	7	20,55	**102**
01	2,8	2,1	M2 - M2,6		30	19	28,5	7	20,55	**103**
01	5,5	4,3		M7	30	19	28,5	7	20,55	**104**
01	6,0	4,9	M4,5 - M6	M8	30	19	28,5	7	20,55	**105**
01	7,0	5,5	M7	M10	30	19	28,5	7	20,55	**106**
01	8,0	6,2	M8	M11	30	19	28,5	7	20,55	**107**
01	9,0	7,0	M9	M12	30	19	28,5	7	20,55	**108**
01	10,0	8,0	M10		30	19	28,5	7	20,55	**109**
01	11,0	9,0		M14	30	19	28,5	7	20,55	**110**
02	6,0	4,9	M4,5 - M6		46	31	46,0	11	28,41	**200**
02	7,0	5,5	M7		46	31	46,0	11	28,41	**201**
02	8,0	6,2	M8		46	31	46,0	11	28,41	**202**
02	9,0	7,0	M9		46	31	46,0	11	28,41	**203**
02	10,0	8,0	M10		46	31	46,0	11	28,41	**204**
02	11,0	9,0		M14	46	31	46,0	11	28,41	**205**
02	12,0	9,0		M16	46	31	46,0	11	28,41	**206**
02	14,0	11,0		M18	46	31	46,0	11	28,41	**207**
02	16,0	12,0		M20	46	31	46,0	11	28,41	**208**
02	18,0	14,5		M22 - M24	46	31	46,0	11	28,41	**209**

Quick change tap adapter, with through coolant

- Normal version without overload clutch
- For mounting taps
- For right-hand and left-hand threads



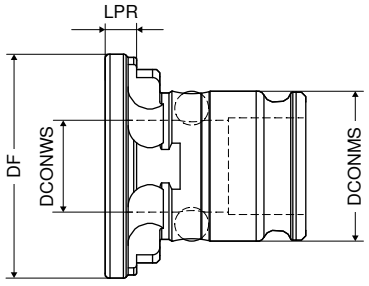


AD

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Y8 Article no. 83 614 ...	
	mm	mm			mm	mm	mm	mm	EUR	
01	3,5	2,7		M4,5 - M5	30	19	28,5	7	39,84	100
01	4,5	3,4	M4	M6	30	19	28,5	7	39,84	102
01	5,5	4,3		M7	30	19	28,5	7	39,84	104
01	6,0	4,9	M4,5 - M6	M8	30	19	28,5	7	39,84	106
01	7,0	5,5	M7	M10	30	19	28,5	7	39,84	108
01	8,0	6,2	M8	M11	30	19	28,5	7	39,84	110
01	9,0	7,0	M9	M12	30	19	28,5	7	39,84	112
01	10,0	8,0	M10		30	19	28,5	7	39,84	114
02	6,0	4,9	M4,5 - M6	M8	46	31	46,0	11	52,63	200
02	7,0	5,5	M7	M10	46	31	46,0	11	52,63	202
02	8,0	6,2	M8	M11	46	31	46,0	11	52,63	204
02	9,0	7,0	M9	M12	46	31	46,0	11	52,63	206
02	10,0	8,0	M10		46	31	46,0	11	52,63	208
02	11,0	9,0		M14	46	31	46,0	11	52,63	210
02	12,0	9,0	M12	M16	46	31	46,0	11	52,63	212
02	14,0	11,0		M18	46	31	46,0	11	52,63	214
02	16,0	12,0		M20	46	31	46,0	11	52,63	216

Reducing adapter for quick change adapters

- Reducing adapter for reducing size 02 to 01. In this way the clamping ranges can be extended to smaller sizes.



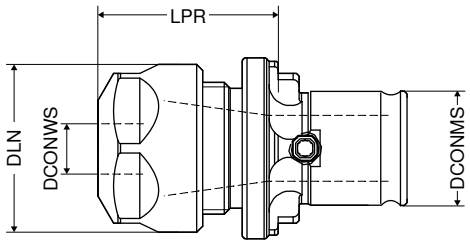


AD

SZID	DF	DCONMS	DCONWS	LPR	Y8 Article no. 83 624 ...	
	mm	mm	mm	mm	EUR	
02	46	31	19	8,5	67,94	200

Quick change tap adapters

▲ Adapters for collets ER 16 / ER 25





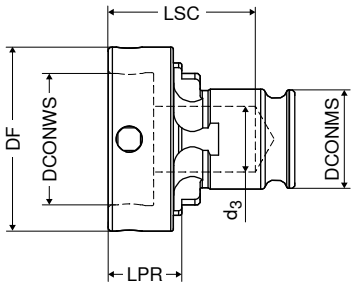


AD

SZID	DCONWS	DLN	DCONMS	LPR	for collet	Y8 Article no. 83 618 ...	
	mm	mm	mm	mm		EUR	
01	1 - 10	28	19	29,5	ER 16	85,98	010
02	2 - 16	42	31	38,5	ER 25	121,60	016

Quick change adapter for dies

▲ For mounting dies according to DIN 223







A

SZID	for size	cutting range	DF	DCONMS	DCONWS	LPR	d_3	LSC	Y8 Article no. 83 622 ...	
			mm	mm	mm	mm	mm	mm	EUR	
01	16 x 5	M1 - M4	25	19	16	9	12,5	23	95,00	116
01	20 x 5	M3 - M4	30	19	20	9	12,5	23	95,00	120
01	20 x 7	M4,5 - M6	30	19	20	11	12,5	25	95,00	121
01	25 x 9	M7 - M9	35	19	25	14	12,5	28	95,00	125
01	30 x 11	M10 - M11	40	19	30	16	12,5	30	95,00	130
01	38 x 10	M12x1 - M15x1,5	48	19	38	15	14,2	29	95,00	138
01	38 x 14	M12 - M14	48	19	38	19	14,2	33	95,00	139
02	20 x 5	M3 - M4	30	31	20	22	15,0	57	133,20	220
02	20 x 7	M4,5 - M6	30	31	20	22	15,0	57	133,20	221
02	25 x 9	M7 - M9	35	31	35	22	15,0	57	133,20	225
02	30 x 11	M10 - M11	40	31	30	22	22,0	57	133,20	230
02	38 x 10	M12x1 - M15x1,5	48	31	38	22	22,0	57	133,20	238
02	38 x 14	M12 - M14	48	31	38	25	22,0	60	133,20	239
02	45 x 14	M16x1 - M20x2	57	31	45	29	22,0	64	133,20	245
02	45 x 14	M16 - M20	57	31	45	29	22,0	64	133,20	246

16

Driven Tools

CERATIZIT offers an extensive range of driven tool holders to suit the turrets and machines of the leading manufacturers. There are virtually no limits to the types available. Below is a small selection of our holder portfolio.

Examples from our driven tooling range



Axial drilling and milling head



Radial drilling and milling head



Double radial drilling and milling head



Rear offset radial drilling and milling head



Double axial drilling and milling head



Offset axial drilling and milling head



Swivel head



Modular milling

Summary of machine turret manufacturers and interfaces for which CERATIZIT can supply driven tools

- Sauter
- Baruffaldi
- Duplomatic
- DIN1809
- DIN5480
- DIN5482
- Baruffaldi Toem
- Bevel gear milling
- Spline / tooth milling
- BMT (bolt on)

Technical Advice

Are you interested in our driven tools ? If so please contact your technical sales engineer who will be glad to assist you. Alternatively, you can contact our office based internal technical sales engineers who can be reached on our freephone number.

Enquiry Form

Should you have questions about driven tools you can find a detailed questionnaire on our website in the download area. Carefully complete the form and send it via e-mail or printed fax.

Modular quick-change system for driven tools

You want to optimize your setup time? CERATIZIT offers you several options!
With each axial and radial driven tool you are prepared through the exchange of different modules for different machining demands.

Varia VX

The new quick change system for heavy duty machining



The face & taper contact interface ensures maximum concentricity.
The torque is transmitted via a form-fitting polygon, which can transmit up to 200 Nm.

Clamping and releasing takes place via a segmented gear wheel equipped with 3 multifunctional cams. When tightened with a radially mounted clamping screw, the 3-point clamping pulls the tool evenly into its operating position. When releasing the tool force is applied mechanically via a sliding cam and the tool is released for removal from the adapter.

The advantages at a glance

- Cutting tools are preset off the machine
- Quick change thanks to only one clamping point
- No risk of injury when changing tools
- Transverse force-free clamping of the tools
- Safe torque transmission
- No loose parts



System Preci-Flex® – The stable solution for long tool life and high surface quality

The internal cone of the driven tool is suitable for any commercial type ER collets.Through taper & face contact ≤ 0.01 mm system concentricity and ≤ 0.005 mm repeatability is achieved and four plane-side clamp screws achieve maximum system stability and rigidity.







The program includes base holders for the collet sizes ER20, ER25, ER32, ER40 and ER50 and collet holders with male or female nut, adapters Weldon, Whistle Notch, shrink, boring bars, Shell mill arbors, hydraulic chucks, Test arbors and blanks.
Also available for static VDI holders and rotating SK and HSK holders.

Solidfix® – The quick way to change (≤ 20 seconds), a module

Solidfix® Modules can be mounted with one hand. Simply insert the module, so that twisting the security bayonet retains the module. Tighten with an allen-key through 180 ° rotation.

Through centering taper and large square face a concentricity of ≤ 0.005 mm is obtained at 30 mm distance from the end face.

































The program includes basic holders in accordance with the collet sizes ER11M, ER16M, ER20, ER25, ER32 and ER40 and collet holders with male or female nut, Weldon, Whistle Notch, shrink, boring adapters, Shell mill arbors, hydraulic chucks, control pins, blanks and plugs. Also available for static VDI holders and rotating SK and HSK holders.

Modifix® – The universal solution for driven standard collet chucks

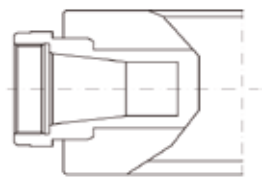
Modifix® adapters are available for both collet chucks with internal and external locknut.
You use your existing collet holder driven units and only require the relevant Modifix® adapter.
It offers high flexibility and low investment.

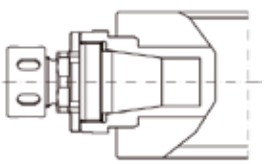


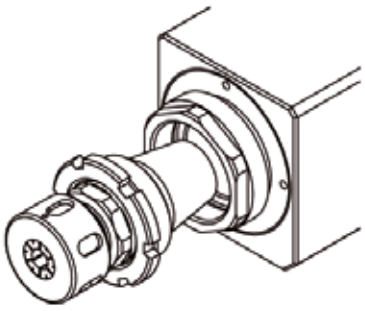
Modifix® for driven tools with internal threads



Modifix® for driven tools with external threads







The program includes adapters for the collet sizes ER20, ER25, ER32 and ER40.
Collet holders, Weldon tool holders and Shell mill arbors are available.

For orders please contact our your local Technical Sales Engineer or our Technicians in the office

Quick-Change

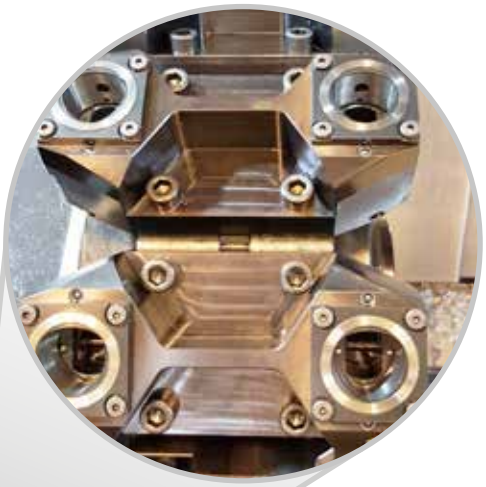


The tool holder range comprises both innovative and technologically proven solutions for all common CNC turning centres. We offer solutions that are perfectly tailored to the make of machine, regardless of whether the machine has a BMT, VDI or other connection type.

Every Quick-Change system has a standardised interface to DIN/ISO requirements and is available for HSK-T 40/63/100 and PSC 40/50/63 sizes. The tool change itself is carried out quickly and easily, minimising idle times and thus boosting productivity.



Tool holder single and straight





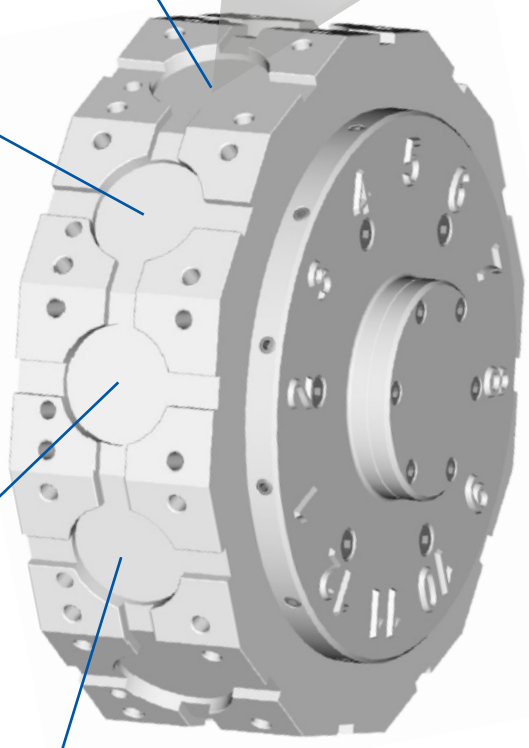
Tool holder double and straight



Single angle tool holder



Double angle tool holder



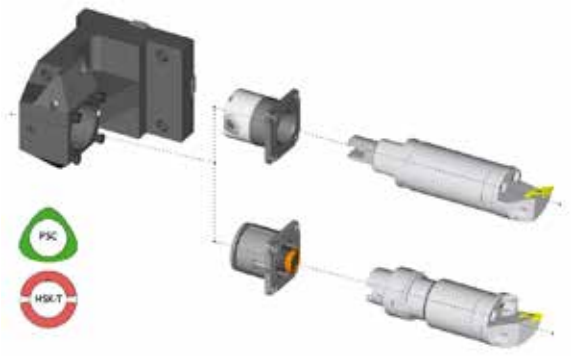
Turret BMT/VDI/...

16

HSK/PSC clamping units

The tool holders are fitted with either an HSK or PSC clamping unit.

Clamping units are available in sizes HSK 40/63/100 and PSC 40/50/63.

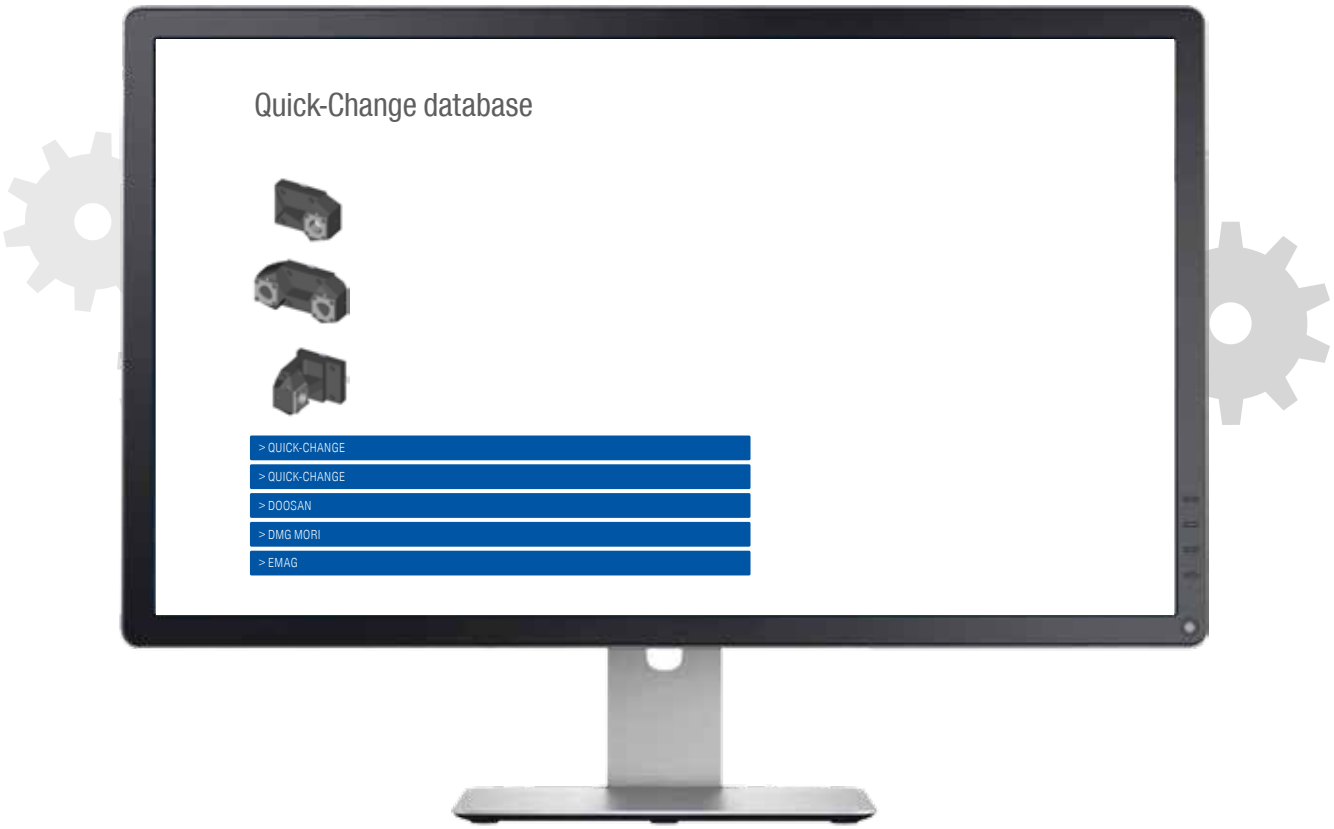


The toolholders permit the flexibility to be adapted to the customer's requirements.



Online database

Our Quick-Change tool holders are individually adapted to turning machines to ensure the greatest-possible levels of flexibility and efficiency. Using the online database, systems of previously specified machine types can be evaluated in order to obtain an initial overview.



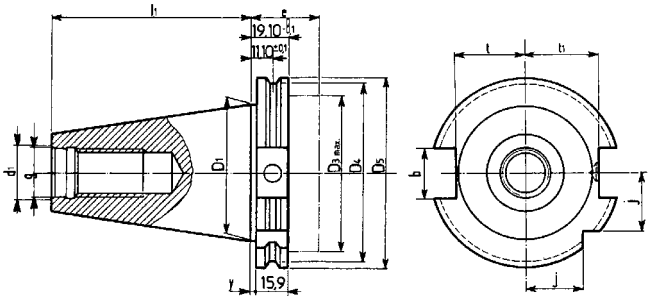
Information on enquiry process

To make the enquiry process as easy as possible, please use our enquiry form to enter the most important machine data and information on the machining process. Please fill in this form carefully and send it to us via email or fax.
→ **cutting.tools/en/download**

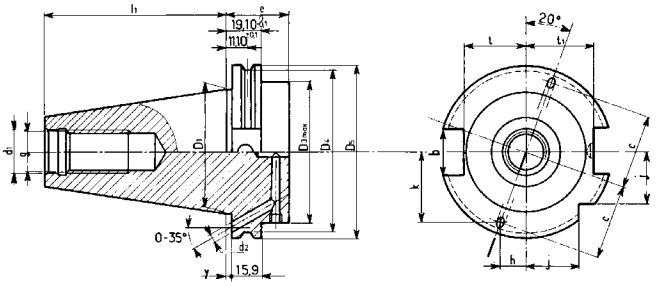
If you have any questions regarding the ordering process or the form itself, your Technical Sales Engineer will be happy to help.

Technical data for steep taper tools

DIN 69871 Form A

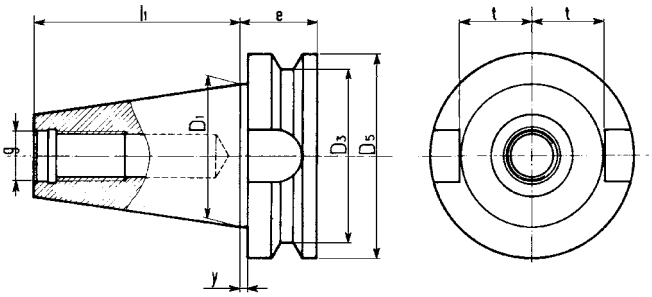


DIN 69871 Form B



	D_1 mm	$D_{3\,max}$ mm	D_4 mm	D_5 mm	$l_{10}^{+0,2}$ mm	g	d_1 H7 mm	e mm	y ±0,1 mm	t mm	t_1 mm	j mm	d_2 mm	h mm	k mm	c mm	b mm
SK 30	31,75	45	44,30	50	47,8	M 12	13	35	3,2	16,4	19	15					16,1
SK 40	44,45	50	56,25	63,55	68,4	M 16	17	35	3,2	22,8	25	18,5	4	9,2	25,4	27	16,1
SK 50	69,85	80	91,25	97,5	101,75	M 24	25	35	3,2	35,5	37,7	30	6	14,4	39,5	42	25,7

MAS-BT

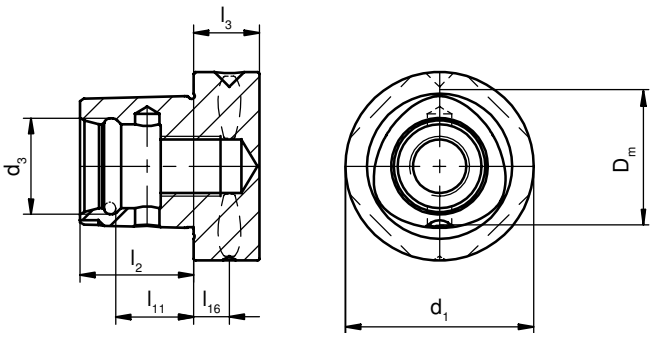


Maximum recommended rpm for steep taper toolholders:

SK / BT 30 to 20,000 $^1/_{min.}$
SK / BT 40 to 20,000 $^1/_{min.}$
SK / BT 50 to 16,000 $^1/_{min.}$

	D_1 mm	D_3 mm	D_5 mm	l_1 mm	g	e mm	t mm	y mm	b mm
BT 30	31,75	38	46	48,4	M 12	22	16,3	2	16,1
BT 40	44,45	53	63	65,4	M 16	27	22,5	2	16,1
BT 50	69,85	85	100	101,8	M 24	38	35,3	3,2	25,7

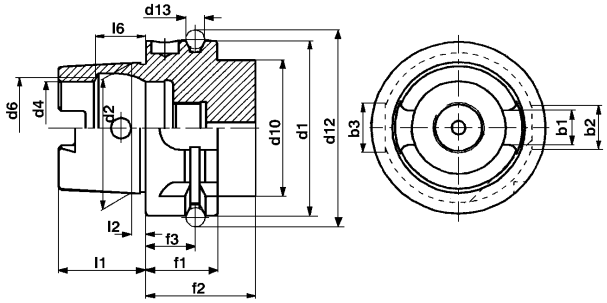
Technical Data for Polygon shank adapters



Shank size	d_1 mm	d_3 ±0,05 mm	l_2 ±0,1 mm	l_3 mm	l_{11} ±0,1 mm	l_{16} mm	D_m mm
32	32	16,5	19	15	13,5	9	22
40	40	20	24	20	17,5	12	28
50	50	24	30	20	22	12	35
63	63	32	38	22	26	12	44
80	80	38	48	30	34	12	55

Technical Data for HSK Adapters

HSK DIN 69893 A+C



Maximum rpm recommended for HSK adapters:

HSK-A 32 to 50.000 $^{1}/_{min.}$
HSK-A 40 to 42.000 $^{1}/_{min.}$
HSK-A 50 to 30.000 $^{1}/_{min.}$
HSK-A 63 to 25.000 $^{1}/_{min.}$
HSK-A 100 to 16.000 $^{1}/_{min.}$

	b_1 mm	b_2 mm	b_3 mm	d_1 mm	d_2 mm	d_4 mm	d_6 mm	d_{10} mm	d_{12} mm	d_{13} mm	f_1 mm	f_2 mm	f_3 mm	l_1 mm	l_2 mm	l_6 mm
HSK 32	7,05	7	9	32	24	17	19	26	37	4	20	35	16	16	3,2	8,92
HSK 40	8,05	9	11	40	30	21	23	34	45	4	20	35	16	20	4	11,42
HSK 50	10,54	12	14	50	38	26	29	42	59,3	7	26	42	18	25	5	14,13
HSK 63	12,54	16	18	63	48	34	37	53	72,3	7	26	42	18	32	6,3	18,13
HSK 100	20,02	20	22	100	75	53	58	88	109,75	7	29	45	20	50	10	28,56

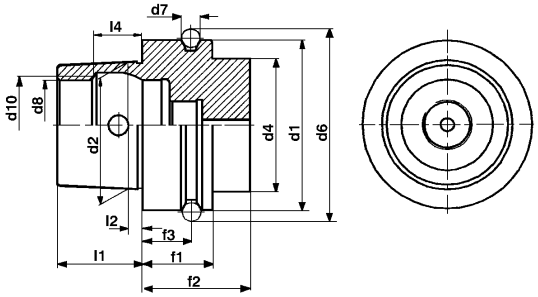
DIN 69893 Form A

- Applied for machining centres, milling and special machines with automatic tool change
- **Central axial coolant supply via the coolant pipe**
- Torque transmission via 2 driving grooves at the taper end
- 2 grooves on the flange for the tool magazine, positioning notch, bore for data storage medium DIN 69873 in the flange

DIN 69893 Form C

- Applied for machine spindles without automatic tool change as well as tool extensions and reducers
- **Central axial coolant supply via the coolant pipe**
- Torque transmission via 2 driving grooves at the taper end

HSK DIN 69893 E



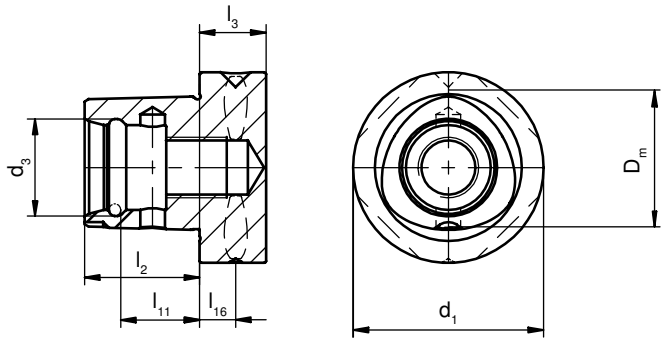
	d_1 mm	d_2 mm	d_4 mm	d_6 mm	d_7 mm	d_8 mm	d_{10} mm	f_1 mm	f_2 mm	f_3 mm	l_1 mm	l_2 mm	l_4 mm
HSK 40	40	30	34	45	4	21	23	20	35	16	20	4	11,42
HSK 50	50	38	42	59,3	7	26	29	26	42	18	25	5	14,13
HSK 63	63	48	53	72,3	7	34	37	26	42	18	32	6,3	18,13

DIN 69893 Form E

- Applied for high rpm (HSC) for high speed spindles with automatic tool change
- Rotation symmetrical, without driving grooves
- Torque transmission through friction
- **Possibility of central coolant supply via coolant pipe**

Technical Information for Polygon Shank Adapters

To dimensions of ISO 26623-1



Shank size	d_1	d_3 ± 0,05	l_2 ± 0,1	l_3	l_{11} ± 0,1	l_{16}	D_m
32	32	16,5	19	15	13,5	9	22
40	40	20	24	20	17,5	12	28
50	50	24	30	20	22	12	35
63	63	32	38	22	26	12	44
80	80	38	48	30	34	12	55

Advantages of the PSC interface

The repeatability of the PSC shank is ± 2 microns



The tapered polygon in conjunction with the tight tolerance provides backlash-free centering also acts as pull back. The PSC cone has very high rigidity and bending strength. The main advantages of this interface are the transmittable torque stability, the resistance against radial forces acting on the tool and the exact center height. This means high feed rates can be achieved on large material cross sections. The PSC interface is ideally suited for all machining operations such as drilling, turning and milling.

High Pressure Chuck – Ideal for the MonsterMill Solid Carbide Milling Cutters

HPC milling with optimum damping

High pressure clamping with optimum damping properties was the aim in the development of the high-pressure chuck. Here, all applications over a continuous operation test were covered over thousands of machining operations. In addition, extensive continuous pressure and positive pressure tests, and vibration measurements were carried out directly on the machine spindle.

The main technical characteristics of the high-pressure Milling Chuck are

- High damping properties
- Spindle-friendly
- Maximum stability and strength
- High holding force and torque transmission
- 3 µm radial run-out
- Balanced to G2,5 at $n_{max.}$ 25.000 1/min.
- Short tool change time
- No additional peripherals required
- MMS suitable
- Maintenance free



Clamping of shanks with flats possible with or without reduction sleeve

HSS shank DIN1835 and
Solid Carbide shank DIN6535



Clamping Force Comparison with Different Systems

This comparison shows the higher retention forces of the Milling Chuck. Especially with larger diameters high holding force is important when HPC machining so that the tool is not pulled out of the holder.
Milling Chuck now offers this process reliability.

The main applications for Milling Chuck

- HPC Milling
- HSC Milling
- Hard Machining
- Drilling
- Reaming

Key Benefits

- Increased Process Security
- Longer Tool Life
- Improved Surface Quality
- Extended spindle life

Shank diameter in mm	16	18	20	25	32
Holder Type	Maximum transmissible torque with shank tolerance h6 in Nm				
Shrink fit adapter	200	290	450	530	700
Standard hydraulic chucks	160	200	330	400	650
High Pressure Milling Chuck	280 - 380	360 - 450	550 - 650	650 - 750	800 - 890

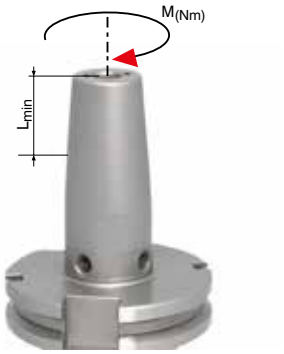
Minimum clamping depth the same as for hydraulic chucks

Transmittable torques and static clamping torques

Static clamping moments of the CentroP collet chuck with different torque values measured at the tightening nut

Clamping diameter (d1 h6)	2	3	3,5	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	mm
ER 16 torque moment 30 Nm	2	3,5	5																						Nm
ER 16 torque moment 50 Nm				12	20	30	45	60	72	80															Nm
ER 25 torque moment 40 Nm				10	20	40																			Nm
ER 25 torque moment 75 Nm							62	75	85	95															Nm
ER 25 torque moment 90 Nm											122	145	160	175	190	200									Nm
ER 32 torque moment 60 Nm				20	30	40																			Nm
ER 32 torque moment 120 Nm							75	90	110	120	135	150	160	180	190										Nm
ER 32 torque moment 140 Nm																220	240	260	280	300					Nm
ER 40 torque moment 70 Nm				60	75	90	100																		Nm
ER 40 torque moment 110 Nm								110	125	140	150														Nm
ER 40 torque moment 150 Nm												200	220	240	260	300	350								Nm
ER 40 torque moment 200 Nm																			420	440	460	480	515	530	Nm
OZ 462 E torque moment 200 Nm				10	35	55	75	95	120	140	160	185	205	230	250	270	295	315	340						Nm

Permissible transmitted torque (Md) for Hydraulic Chucks



For direct clamping

Clamping diameter (d1 h6)	6	8	10	12	14	16	18	20	25	32	mm
Md with shank at minimum size	20	30	47	80	100	160	200	330	400	650	Nm
Md with shank at maximum size	30	45	85	140	160	230	270	400	470	730	Nm

For clamping with reduction Ø 32 mm

Clamping diameter (d1 h6)	6	8	10	12	14	16	18	20	25	mm
Md with shank at minimum size	30	45	60	120	120	180	220	250	330	Nm
Md with shank at maximum size	45	65	110	170	170	230	300	320	440	Nm

For clamping with reduction Ø 20 mm

Clamping diameter (d1 h6)	3	4	5	6	8	10	12	14	16	mm
Md with shank at minimum size	6	9	16	30	55	90	120	135	190	Nm
Md with shank at maximum size	10	12	22	40	75	120	150	170	260	Nm

For clamping with reduction Ø 12 mm

Clamping diameter (d1 h6)	3	4	5	6	8	mm
Md with shank at minimum size	3	4	7	12	18	Nm
Md with shank at maximum size	4	8	12	20	26	Nm

Minimum shank clamping depths for hydraulic chucks

Shank diameter	6	8	10	12	14	16	18	20	25	32	mm
Minimum clamping depth	27	27	31	36	36	39	39	41	47	51	mm

Permissible transmitted torque (Md) for high pressure chuck



Minimum shank clamping depths for high pressure chuck

Shank diameter	16	18	20	25	32	mm
Minimum clamping depth	39	39	41	47	51	mm

For direct clamping

Clamping diameter (d1 h6)	16	18	20	25	32	mm
Md with shank at minimum size	280	360	550	650	800	Nm
Md with shank at maximum size	380	450	650	750	890	Nm

Minimum permissible shank torques and clamping depths for shrink fit holders

Shank diameter	3	4	5	6	8	10	12	14	16	18	20	25	32	mm
Minimum clamping depth	12	16	20	26	26	31	37	37	40	40	42	48	52	mm
Permissible torque moment	4	11	17	24	45	82	145	190	200	290	450	530	700	Nm





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories 17

18 Material examples and article no. index

List of contents

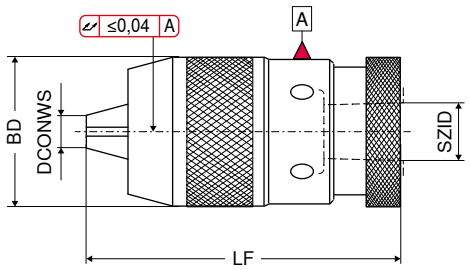
Type		Cylindrical shank	Morse taper
Morse taper chuck adapter and reduction sleeve			4
Short drill chuck NC 2010		6	5
Synchro quick change tapping chuck with minimum length compensation		7	
Quick change tapping chuck with length compensation		8	8
Shrink fit extension		10	
Hydraulic chuck		11	
Micro-Precision Collet Chuck		12	
Micro-extension		13	
Centro-P precision collet chuck ER-Mini		14	
ER Collet chuck		15+16	
Screw in milling adapter		17–20	21
MultiChange – Holder		22–25	
3D Tester and Accessories		43+44	

Designation		Pages
Drill chuck with internal taper		3
Tap clamping sleeve for Weldon adapters		9
Extension for Shell mill arbors		26
Extension with ABS Connection		27
Milling adapter ring		28
Accessories for VDI		29
Zeta® Lock nuts and accessories		30+31
Reduction sleeve and reducing bushings		32+33
Assembly device for SK, HSK and PSC adapters		34
Taper wiper		34
Accessories for Centro-P		35
Roll key		36
Lock nuts		37
MultiChange key		38
Torque-vario screwdriver with torque setter		39+40
TORX® screwdrivers, TORX® interchangeable blades, TORX® bit holders and adapters		39–42
Zero height setting gauge		43
Cool-jet		45

Drill chuck

- ▲ for manual and key clamping
- ▲ through-hardened and ground

Scope of supply:
Holder with clamping key





SZID	DCONWS	LF	BD	Y8 Article no. 83 636 ...	
	mm	mm	mm	EUR	
B12	0 - 8	73	35	88,19	**012**
B12	0 - 10	92	43	104,00	**112**
B16	1 - 13	106	50	124,80	**016**
B16	3 - 16	110	57	104,90	**116**
B18	3 - 16	110	57	133,20	**018**

Y8



NC clamping key

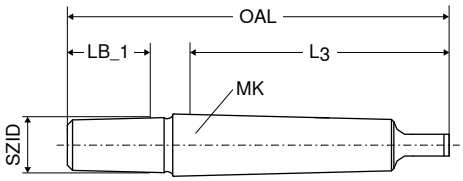
Spare parts DCONWS	Article no. 83 302 ...	
	EUR	
0 - 10	8,60	**010**
0 - 8	8,26	**008**
1 - 13	8,26	**013**
3 - 16	9,91	**016**

Suitable adapters can be found in → **Chapter 16 Adapters, Page 43+79.**

17

Drill chuck adapter DIN 238

▲ through-hardened and ground

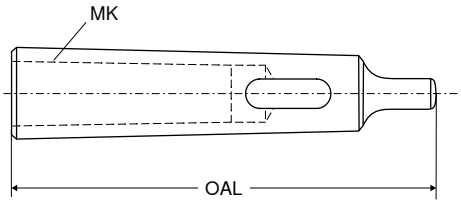




Adapter	SZID	L_3 mm	LB_1 mm	OAL mm	Y8 Article no. 83 642 ... EUR	
MK1	B12	62,0	18,5	89,0	4,54	**120**
MK1	B16	62,0	24,0	97,0	4,03	**160**
MK1	B18	62,0	32,0	106,0	4,82	**180**
MK2	B12	75,0	18,5	106,5	4,54	**121**
MK2	B16	75,0	24,0	110,5	4,54	**161**
MK2	B18	75,0	32,0	117,5	4,86	**181**
MK3	B12	94,0	18,5	125,0	6,29	**122**
MK3	B16	94,0	24,0	134,0	6,10	**162**
MK3	B18	94,0	32,0	141,0	6,52	**182**
MK4	B16	117,5	24,0	159,0	13,74	**163**
MK4	B18	117,5	32,0	168,0	13,94	**183**
MK5	B16	149,5	24,0	196,0	30,30	**164**
MK5	B18	149,5	32,0	204,5	31,46	**184**

Reduction sleeve DIN 2185

▲ through-hardened, ground internally and externally





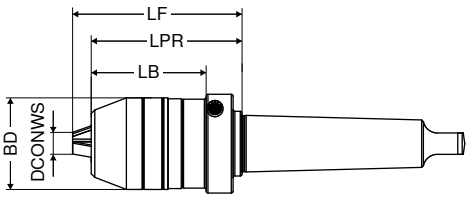
for size	OAL mm	Y8 Article no. 83 644 ... EUR	
MK1 - MK0	80	9,81	**010**
MK2 - MK1	92	10,14	**020**
MK3 - MK1	99	12,06	**130**
MK3 - MK2	112	11,11	**030**
MK4 - MK1	124	18,35	**240**
MK4 - MK2	124	17,41	**140**
MK4 - MK3	140	17,09	**040**
MK5 - MK2	156	37,01	**250**
MK5 - MK3	156	38,17	**150**
MK5 - MK4	171	36,39	**050**

Short drill chuck

- bidirectional
- torque moment = 12 Nm
- with Morse taper

Scope of supply:
Holder with clamping key

NC 2010







A

Y8

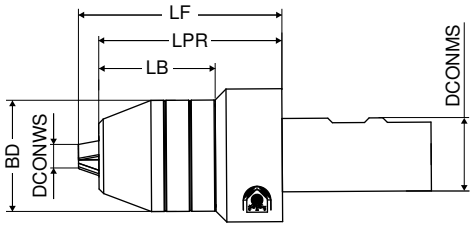
Adapter	DCONWS	BD	LB	LPR	LF	Article no. 84 314 ...
	mm	mm	mm	mm	mm	EUR
MK3	0,5 - 13	48,5	64	84	93,0	225,50 **313**
MK3	2,5 - 16	51,0	64	84	94,5	225,50 **316**
MK4	2,5 - 16	51,0	64	84	94,5	248,50 **416**

Short drill chuck

- bidirectional
- torque moment = 12 Nm
- with cylindrical shank

Scope of supply:
Holder with clamping key

NC 2010





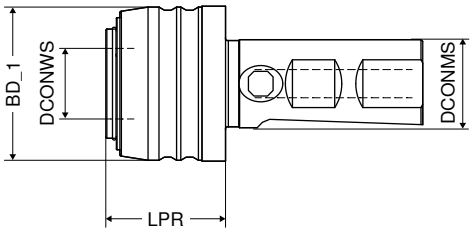


A
G 6,3 n_{max} 10000
Y8

DCONMS	DCONWS	BD	LB	LPR	LF	Article no. 84 311 ...	
mm	mm	mm	mm	mm	mm	EUR	
25	0,5 - 13	48,5	50,9	80	89,0	248,50	**213**
32	0,5 - 13	48,5	50,9	80	89,0	270,50	**313**
32	2,5 - 16	51,0	50,9	80	90,5	293,60	**316**

Synchro quick change tapping chuck with minimum length compensation

- for collets according to DIN 6499
- with length compensation under tension and under compression (LZD)
- $p_{max.}$ = 50 bar
- SZID = for tool size







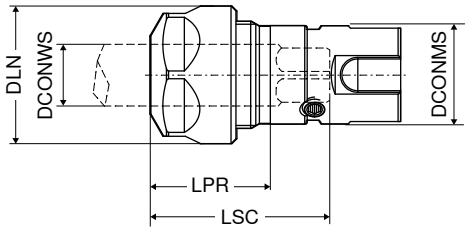
AD

DCONWS mm	cutting range	SZID	LPR mm	BD_1 mm	DCONMS mm	LZD± mm	Y8 Article no. 83 641 ... EUR	
20	M3 - M12	1	35	43,5	25	1,0 / 0,2	133,20	**012**
32	M6 - M20	2	56	60,0	25	1,0 / 0,2	153,10	**020**

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut

- SZID = for tool size







AD

SZID	DCONWS mm	cutting range	LPR mm	DLN mm	LSC mm	for collet	DCONMS mm	Y8 Article no. 83 608 ... EUR	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	110,10	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	127,90	**020**

	W7		W7		Y8		Y8	
	 Lock nut		 Lock nut		 Lock nut IK		 Y clamping key	
Spare parts		**Article no. 62 950 ...**		**Article no. 62 950 ...**		**Article no. 83 950 ...**		**Article no. 83 357 ...**
for Article no.		**EUR**		**EUR**		**EUR**		**EUR**
83 608 012	M22x1,5 - SW25	17,82 **044**			M22x1,5	30,62 **054**		16,04 **116**
83 608 020			M32x1,5	19,92 **055**	M32x1,5	34,72 **055**		17,72 **125**

Accessories

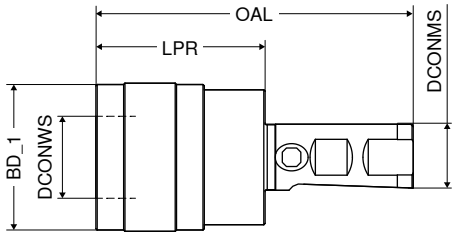


ER collet

→ 16|212, 214–215

Quick change tap chuck with length compensation

- with cylindrical shank
- with length compensation under tension and compression (LZD)
- Quick change adapters
- SZID = for tool size







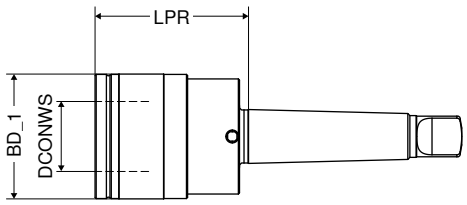
A

Y8

DCONMS mm	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	OAL mm	LZD± mm	Article no. 83 648 ...	
								EUR	
20	M3 - M12	01	41	38	19	91	9	194,00	**112**
20	M6 - M20	02	63	55	31	138	15	262,20	**120**
25	M3 - M12	01	41	38	19	97	9	194,00	**212**
25	M6 - M20	02	63	55	31	119	15	238,00	**220**
32	M3 - M12	01	41	38	19	102	9	197,20	**312**
32	M6 - M20	02	63	55	31	124	15	245,40	**320**

DIN 228B – Quick change tap chuck with length compensation

- with Morse taper shank
- with length compensation under tension and compression (LZD)
- SZID = for tool size







A

Y8

Adapter	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	LZD± mm	Article no. 83 646 ...	
							EUR	
MK 2	M3 - M12	01	46	38	19	9	167,70	**212**
MK 3	M3 - M12	01	46	38	19	9	163,60	**312**
MK 3	M6 - M20	02	69	55	31	15	205,50	**320**
MK 4	M6 - M20	02	70	55	31	15	205,50	**420**

Accessories

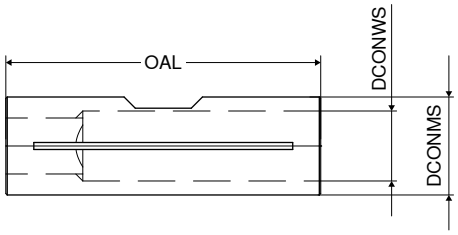


Collet

→ 16|219, 221–223

Clamping sleeve for taps in Weldon chucks

- ▲ for machines with rigid tapping
- ▲ for safe clamping of taps



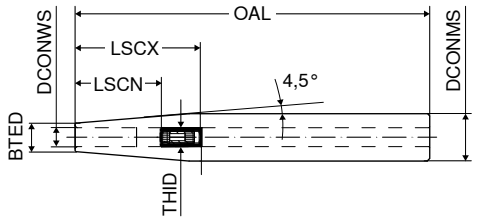


DCONWS $_{H7}$	DCONMS $_{f6}$	OAL	Y7 Article no. 80 696 ...	
mm	mm	mm	EUR	
3,5	6	26	34,08	**035**
4,0	8	26	33,56	**040**
4,5	8	26	33,03	**045**
6,0	10	30	31,35	**060**
7,0	10	31	31,35	**070**
8,0	12	38	31,35	**080**
9,0	12	38	31,35	**090**
10,0	14	42	31,35	**100**
11,0	14	42	31,35	**110**
12,0	16	44	31,35	**120**
14,0	18	45	32,51	**140**
16,0	20	46	33,45	**160**

Shrink fit extension

- For solid carbide and HSS shanks with h6 tolerance or better
- DRVS = Key size of the adjustment screw

TG





AD

DCONMS h6	DCONWS	BTED	OAL	LSCX	LSCN	THID	DRVS	Y8 Article no. 84 310 ...	
mm	mm	mm	mm	mm	mm		mm	EUR	
12	3	8	150					113,30	**003**
12	4	8	150					113,30	**004**
12	5	10	150					113,30	**005**
12	6	10	150	36	26	M5	2,5	113,30	**006**
16	3	10	150					113,30	**103**
16	4	10	150					113,30	**104**
16	5	10	150					113,30	**105**
16	6	10	150	36	26	M5	2,5	113,30	**106**
16	8	12	150	36	26	M6	3,0	113,30	**108**
20	3	10	150					113,30	**203**
20	4	10	150					113,30	**204**
20	5	10	150					113,30	**205**
20	6	10	150	36	26	M5	2,5	113,30	**206**
20	8	12	150	36	26	M6	3,0	113,30	**208**
20	10	14	150	42	32	M8x1	3,0	113,30	**210**
20	12	16	150	47	37	M10x1	5,0	113,30	**212**
25	3	10	150					113,30	**303**
25	4	10	150					113,30	**304**
25	5	15	150					113,30	**305**
25	6	20	150	36	26	M5	2,5	113,30	**306**
25	8	20	150	36	26	M6	3,0	113,30	**308**
25	10	20	150	42	32	M8x1	3,0	113,30	**310**
25	12	20	150	47	37	M10x1	5,0	113,30	**312**
25	14	20	150	47	37	M10x1	5,0	113,30	**314**
25	16	22	150	50	40	M10x1	5,0	113,30	**316**
32	6	20	150	36	26	M5	2,5	113,30	**406**
32	8	20	150	36	26	M6	3,0	113,30	**408**
32	10	24	150	42	32	M8x1	3,0	113,30	**410**
32	12	24	150	47	37	M10x1	5,0	113,30	**412**
32	14	27	150	47	37	M10x1	5,0	113,30	**414**
32	16	27	150	50	40	M10x1	5,0	113,30	**416**
32	18	27	150	50	40	M10x1	5,0	113,30	**418**
32	20	27	150	52	42	M10x1	5,0	113,30	**420**

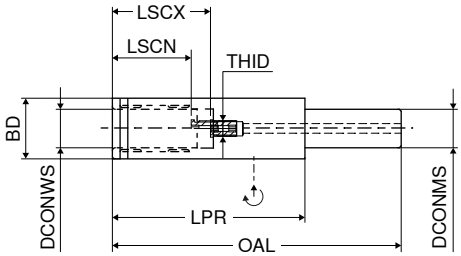
Note the minimum clamping depth in → **Chapter 16 Adapters, Page 233.**

Hydraulic expansion extension especially for Hydraulic Chucks

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







AD

G 2,5 n_{max} 25000

DCONWS	DCONMS	BD	LPR	OAL	LSCX	LSCN	THID	Y8 Article no. 84 313 ...	
mm	mm	mm	mm	mm	mm	mm		EUR	
12	20	25,0	100	150	46	36	M6	282,10	**112**
20	20	31,5	100	150	51	41	M10x1	282,10	**120**
20	32	31,5	90	150	51	41	M10x1	282,10	**132**
20	32	31,5	90	200	51	41	M10x1	290,50	**232**

Note the minimum clamping depth in → **Chapter 16 Adapters, Page 233.**

Y7



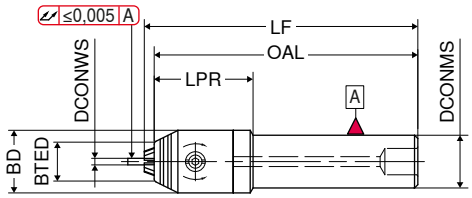
Stop screw IK

Spare parts for Article no.		Article no. 83 950 ... EUR	
84 313 112	M6x12,5 - SW3	8,11	**419**
84 313 120	M10x1x13,5 - SW5	8,11	**421**
84 313 132	M10x1x13,5 - SW5	8,11	**421**
84 313 232	M10x1x13,5 - SW5	8,11	**421**

Micro-precision collet chuck

- bidirectional
- for speeds up to 60,000 1/min.

Scope of supply:
Holder including clamping wrench SW 2 x 60 mm







AD
G 2,5 n_{max} 18000

DCONMS	DCONWS	LPR	OAL	LF	BD	BTED	TQX	Y7 Article no. 84 315 ... EUR	
mm	mm	mm	mm	mm	mm	mm	Nm		
16	0,2 - 3,4	30	80	83	19	12	2	391,10	**161**
16	0,2 - 3,4	30	100	103	19	12	2	411,10	**162**
16	0,2 - 3,4	30	160	163	19	12	2	450,90	**163**
20	0,2 - 3,4	28	80	83	19	12	2	391,10	**201**
20	0,2 - 3,4	28	100	103	19	12	2	411,10	**202**
20	0,2 - 3,4	28	160	163	19	12	2	450,90	**203**

Torx blade



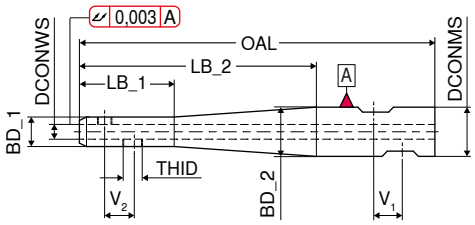
Torque screwdriver

Spare parts for Article no.	Y7 Article no. 80 950 ... EUR			Y7 Article no. 80 021 ... EUR	
84 315 161	5,60	**152**	1,8 Nm	97,04	**018**
84 315 162	5,60	**152**	1,8 Nm	97,04	**018**
84 315 163	5,60	**152**	1,8 Nm	97,04	**018**
84 315 201	5,60	**152**	1,8 Nm	97,04	**018**
84 315 202	5,60	**152**	1,8 Nm	97,04	**018**
84 315 203	5,60	**152**	1,8 Nm	97,04	**018**

Micro-extension

- ▲ for shanks with lateral claming flat to DIN 6535 HB / 1835 B
- ▲ with option for Synchro-Plus tapping (available on request)

Scope of supply:
Holder with shank clamping screw





AD

DCONWS mm	BD_1 mm	LB_1 mm	LB_2 mm	OAL mm	DCONMS mm	BD_2 mm	V_1 mm	V_2 mm	THID	TQX Nm	Y7 Article no. 80 641 ...	EUR	
6	12	40	40	85	12	12	10	10	M6 x 0,5	7		109,10	**006**
6	12	40	100	150	20	20	10	10	M6 x 0,5	7		132,10	**106**
8	15	40	40	88	16	15	10	10	M8 x 0,75	8		106,90	**008**
8	15	40	100	150	20	20	10	10	M8 x 0,75	8		128,90	**108**
10	18	40	40	90	20	18	10	10	M10 x 1	12		106,90	**010**
10	18	40	100	150	20	20	10	10	M10 x 1	12		128,90	**110**
12	21	40	40	90	20	21	10	10	M12 x 1	15		106,90	**012**
12	21	40	100	150	20	21	10	10	M12 x 1	15		128,90	**112**
14	23	40	40	90	20	23	10	10	M12 x 1	15		110,10	**014**
14	23	40	100	150	20	23	10	10	M12 x 1	15		132,10	**114**
16	26	40	50	106	25	26	10	12	M14 x 1	18		123,70	**016** 1)
16	26	40	100	156	25	26	10	12	M14 x 1	18		152,10	**116** 1)
18	28	40	50	106	25	28	10	12	M14 x 1	18		128,90	**018** 1)
18	28	40	100	156	25	28	10	12	M14 x 1	18		155,20	**118** 1)
20	31	40	50	110	32	31	10	14	M16 x 1	20		127,90	**020** 1)
20	31	40	100	160	32	31	10	14	M16 x 1	20		153,10	**120** 1)

1) only pre-balanced design

Y7



Clamping screw

Spare parts DCONWS		Article no. 80 950 ... EUR	
6	M6x0,5 TX10	7,97	**206**
8	M8x0,75 TX10	7,97	**208**
10	M10x1 SW-5	7,97	**210**
12 - 14	M12x1 SW-5	8,09	**212**
16 - 18	M14x1 SW-5	8,41	**214**
20	M16x1 SW-5	8,64	**216**

17

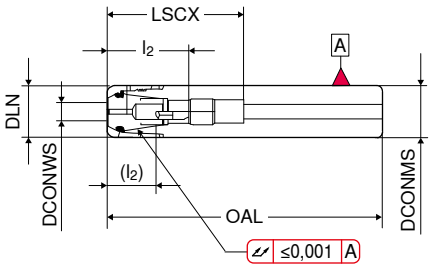
Mini ER precision collet chuck

- ▲ maximum clamping range covered according to ISO tolerance field H10
- ▲ roll key required for clamping

Scope of supply:

Holder without nut, without backstop

Centro-P





AD

DCONMS	DCONWS	DLN	OAL	LSCX	l_2 (l_2)	for collet	Y8 Article no. 84 456 ...	
mm	mm	mm	mm	mm	mm		EUR	
10	1 - 5	10	150	16		4004E (ER08)	136,80	**005**
10	1 - 5	10	200	16		4004E (ER08)	187,10	**006**
16	1 - 7	16	150	68	18 - 36 (12 - 26)	4008E (ER11)	121,60	**007**
16	1 - 7	16	200	68	18 - 36 (12 - 26)	4008E (ER11)	151,90	**008**
16	1 - 10	22	150	68	28 - 48 (16 - 35)	426E (ER16)	121,60	**010**
20	1 - 10	22	150	68	28 - 48 (16 - 35)	426E (ER16)	127,70	**102**
20	1 - 10	22	200	68	28 - 48 (16 - 35)	426E (ER16)	151,90	**104**

LSCX = clamping depth without back stop screw for shanks
l_2 = with back stop screw 1, dimension in brackets ( ) = with back stop screw 2
dimension OAL when using tightening nuts with seals 4 mm longer

Spare parts	Y8  Mini lock nut IK Article no. 84 950 ...		Y8  Mini lock nut Article no. 84 950 ...			Y8  Stop screw 2 Article no. 83 950 ...			Y8  Stop screw 1 Article no. 83 950 ...	
for collet	EUR		EUR			EUR			EUR	
4004E (ER08)			38,19	**040**						
4008E (ER11)			33,15	**041**	M8x1 - SW4	13,53	**340**	M8x1 - SW4	9,93	**336**
426E (ER16)	41,22	**035**	33,15	**034**	M11x1 - SW6	14,08	**341**	M11x1 - SW6	9,93	**337**

Accessories


ER collet → 16|208–213


Device → 35

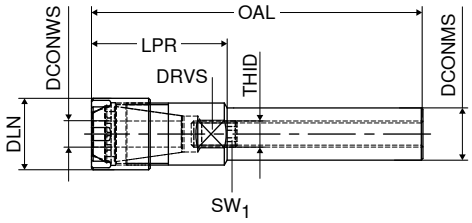

roll key → 36


roll key device → 36

The transferable torques can be found in → **Chapter 16 Adapters, Page 233.**

ER collet chuck with mini clamping nut

▲ with cylindrical shank





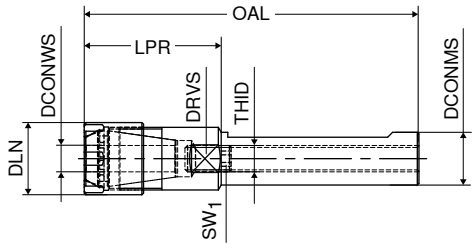
AD

Y8

DCONMS h6 mm	DCONWS mm	OAL mm	LPR mm	DLN mm	THID	DRVS mm	SW1 mm	for collet	Article no. 83 453 ... EUR	
8	1 - 5	79	24	12		9		4004E (ER08)	78,21	**081**
12	1 - 5	155	18	12	M5	10	2,5	4004E (ER08)	107,20	**122**
16	1 - 7	182	22	16	M7,5x0,5	14	4,0	4008E (ER11)	114,90	**163**
16	1 - 10	117	37	22	M11x1	17	4,0	426E (ER16)	81,08	**164**
16	1 - 10	197	37	22	M11x1	17	4,0	426E (ER16)	114,90	**165**
20	1 - 10	166	25	22	M11x1	17	5,0	426E (ER16)	111,40	**204**
25	1 - 13	166	37	28	M14x1	22	5,0	428E (ER20)	128,20	**254**
25	1 - 16	190	40	35	M18x1	27		430E (ER25)	161,00	**256**

ER collet chuck with mini clamping nut

▲ with cylindrical shank and clamping flat





AD

Y8

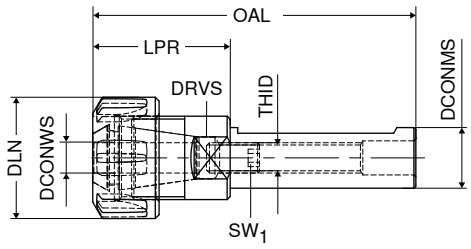
DCONMS h6 mm	DCONWS mm	OAL mm	LPR mm	DLN mm	THID	DRVS mm	SW1 mm	for collet	Article no. 83 454 ... EUR	
20	1 - 10	166	25	22	M11x1	17	5	426E (ER16)	111,40	**204**
20	1 - 13	137	37	28	M11x1	22	5	428E (ER20)	83,71	**206**
20	1 - 16	146	46	35	M11x1	27	5	430E (ER25)	97,24	**208**
25	1 - 13	166	28	28	M14x1	22	5	428E (ER20)	128,20	**254**
25	1 - 16	190	40	35	M18x1	27		430E (ER25)	161,00	**256**

Spare parts for ER collet chuck with mini lock nut

Spare parts for collet	Y8 ER Mini clamping key Article no. 83 950 ... EUR		W7 Mini lock nut Article no. 62 950 ... EUR		Y8 Stop screw IK Article no. 83 950 ... EUR	
4004E (ER08)	13,94	099	M10x0,75	25,06	067	M5x0,8	1,49	003
4008E (ER11)	15,21	100	M13x0,75	24,43	065	M7,5x0,5	1,73	004
426E (ER16)	16,15	101	M19x1	23,90	066	M11x1	2,00	006
426E (ER16)	16,15	101	M19x1	23,90	066	M8x1,25	1,86	005
428E (ER20)	18,24	102	M24x1	26,95	068	M14x1	2,15	007
430E (ER25)	20,45	103	M30x1	29,46	069	M18x1	2,33	008

ER Collet Chuck

▲ with cylindrical shank and clamping flat





AD

DCONMS h6 mm	DCONWS mm	OAL mm	LPR mm	DLN mm	THID	DRVS mm	SW1 mm	for collet	Y8 Article no. 83 455 ... EUR	
40	2 - 20	100		50	M22x1,5	36		470E (ER32)	99,41	401
40	2 - 20	160		50	M22x1,5	36		470E (ER32)	122,10	402
40	3 - 30	139	59	63	M28x1,5	40	6	472E (ER40)	113,70	405

Spare parts for collet		W7 Lock nut Article no. 62 950 ... EUR		Y8 Y clamping key Article no. 83 357 ... EUR		Y8 Stop screw IK Article no. 83 950 ... EUR		Y8 Stop screw Article no. 83 950 ... EUR	
470E (ER32)	M40x1,5	18,56	056	24,12	132			M22x1,5x20	2,90	095
472E (ER40)	M50x1,5	18,04	057	26,53	140	M28x1,5x25	3,82	096		

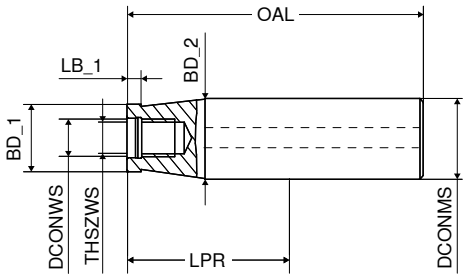
Accessories



ER collet

→ 16|206, 211–215

Cylindrical milling bar for cutters with threaded end



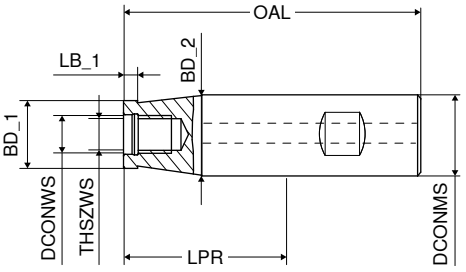


AD

WA

DCONMS h6	THSZWS	DCONWS	LPR	BD_1	LB_1	BD_2	OAL	Article no. 56 727 ...	
mm		mm	mm	mm	mm	mm	mm	EUR	
12	M5	5,5	20	9,5	7,8	11,5	65	72,67	052
12	M6	6,5	20	11,5	7,8	11,5	65	74,24	060
12	M6	6,5	40	11,5	7,8	11,5	85	80,11	062
16	M8	8,5	20	13,8	7,8	15,8	68	75,18	081
16	M8	8,5	40	13,8	7,8	15,8	88	80,95	082
20	M10	10,5	25	18,0	7,8	19,8	75	78,43	101
20	M10	10,5	45	18,0	7,8	19,8	95	84,73	102
25	M12	12,5	50	21,0	7,8	24,8	106	88,71	122
32	M16	17,0	50	29,0	12,0	31,8	110	95,52	162

Milling bar for cutters with threaded end (Weldon)





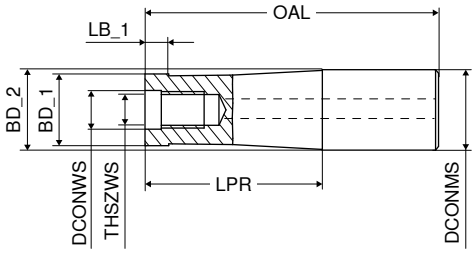
AD

WA

DCONMS h6	THSZWS	DCONWS	LPR	BD_1	LB_1	BD_2	OAL	Article no. 56 729 ...	
mm		mm	mm	mm	mm	mm	mm	EUR	
12	M6	6,5	20	11,5	7,8	11,5	65	74,24	060
12	M6	6,5	40	11,5	7,8	11,5	85	80,11	062
16	M8	8,5	20	13,8	12,0	15,8	68	75,18	081
16	M8	8,5	40	13,8	8,0	15,8	88	80,95	082
20	M10	10,5	25	18,0	8,0	19,8	75	78,43	101
20	M10	10,5	45	18,0	12,0	19,8	95	84,73	102
25	M12	12,5	30	21,0	12,0	24,9	86	81,58	121
25	M12	12,5	50	21,0	8,0	24,9	106	88,71	122
32	M16	17,0	50	29,0	12,0	31,8	110	95,52	162

Screw-in adapter with cylindrical shank

▲ vibration-damped

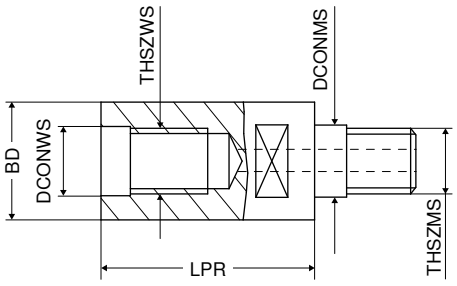




								AD		AD		A	
								VHM		Densimet		Densimet	
								WC		WC		WC	
DCONMS h6	THSZWS	DCONWS	LPR	BD_1	LB_1	BD_2	OAL	Article no. 56 743 ...		Article no. 56 744 ...		Article no. 56 721 ...	
mm		mm	mm	mm	mm	mm	mm	EUR		EUR		EUR	
12	M5	5,5	40	9,5	9	11,3	85			222,30	052	189,80	052
12	M5	5,5	60	9,5	9	11,3	105			240,20	053	203,40	053
12	M5	5,5	80	9,5	9	11,3	125			267,40	054	218,20	054
12	M6	6,5	20	11,5		11,5	65	281,00	060				
12	M6	6,5	40	11,5		11,5	85	299,90	062				
12	M6	6,5	60	11,5		11,5	105	332,40	063				
12	M6	6,5	80	11,5		11,5	125	363,90	064				
12	M6	6,5	100	11,5		11,5	145	395,30	065				
16	M8	8,5	40	14,2	9	15,3	88	288,30	082	273,70	082	229,70	082
16	M8	8,5	60	14,2	9	15,3	108	317,80	083	295,70	083	242,20	083
16	M8	8,5	80	14,2	9	15,3	128	342,90	084	323,00	084	255,80	084
16	M8	8,5	100	14,2	9	15,3	148	373,30	085	355,40	085	281,00	085
16	M8	8,5	120	14,2	9	15,3	168	398,40	086	392,20	086	303,00	086
16	M8	8,5	150	14,2	9	15,3	198			493,90	087	381,70	087
20	M10	10,5	60	18,5	9	19,3	110	365,90	103	345,00	103	267,40	103
20	M10	10,5	80	18,5	9	19,3	130	412,10	104	383,80	104	293,60	104
20	M10	10,5	100	18,5	9	19,3	150	448,80	105	428,90	105	324,00	105
20	M10	10,5	120	18,5	9	19,3	170	509,60	106	476,00	106	359,60	106
20	M10	10,5	140	18,5	9	19,3	190	568,30	107	554,70	107	423,60	107
25	M12	12,5	75	23,0	9	24,3	131			518,00	124	397,40	124
25	M12	12,5	80	23,0	9	24,3	136	440,40	124				
25	M12	12,5	100	23,0	9	24,3	156	512,80	125	572,50	125	427,90	125
25	M12	12,5	120	23,0	9	24,3	176	637,60	126				
25	M12	12,5	125	23,0	9	24,3	181			627,10	126	456,20	126
25	M12	12,5	140	23,0	9	24,3	196	736,00	127				
25	M12	12,5	150	23,0	9	24,3	206			704,70	127	507,50	127
25	M12	12,5	160	23,0	9	24,3	216	834,60	128				
25	M12	12,5	175	23,0	9	24,3	231			798,00	128	574,60	128
32	M16	17,0	100	29,0	9	31,5	160	937,40	165 [1)]				
32	M16	17,0	150	29,0	9	31,5	210	1.138,00	166 [1)]				
32	M16	17,0	200	29,0	9	31,5	260	1.372,00	167 [1)]				
32	M16	17,0	250	29,0	9	31,5	310	1.647,00	168 [1)]				
32	M16	17,0	300	29,0	9	31,5	360	1.884,00	169 [1)]				
36	M16	17,0	100	31,5	9	34,3	160					823,10	165 [1)]
36	M16	17,0	150	31,5	9	34,3	210					1.253,00	166 [1)]
36	M16	17,0	200	31,5	9	34,3	260					1.285,00	167 [1)]

1) On request

Extensions for milling cutters with threaded end



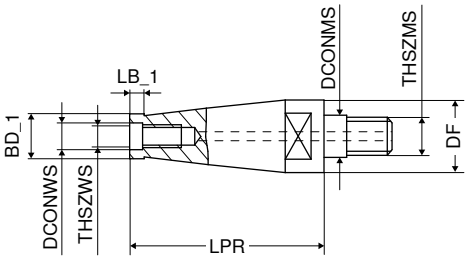




AD

THSZWS	THSZMS	DCONWS	DCONMS	LPR	BD	WA Article no. 56 733 ...	
		mm	mm	mm	mm	EUR	
M8	M8	8,5	8,5	40	13,8	85,66	**081**
M8	M8	8,5	8,5	60	13,8	105,90	**082**
M10	M10	10,5	10,5	40	18,0	88,92	**101**
M10	M10	10,5	10,5	60	18,0	109,10	**102**
M12	M12	12,5	12,5	40	21,0	92,27	**121**
M12	M12	12,5	12,5	60	21,0	112,20	**122**
M16	M16	17,0	17,0	40	29,0	95,52	**161**
M16	M16	17,0	17,0	60	29,0	115,40	**162**

Reductions for milling cutters with threaded end



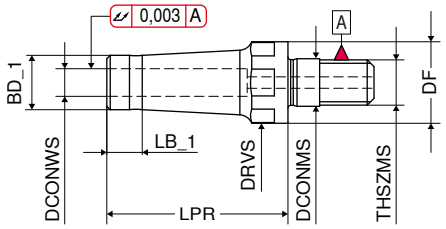




AD

THSZWS	THSZMS	DCONMS	DCONWS	LPR	BD_1	DF	LB_1	WA Article no. 56 735 ...	
		mm	mm	mm	mm	mm	mm	EUR	
M6	M8	8,5	6,5	20	9,5	13,8	7,8	79,48	**060**
M8	M10	10,5	8,5	40	13,8	18,0	7,8	88,92	**081**
M8	M12	12,5	8,5	60	13,8	21,0	7,8	95,52	**082**
M10	M12	12,5	10,5	40	18,0	21,0	7,8	92,27	**101**
M10	M16	17,0	10,5	60	18,0	29,0	7,8	112,20	**102**
M12	M16	17,0	12,5	40	21,0	29,0	7,8	92,27	**121**

Threaded shrink adapter





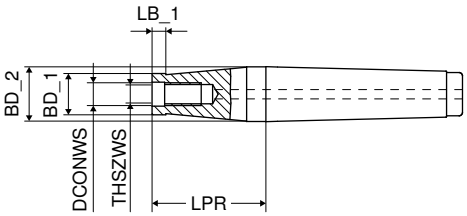


AD

THSZMS	DCONWS	BD_1	LPR	LB_1	DF	DCONMS	TQX	DRVS	WA Article no. 56 708 ... EUR	
	mm	mm	mm	mm	mm	mm	Nm	mm		
M10	6	12	40	7,8	18	10,5	30	17	106,90	**061**
M12	6	12	40	7,8	21	12,5	50	19	106,90	**062**
M16	6	12	40	7,8	29	17,0	100	27	106,90	**063**
M10	8	16	40	7,8	18	10,5	30	17	106,90	**081**
M12	8	16	40	7,8	21	12,5	50	19	106,90	**082**
M16	8	16	40	7,8	29	17,0	100	27	106,90	**083**
M10	10	18	60		18	10,5	30	17	106,90	**101**
M12	10	20	60	7,8	21	12,5	50	19	106,90	**102**
M16	10	20	60	7,8	29	17,0	100	27	106,90	**103**
M12	12	21	60		21	12,5	50	19	106,90	**122**
M16	12	24	60	7,8	29	17,0	100	27	106,90	**123**

Note the minimum clamping depth in → **Chapter 16 Adapters, Page 233.**

Morse taper milling bar for cutters with threaded end







AD

Adapter	THSZWS	DCONWS	BD_1	LB_1	BD_2	LPR	WA Article no. 56 731 ... EUR	
		mm	mm	mm	mm	mm		
MK2	M8	8,5	13,8	8,5	18,0	20	55,05	**081**
MK2	M8	8,5	13,8	8,5	18,0	40	58,51	**082**
MK2	M8	8,5	13,8	8,5	18,0	60	60,08	**083**
MK3	M8	8,5	13,8	8,5	24,1	80	64,69	**084**
MK3	M8	8,5	13,8	8,5	24,1	100	68,68	**085**
MK2	M10	10,5	18,0		18,0	20	55,05	**101**
MK2	M10	10,5	18,0		18,0	40	58,51	**102**
MK2	M10	10,5	18,0		18,0	60	60,08	**103**
MK3	M10	10,5	18,0	8,5	24,1	80	64,69	**104**
MK3	M10	10,5	18,0	8,5	24,1	100	68,68	**105**
MK3	M12	12,5	21,0	8,5	24,0	10	53,68	**121**
MK3	M12	12,5	21,0	8,5	24,1	30	55,05	**122**
MK3	M12	12,5	21,0	8,5	24,1	45	57,78	**123**
MK3	M12	12,5	21,0	8,5	24,1	60	60,61	**124**
MK3	M12	12,5	21,0	8,5	24,1	75	64,69	**125**
MK3	M12	12,5	21,0	8,5	24,1	85	70,88	**126**
MK3	M12	12,5	21,0	8,5	24,1	95	74,87	**127**
MK4	M12	12,5	21,0	8,5	31,6	120	106,90	**129**
MK4	M16	17,0	29,0	12,0	31,6	10	58,51	**161**
MK4	M16	17,0	29,0	12,0	31,6	35	59,87	**162**
MK4	M16	17,0	29,0	12,0	31,6	50	65,32	**163**
MK4	M16	17,0	29,0	9,0	31,6	65	70,15	**164**
MK4	M16	17,0	29,0	12,0	31,6	80	76,33	**165**
MK4	M16	17,0	29,0	12,0	31,6	95	84,61	**166**
MK5	M16	17,0	29,0	9,0	44,7	150	120,60	**168**
MK5	M16	17,0	29,0	9,0	44,7	180	127,90	**169**

MultiChange Programme Overview

The highly stable "MultiChange" exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Solid carbide drilling



- Solid Carbide NC Spot Drill
  ◁ 90°, 120°, 142° / Ø 8, 10, 12, 16, 20 mm / ZEFP* 2

→ **Chapter 2, Solid carbide drilling**

*ZEFP = Number of teeth

Reaming and Countersinking



- Through hole reamers
  Ø 8–30.2 mm incl. special diameters / ZEFP 4-6
- Blind hold reamers
  Ø 12.2–30.2 mm incl. special diameters / ZEFP 6

→ **Chapter 4, Reaming and countersinking**

*ZEFP = Number of teeth

Solid Carbide milling cutters



- PCD shoulder mills
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 2
- Solid carbide shoulder mills
  Type N, PCR-UNI, PCR-ALU / Ø 8, 10, 12, 16, 20 mm / ZEFP 3+4
- Solid carbide rough and finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 4–6
- Solid carbide finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide high-feed cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide ball-nosed end mills
  Ø 10, 12, 16, 20 mm / ZEFP* 4
- Solid carbide torus bull nose milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide quarter round cutter
  Ø 8, 10, 12, 16, 20 mm
- Solid carbide deburring cutters
  Ø 10, 12, 16, 20 mm / ZEFP* 4+6

→ **Chapter 14, Solid carbide milling cutters**

*ZEFP = Number of teeth

Tool holder



- Steel Holder Extra Short
  Cylindrical / Tapered 87°
  Length 60–90 mm
  for KLG 8, 10, 12, 16, 20 mm 23+24



- Short Holder Steel/Solid Carbide
  cylindrical
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm 24+25



- Holder Steel /Solid Carbide, Short
  87° taper
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm 23



- Solid Carbide Holder Medium
  Cylindrical / Tapered 87°
  Length 110–150 mm
  for KLG 8, 10, 12, 16, 20 mm 23+25



- Holder Steel/Solid Carbide, Long
  cylindrical
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm 24+25



- Holder Steel/Solid Carbide, Long
  87° taper
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm 23



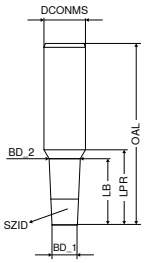
- Steel/Solid Carbide Holder Extra Long
  cylindrical
  Length 200–250 mm
  For Ø 16 and 20 mm 24+25

MultiChange – Holders

▲ tapered 87°
▲ SZID = Coupling Size

Scope of supply:
Holder without mounting key







SZID	BD_1	BD_2	DCONMS	OAL	LB	LPR	Steel		Steel		Solid carbide		Solid carbide		Solid carbide	
							A		A		HA		HA		HA	
							Y8		Y8		Y8		Y8		Y8	
	mm	mm	mm	mm	mm	mm	Article no. 84 001 ... EUR		Article no. 84 004 ... EUR		Article no. 84 005 ... EUR		Article no. 84 007 ... EUR		Article no. 84 010 ... EUR	
06	7,8	9,4	10	60	18	19	93,64	**080**								
06	7,8	9,4	10	85	43	44			111,10	**080**	187,70	**080**				
06	7,8	9,4	10	110	68	69							207,70	**080**		
06	7,8	9,4	10	150	108	109									239,00	**080**
08	9,8	12,0	16	70	25	29	95,10	**100**								
08	9,8	13,0	16	90	38	41			113,30	**100**	204,50	**100**				
08	9,8	14,9	16	110	60	61							228,50	**100**		
08	9,8	15,4	16	150	100	101									266,30	**100**
10	11,8	14,2	16	70	27	29	105,90	**120**								
10	11,8	15,2	16	90	40	41			115,40	**120**	204,50	**120**				
10	11,8	16,6	20	110	56	59							292,50	**120**		
10	11,8	19,5	20	150	98	99									316,60	**120**
12	15,8	18,2	20	80	27	29	113,30	**160**								
12	15,8	19,5	20	105	53	54			140,60	**160**	287,30	**160**				
12	15,8	19,5	20	130	78	79							342,90	**160**		
12	15,8	19,5	20	150	98	99									353,40	**160**
16	19,8	23,2	25	90	39	41	132,10	**200**								
16	19,8	24,5	25	120	60	61			162,60	**200**	353,40	**200**				
16	19,8	24,5	25	150	90	91							397,40	**200**		
16	19,8	24,5	25	200	140	141									446,70	**200**

Assembly instructions can be found on → **Page 38**

Accessories



insertion key
→ 38



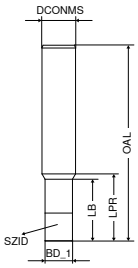
adjustable wrench
→ 38

MultiChange – Holders

- ▲ cylindrical
- ▲ only suitable for milling
- ▲ SZID = Coupling Size

Scope of supply:
Holder without mounting key







SZID	BD_1	DCONMS	OAL	LB	LPR		Steel		Steel		Steel		Steel	
							A		A		A		A	
							Y8		Y8		Y8		Y8	
	mm	mm	mm	mm	mm		Article no. 84 000 ... EUR		Article no. 84 002 ... EUR		Article no. 84 008 ... EUR		Article no. 84 011 ... EUR	
06	7,8	10	60	17	19		84,93	080						
06	7,8	10	85	42	44				99,72	080				
06	7,8	10	150	107	109						140,60	080		
08	9,8	12	70	22	24		86,41	100						
08	9,8	12	90	42	44				102,20	100				
08	9,8	12	150	102	104						143,70	100		
10	11,8	16	70	17	21		95,84	120						
10	11,8	16	90	37	41				104,30	120				
10	11,8	16	150	97	101						146,80	120		
12	15,8	16	80	30	31		102,90	160						
12	15,8	16	105	55	56				124,80	160				
12	15,8	16	150	100	101						176,20	160		
12	15,8	16	200	150	151								318,80	160
16	19,8	25	90	26	31		120,60	200						
16	19,8	25	120	56	61				146,80	200				
16	19,8	25	200	136	141						206,50	200		
16	19,8	25	250	186	191								355,40	200

Assembly instructions can be found on → **Page 38**

Accessories



insertion key
→ 38



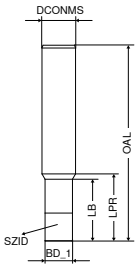
adjustable wrench
→ 38

MultiChange – Holders

- ▲ cylindrical
- ▲ only suitable for milling
- ▲ SZID = Coupling Size

Scope of supply:
Holder without mounting key









Solid carbide

HA

Y8



Solid carbide

HA

Y8



Solid carbide

HA

Y8



Solid carbide

HA

Y8

SZID	BD_1	DCONMS	OAL	LB	LPR	Article no. 84 003 ...		Article no. 84 006 ...		Article no. 84 009 ...		Article no. 84 012 ...	
	mm	mm	mm	mm	mm	EUR		EUR		EUR		EUR	
06	7,8	10	85	42	44	187,70	080						
06	7,8	10	110	67	69			207,70	080				
06	7,8	10	150	107	109					239,00	080		
08	9,8	12	90	42	44	198,20	100						
08	9,8	12	110	62	64			217,00	100				
08	9,8	12	150	102	104					253,80	100		
10	11,8	16	90	37	41	204,50	120						
10	11,8	16	110	57	61			228,50	120				
10	11,8	16	150	97	101					266,30	120		
12	15,8	16	105	55	56	222,30	160						
12	15,8	16	130	80	81			303,00	160				
12	15,8	16	150	100	101					343,90	160		
12	15,8	16	200	150	151							455,10	160
16	19,8	25	120	56	61	353,40	200						
16	19,8	25	150	86	91			397,40	200				
16	19,8	25	200	136	141					446,70	200		
16	19,8	25	250	186	191							688,90	200

Assembly instructions can be found on → **Page 38**

Accessories



insertion key
→ 38

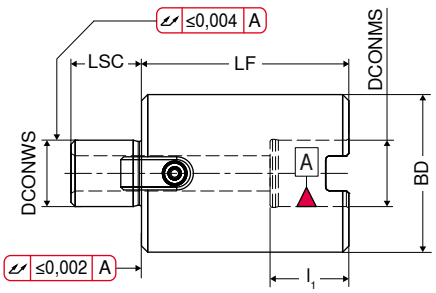


adjustable wrench
→ 38

Extension for Shell mill arbors

▲ variable applications through usage of one or two extensions (max. 2 x 50 mm possible)

Scope of supply:
Holder without clamping screw





DCONWS $_{h5}$ mm	DCONMS $_{H5}$ mm	LF mm	BD mm	LSC mm	l_1 mm	Y8 Article no. 82 648 ...	
						EUR	
16	16	75	38	17	19	76,86	**075**
16	16	50	38	17	19	76,33	**050**
22	22	50	48	19	21	78,22	**150**
22	22	75	48	19	21	78,96	**175**
27	27	75	58	21	23	83,36	**275**
27	27	50	58	21	23	81,89	**250**
32	32	75	78	24	26	91,96	**375**
32	32	50	78	24	26	88,81	**350**
40	40	50	88	27	29	110,10	**450**
40	40	75	88	27	29	114,30	**475**

Spare parts


Screw for drivers

for Article no.		Y8 Article no. 83 950 ... EUR	
82 648 075	M3x8	0,38	**296**
82 648 050	M3x8	0,38	**296**
82 648 150	M4x12	0,48	**297**
82 648 175	M4x12	0,48	**297**
82 648 275	M5x12	0,57	**136**
82 648 250	M5x12	0,57	**136**
82 648 375	M5x20	0,64	**137**
82 648 350	M5x20	0,64	**137**
82 648 450	M6x16	0,75	**138**
82 648 475	M6x16	0,75	**138**


Driver

Y8 Article no. 83 950 ... EUR		
8x9x17,5	7,23	**120**
8x9x17,5	7,23	**120**
10x11x20,5	7,49	**121**
10x11x20,5	7,49	**121**
12x13x24,3	8,48	**122**
12x13x24,3	8,48	**122**
14x21x21,2	8,74	**123**
14x21x21,2	8,74	**123**
15,9x16,3x19,5	11,22	**295**
15,9x16,3x19,5	11,22	**295**


Retaining screw

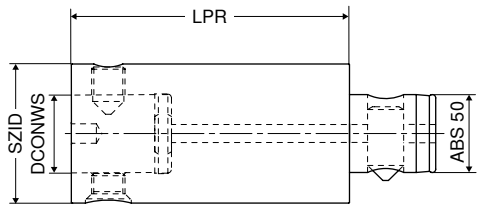
Y8 Article no. 82 649 ... EUR		
M8x125	4,33	**001**
M10x125	6,40	**100**
M12x125	9,79	**200**
M16x125	14,36	**300**


Retaining screw

Y8 Article no. 82 649 ... EUR	
M8x100	3,69	**075**
M8x80	2,67	**050**
M10x80	4,22	**150**
M10x100	5,57	**175**
M12x100	8,33	**275**
M12x80	6,17	**250**
M16x100	12,69	**375**
M16x80	9,06	**350**

When using two extension pieces (max. 2x50 mm) please use a tightening bolt with a length of 125 mm.

Extension with ABS Connection







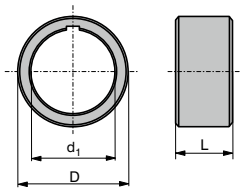
AD

NEW 3E

Adapter	KOMET no.	SZID	DCONWS mm	LPR mm	Article no. 84 209 ... EUR	
ABS 50	A2000550	ABS 50	28	50	292,20	**05097**
ABS 50	A2000050	ABS 50	28	65	292,20	**06597**
ABS 50	A2000250	ABS 50	28	100	292,20	**10097**
ABS 50	A2000150	ABS 50	28	150	292,20	**15097**

Spare parts	XX  Clamping screw	XX  Set	XX  Set	XX  Positioning pin	XX  Pendulum bolt	XX Coolant pipe	XX  Taper screw
	Article no. 84 950 ...	Article no. 84 950 ...	Article no. 84 950 ...	Article no. 84 950 ...	Article no. 84 950 ...	Article no. 84 950 ...	Article no. 84 950 ...
Adapter	EUR	EUR	EUR	EUR	EUR	EUR	EUR
ABS 50	12,64 **20300**	58,24 **99900**	28,81 **99800**	14,92 **20200**	36,04 **20000**	7,33 **20100**	16,22 **20400**

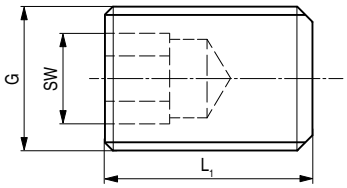
Milling Adapter Rings DIN 2084 Form B





d_1 mm	D mm	L mm	Y8 Article no. 83 385 ... EUR	
13	22	2	5,92	013
	22	3	5,97	113
	22	4	6,24	213
	22	5	6,41	313
	22	6	6,73	413
	22	10	7,53	513
16	26	2	5,25	016
	26	3	5,26	116
	26	4	5,33	216
	26	5	5,54	316
	26	6	5,69	416
	26	10	8,14	516
	26	20	10,35	616
	26	30	12,89	716
22	34	2	5,44	022
	34	3	5,54	122
	34	4	5,60	222
	34	5	6,13	322
	34	6	6,94	422
	34	10	9,54	522
	34	20	11,96	622
	34	30	15,84	722
27	41	2	5,97	027
	41	3	6,11	127
	41	4	6,74	227
	41	5	6,98	327
	41	6	7,85	427
	41	10	9,74	527
	41	20	13,21	627
	41	30	17,51	727
32	47	2	6,67	032
	47	3	7,07	132
	47	4	7,71	232
	47	5	8,33	332
	47	6	8,83	432
	47	10	10,80	532
	47	20	16,25	632
	47	30	19,72	732
40	55	2	7,75	040
	55	3	8,61	140
	55	4	9,50	240
	55	5	10,35	340
	55	6	11,22	440
	55	10	15,10	540
	55	20	20,55	640
	55	30	25,48	740

Screw for cylindrical adapters E2

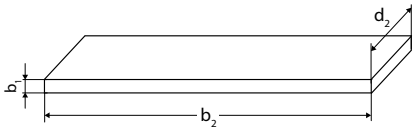




G	L_1 mm	SW mm	Y8 Article no. 83 950 ... EUR	
M6	12	3	2,06	461
M6	16	3	2,06	462
M6	25	3	2,06	463
M8	10	4	2,06	464
M8	12	4	2,06	465
M8	16	4	2,06	466
M8	20	4	2,06	467
M8	25	4	2,06	468
M8	30	4	2,06	469
M10	16	5	2,06	470
M10	20	5	2,06	471
M10	25	5	2,44	472
M10	30	5	2,24	473
M12	12	6	2,44	474
M12	16	6	2,44	475
M12	20	6	2,44	476
M12	25	6	2,44	477

Levelling plates

- ▲ for axial and radial tool holders
- ▲ without mounting thread





b_1 mm	b_2 mm	d_2 mm	Y8 Article no. 83 950 ... EUR	
4	38	14	11,01	210
4	48	14	11,01	211
4	54	14	11,01	212
4	55	12	11,01	213
4	69	16	11,01	214
4	73	14	11,01	215
4	75	12	11,01	216
4	99	16	11,01	217
5	84	20	11,01	218
5	117	20	11,01	219
7	99	25	11,01	220
7	120	25	12,69	221
7	129	25	11,01	222
7	143	25	11,01	223

Clamping screw for cylindrical adapters E1



Thread	Y8 Article no. 83 950 ... EUR	
M10x1x10	4,90	180
M12x1x12	4,90	181
M16x1x13	6,02	182

Lock nut with external thread form ER for sealing rings with internal cooling



for size	Thread	SW mm	Y8 Article no. 83 950 ... EUR	
ER 16	M24x1	19	49,96	328
ER 20	M28x1,5	22	52,51	329
ER 25	M32x1,5	24	54,45	330
ER 32	M40x1,5	32	58,27	335

Zeta® – Clamping adapter



for size	Y7 Article no. 83 950 ... EUR	
ER 16	28,45	495
ER 20	14,99	496
ER 25	16,47	497
ER 32	26,95	498
ER 40	19,48	499

Zeta® – Nut



for size	Thread	$M_{max.}$ Nm	Y7 Article no. 83 950 ... EUR	
ER 16	M24x1	60	35,94	480
ER 20	M28x1,5	75	37,44	481
ER 25	M32x1,5	100	38,93	482
ER 32	M40x1,5	130	43,43	483
ER 40	M50x1,5	150	49,42	484

Zeta® – Torque Socket



for size		Y7 Article no. 83 950 ... EUR	
ER 16	3/8"	34,44	500
ER 20	3/8"	35,94	501
ER 25	1/2"	37,44	502
ER 32	1/2"	41,94	503
ER 40	1/2"	47,94	504

Zeta® – Torque Wrench Adapter

▲ Warning: interface of torque adapter is a 16 mm diameter round shank adapter



for size	Y7 Article no. 83 950 ... EUR	
ER 16	50,91	505
ER 20	52,41	506
ER 25	53,92	507
ER 32	53,92	508
ER 40	58,40	509

Zeta® – Clamping key



for size	Y7 Article no. 83 950 ... EUR	
ER 16	50,91	490
ER 20	52,41	491
ER 25	53,92	492
ER 32	53,92	493
ER 40	58,40	494

Pipe joints

▲ steel pipe



Thread	Pipe Ø mm	form	Y7 Article no. 83 950 ... EUR	
M8x1	5	A	6,85	372
M10x1	6	A	15,10	373
M10x1	8	A	8,58	374
M8x1	5	B	6,85	375
M10x1	6	B	15,10	376
M10x1	8	B	15,10	377

Ball-shaped spray nozzle



	Y8 Article no. 83 950 ... EUR	
Ø 8 - M 5	2,76	200
Ø 10 - M 6	3,49	201
Ø 14 - M 8	3,49	202

Coolant pipe with ball pin

▲ p_{max} = 80 bar



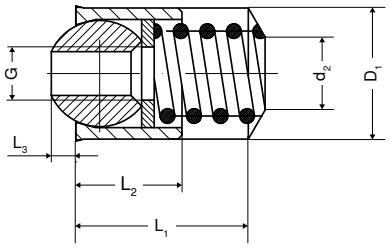
	Y7 Article no. 83 950 ... EUR	
Ø 9	32,95	441
Ø 11	22,46	442

O-Ring



for	Ø	Y8 Article no. 83 950 ... EUR	
VDI 16	15 x 1,5	0,86	205
VDI 20	18,77 x 1,78	0,86	206
VDI 30	28,3 x 1,78	0,86	207
VDI 40	37,77 x 2,62	0,86	208
VDI 50	47,29 x 2,62	0,86	209

Spray nozzle element

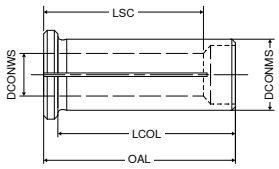




D_1 mm	G	L_1 mm	L_2 mm	L_3 mm	d_2 mm	Y8 Article no. 83 950 ... EUR	
9,88	M4	13	8	2,2	5,5	9,97	247
11,88	M6	15	10	3,0	6,8	9,97	248
13,88	M6	17	12	4,0	6,8	9,97	249

Reducing sleeves for hydraulic and high pressure chucks

▲ thro' coolant to 80 bar

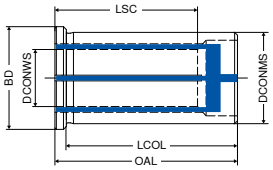




DCONMS	DCONWS	OAL	LCOL	LSC	Y8 Article no. 83 609 ...	
mm	mm	mm	mm	mm	EUR	
12	3	40	36	29	106,90	**103**
12	4	40	36	29	106,90	**104**
12	5	40	36	29	106,90	**105**
12	6	40	36	36	106,90	**106**
12	8	40	36	37	106,90	**108**
20	3	54	50	28	99,72	**203**
20	4	54	50	28	99,72	**204**
20	5	54	50	28	99,72	**205**
20	6	54	50	36	77,80	**206**
20	8	54	50	37	77,80	**208**
20	10	54	50	40	77,80	**210**
20	12	54	50	45	77,80	**212**
20	14	54	50	45	77,80	**214**
20	16	54	50	48	77,80	**216**
25	6	60	56	37	85,77	**256**
25	8	60	56	37	85,77	**258**
25	10	60	56	40	85,77	**260**
25	12	60	56	46	85,77	**262**
25	14	60	56	47	85,77	**264**
25	16	60	56	48	85,77	**266**
25	18	60	56	48	85,77	**268**
25	20	60	56	50	85,77	**270**
32	6	64	60	36	99,72	**306**
32	8	64	60	36	99,72	**308**
32	10	64	60	40	99,72	**310**
32	12	64	60	45	99,72	**312**
32	14	64	60	46	99,72	**314**
32	16	64	60	48	99,72	**316**
32	18	64	60	49	99,72	**318**
32	20	64	60	50	99,72	**320**
32	25	64	60	56	99,72	**325**

Reduction sleeves with coolant hole for hydraulic and high pressure chucks

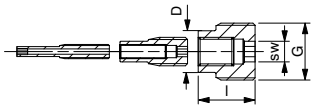
▲ with coolant holes, for flexible diameter application





DCONMS	DCONWS	BD	OAL	LCOL	LSC	NEW Y8 Article no. 83 611 ...	
mm	mm	mm	mm	mm	mm	EUR	
12	3	16	44	40	29	201,30	**10300**
12	4	16	44	40	29	201,30	**10400**
12	5	16	44	40	29	201,30	**10500**
12	6	16	44	40	36	201,30	**10600**
12	8	16	44	40	37	201,30	**10800**
20	3	25	54	50	28	126,70	**20300**
20	4	25	54	50	28	126,70	**20400**
20	5	25	54	50	28	126,70	**20500**
20	6	25	54	50	36	126,70	**20600**
20	8	25	54	50	37	126,70	**20800**
20	10	25	54	50	40	126,70	**21000**
20	12	25	54	50	45	126,70	**21200**
20	14	25	54	50	45	126,70	**21400**
20	16	25	54	50	48	126,70	**21600**
32	6	36	64	60	36	143,20	**30600**
32	8	36	64	60	36	143,20	**30800**
32	10	36	64	60	40	143,20	**31000**
32	12	36	64	60	45	143,20	**31200**
32	14	36	64	60	46	143,20	**31400**
32	16	36	64	60	48	143,20	**31600**
32	18	36	64	60	49	143,20	**31800**
32	20	36	64	60	50	143,20	**32000**
32	25	36	64	60	56	143,20	**32500**

Stop screw for use with reducing sleeves in hydraulic chuck





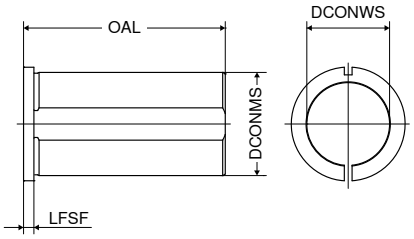
G	D mm	Y7 Article no. 83 950 ... EUR	
M4x0,5x26 - SW2	2,8	8,27	**425**
M8x1x19 - SW2,5	5,8	8,27	**428**
M10x1x16 - SW3	5,8	8,27	**426**
M16x1x16 - SW5	11,7	8,27	**427**

Adaptation for the use of stop screws for reducing sleeves

DCONMS in mm			
12		83 950 425	83 950 426
20	83 950 425	83 950 428	83 950 427
25	83 950 425	83 950 428	83 950 427
32		83 950 428	83 950 427

Slotted reduction sleeves

- for cylindrical and other tool holders
- for tools with cylindrical shank

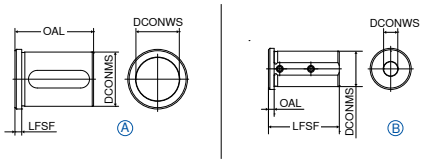




DCONMS	DCONWS	OAL	LFSF	Y8 Article no. 83 271 ...	
mm	mm	mm	mm	EUR	
20	6	30	4	56,63	206
20	8	30	4	44,35	208
20	10	30	4	44,35	210
20	12	30	4	44,35	212
20	15	30	4	44,35	215
20	16	30	4	44,35	216
25	6	40	4	61,03	256
25	8	40	4	47,50	258
25	10	40	4	47,50	260
25	12	40	4	47,50	262
25	15	40	4	62,18	265
25	16	40	4	47,50	266
25	20	40	4	47,50	270
32	6	50	4	62,49	326
32	8	50	4	47,50	328
32	10	50	4	47,50	330
32	12	50	4	47,50	332
32	15	50	4	47,50	335
32	16	50	4	47,50	336
32	20	50	4	47,50	340
40	10	78	4	57,36	410
40	12	78	4	57,36	412
40	15	78	4	57,36	415
40	16	78	4	57,36	416
40	20	78	4	57,36	420
40	25	78	4	57,36	425
40	32	78	4	57,36	432
50	20	88	4	76,96	520
50	25	88	4	76,96	525
50	32	88	4	76,96	532
50	40	88	4	76,96	540

Reduction sleeves for direct clamping

- for tools with cylindrical shank

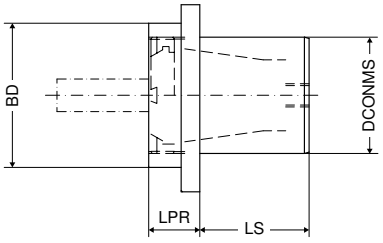




DCONMS	DCONWS	OAL	LFSF	Fig.	Y8 Article no. 83 272 ...	
mm	mm	mm	mm		EUR	
25	6	50	4	B	63,86	256
25	8	50	4	B	49,49	258
25	10	50	4	B	49,49	260
25	12	50	4	B	49,49	262
25	14	50	4	A	63,86	264
25	16	50	4	A	49,49	266
25	20	50	4	A	49,49	270
32	6	58	5	B	65,96	326
32	8	58	5	B	65,96	328
32	10	58	5	B	51,07	330
32	12	58	5	B	51,07	332
32	16	58	5	A	51,07	336
32	20	58	5	A	51,07	340
32	25	58	5	A	51,07	345
40	8	58	5	B	80,11	408
40	10	58	5	B	65,96	410
40	12	58	5	B	71,30	412
40	16	58	5	A	71,30	416
40	20	58	5	A	71,30	420
40	25	58	5	A	71,30	425
40	32	58	5	A	71,30	432
50	12	75	5	B	74,24	512
50	16	75	5	A	74,24	516
50	20	75	5	A	74,24	520
50	25	75	5	A	74,24	525
50	32	75	5	A	74,24	532
50	40	75	5	A	74,24	540

Collet chuck for boring bar holder

Scope of supply:
Collet adapter with lock nut





DCONMS	for collet	BD	LS	LPR	Y7 Article no. 83 950 ...	
mm		mm	mm	mm	EUR	
25	428E (ER20)	35	29	18	316,00	390
32	430E (ER25)	40	32	20	347,40	391 1)
40	470E (ER32)	50	38	20	322,00	392 1)

1) Not ex-stock

17

Taper wiper

▲ version made from hard wood with suede inserts



Adapter	Y8 Article no. 83 715 ... EUR	
MK 1	5,89	001
MK 2	6,10	002
MK 3	8,14	003
MK 4	8,97	004
MK 5	13,21	005
HSK 32	43,20	320
HSK 40	45,82	400
HSK 50	46,55	500
HSK 63	54,42	630
HSK 80	70,25	800
HSK 100	82,53	100
SK 30	9,83	130
SK 40	10,80	140
SK 50	12,89	150

Assembly device for ISO adapters

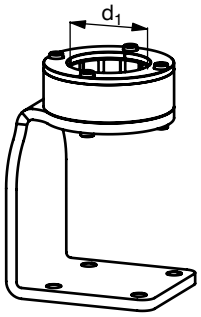
▲ aluminium



Adapter	Y7 Article no. 80 720 ... EUR	
SK 30	100,50	030
SK 40	100,50	040
SK 50	167,70	050

Assembly fixture for tool holders

▲ gripping by roller
▲ secure clamping
▲ quick assembly, no additional clamping necessary



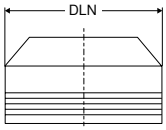


Adapter	d_1 mm	Y7 Article no. 80 722 ... EUR	
HSK 32, PSC 32	32,0	155,90	032
HSK 40, PSC 40	40,0	155,90	040
MAS-BT 30	46,0	128,80	046
DIN 69871 / DIN 2080 - SK 30, HSK 50, PSC 50	50,0	128,80	050
DIN 69871 / DIN 2080 - SK 40, HSK 63, PSC 63, MAS-BT 40, ANSI-CAT 40	63,0	133,80	063
DIN 69871 - SK 50	97,5	249,30	097
HSK 100, MAS-BT 50, ANSI-CAT 50	100,0	249,30	100

Safety Note: The clamping devices must be free of oil and grease to avoid slipping!

ER Standard lock nut for precision collet chuck

Centro-P



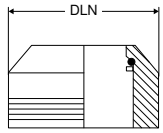


for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ...		for seals Y8 Article no. 84 950 ...	
				EUR		EUR	
426E (ER16)	1 - 10	30	50	28,15	001	35,19	011
428E (ER20)	1 - 13	32	70	31,16	002	38,22	012
430E (ER25)	2 - 16	40	85	31,16	003	38,22	013
470E (ER32)	2 - 20	50	135	33,15	005	40,23	015
472E (ER40)	3 - 26	63	190	45,25	007	54,30	017

OZ Standard lock nut for precision collet chuck

▲ can be used without sealing ring

Centro-P

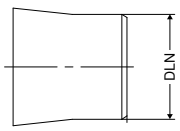




for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ...		for seals Y8 Article no. 84 950 ...	
				EUR		EUR	
462E (OZ)	2 - 25	50	140	35,19	009	42,22	020

Tapered lock nut for precision collet chuck

Centro-P

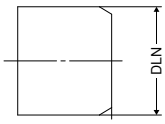




for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ...		for seals Y8 Article no. 84 950 ...	
				EUR		EUR	
426E (ER16)	1 - 10	24	50	33,15	031		
426E (ER16)	1 - 10	24	25			41,23	033

Mini lock nut for precision collet chuck

Centro-P





for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ...		for seals Y8 Article no. 84 950 ...	
				EUR		EUR	
4004E (ER08)	1 - 5	10	5 - 8	38,19	040		
4008E (ER11)	1 - 7	16	10	33,15	041		
4008E (ER11)	Ø 3,0	16	10	63,35	042 1)		
4008E (ER11)	Ø 4,0	16	10	63,35	043 1)		
4008E (ER11)	Ø 5,0	16	10	63,35	044 1)		
4008E (ER11)	Ø 6,0	16	10	63,35	045 1)		
4008E (ER11)	Ø 7,0	16	10	63,35	046 1)		
426E (ER16)	1 - 10	22	28	33,15	034	41,22	035

1) directly sealed

Collet removal aid for Mini lock nut for precision collet chuck

Centro-P



for collet	Y8 Article no. 84 950 ... EUR	
4004E / ER 08	19,75	070
4008E / ER 11	27,65	072

Roll key

- version CP = for Centro-P lock nuts
- version STD = for standard lock nuts



for size	d_1 mm	Y8 Article no. 84 950 ... EUR	
4004E / ER08 CP mini	10	85,46	**050**
4008E / ER 11 CP mini / mini	16	60,32	**080** [1]
426E / ER 16 CP / ER 16 mini	22	60,16	**026**
426E / ER 16 CP konisch / CP mini	24	60,32	**082** [2]
426E / ER 16 CP	30	60,16	**027**
426E / ER 16 STD	32	60,16	**028**
428E / ER 20 STD	35	60,16	**029**
430E / ER 25 CP	40	60,32	**054**
430E / ER 25 STD	42	60,32	**055**
470E / ER 32 CP + STD / OZ462E CP	50	60,32	**056**
472E / ER 40 CP + STD	63	66,36	**057**

1) Special key for mini lock nuts

2) Key for tapered lock nuts / Special key for mini lock nuts

Additional roll key device for torque key

- version CP = for Centro-P lock nuts
- version STD = for standard lock nuts



for size	d_1 mm	$M_{max.}$ Nm	Square mm	Y8 Article no. 84 950 ... EUR	
4008E / ER 11 CP	16	20 - 100	9 x 12	60,32	**060** [1]
426E / ER 16 CP / ER 16 mini	22	20 - 100	9 x 12	60,16	**170**
426E / ER 16 CP	24	20 - 100	9 x 12	60,32	**061** [1]
426E / ER 16 CP	30	20 - 100	14 x 18	60,16	**171**
426E / ER 16 STD	32	20 - 100	14 x 18	60,16	**172**
426E / ER 20 STD	35	20 - 100	14 x 18	60,16	**173**
430E / ER 25 CP	40	40 - 200	14 x 18	60,32	**065**
430E / ER 25 STD	42	40 - 200	14 x 18	60,32	**066**
470E / ER 32 CP + STD / OZ 462E CP	50	40 - 200	14 x 18	60,32	**067**
472E / ER 40 CP + STD	63	40 - 200	14 x 18	66,36	**068**

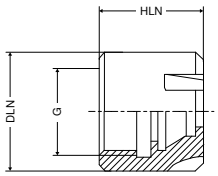
1) for mini and tapered lock nuts

Torque key



$M_{max.}$ Nm	Square mm	Y8 Article no. 84 435 ... EUR	
5-30	9 x 12	145,90	**030**
10-80	9 x 12	171,50	**080**
20 - 200	14 x 18	174,50	**200**

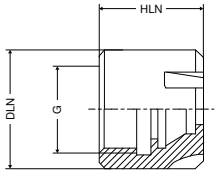
Mini ER lock nut





for collet	G	DLN	HLN	TQX	W7 Article no. 62 950 ... EUR	
		mm	mm	Nm		
4004E (ER08)	M10x0,75	12	11,0	8	25,06	067
4008E (ER11)	M13x0,75	16	12,0	18	24,43	065
426E (ER16)	M19x1	22	18,0	28	23,90	066
428E (ER20)	M24x1	28	19,5	35	26,95	068
430E (ER25)	M30x1	35	21,0	40	29,46	069

Mini ER lock nut for sealing rings

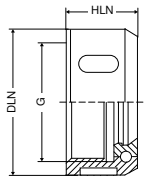




for collet	G	DLN	HLN	TQX	for seals Y8 Article no. 83 950 ... EUR	
		mm	mm	Nm		
426E (ER16-DS)	M19x1	22	22,0	28	36,45	058
428E (ER20-DS)	M24x1	28	23,2	35	38,87	059
430E (ER25-DS)	M30x1	35	24,7	40	40,56	060

OZ lock nut Form B + C

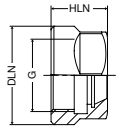
▲ with ball bearings





for collet	G	DLN	HLN	TQX	W7 Article no. 62 950 ... EUR	
		mm	mm	Nm		
415E / 421E (OZ)	M33x1,5	43	24,0	85	31,56	050
459E / 462E (OZ)	M48x2	60	30,0	140	34,71	051
460E / 467E (OZ)	M60x2,5	72	33,5	170	43,41	052

ER Lock nut

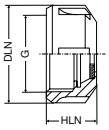






for collet	G	DLN	HLN	W7 Article no. 62 950 ... EUR		for seals Y8 Article no. 83 950 ... EUR	
		mm	mm				
426E (ER16)	M22x1,5 - SW25	28	18,0	17,82	044		
428E (ER20)	M25x1,5 - SW30	34	19,5	18,87	045		
428E (ER20)	M25x1,5 - SW30	34	22,5			32,71	053

ER Lock nut







for collet	G	DLN	HLN	W7 Article no. 62 950 ... EUR		for seals Y8 Article no. 83 950 ... EUR	
		mm	mm				
426E (ER16)	M22x1,5	32	17,0	17,82	054		
426E (ER16)	M22x1,5	32	22,0			30,62	054
430E (ER25)	M32x1,5	42	20,0	19,92	055		
430E (ER25)	M32x1,5	42	24,7			34,72	055
470E (ER32)	M40x1,5	50	22,3	18,56	056		
470E (ER32)	M40x1,5	50	27,0			36,95	056
472E (ER40)	M50x1,5	63	25,3	18,04	057		
472E (ER40)	M50x1,5	63	30,7			43,57	057

MultiChange – Spanner



SW mm	$M_{max.}$ Nm	Y8 Article no. 84 357 ...	EUR	
6	5		6,90	006
8	12,5		7,08	008
10	15		7,96	010
13	20		8,61	013
16	25		11,54	016
19	25		15,10	019 1)
21	25		16,57	021 1)
24	25		17,41	024 1)

1) only for MultiChange reamers

MultiChange – Spanner Head



SW mm	$M_{max.}$ Nm	Square mm	Y8 Article no. 84 358 ...	EUR	
6	5	9 x 12		49,70	006
8	12,5	9 x 12		49,70	008
10	15	9 x 12		49,70	010
13	20	9 x 12		49,70	013
16	25	9 x 12		49,70	016
19	25	9 x 12		103,80	190
21	25	9 x 12		145,70	210
24	25	9 x 12		145,70	240
19	25	14 x 18		88,29	019 1)
21	25	14 x 18		108,10	021 1)
24	25	14 x 18		108,10	024 1)

1) only for MultiChange reamers

Suitable torque keys can be found on → **Page 36.**

Assembly instructions for MultiChange head

- Cleaning of cone, thread and face of the milling head
- Cleaning of cone and thread face of the holder
- Cleaning of cone, thread and face of the holders
- Cutter head screwed clockwise by hand into the holder (be careful if using gloves)
- Clamp the exchange milling head with the torque wrench and the correct spanner to the specified tightening torque (according to table).
- The gap between the head and holder must be closed (force and positive connection)



Torque wrench must be horizontally aligned to key area, take care not to tilt in the key area



Important for the sensitive tuning is an additional placing of the hand on the exchange milling head. This means the torque can be better maintained.

TORX® Screwdriver



	Y7 Article no. 80 950 ... EUR	
T06 - 60 mm	6,36	100
T07 - 60 mm	6,36	101
T08 - 60 mm	6,36	102
T09 - 60 mm	6,87	103
T10 - 80 mm	7,05	104
T15 - 80 mm	7,05	105
T20 - 100 mm	7,52	106
T25 - 100 mm	7,93	107
T30 115	8,80	092

TORX® MagicSpring®



	Y7 Article no. 80 950 ... EUR	
MS T06 - 60 mm	8,44	108
MS T07 - 60 mm	7,80	109
MS T08 - 60 mm	7,80	110
MS T09 - 60 mm	8,88	111
MS T10 - 80 mm	9,14	112
MS T15 - 80 mm	9,28	113
MS T20 - 100 mm	9,95	114
MS T25 - 100 mm	10,22	115
MS T30 - 100 mm	12,10	131

TORX PLUS® MagicSpring®



	Y7 Article no. 80 950 ... EUR	
MS T06 - IP - 60 mm	10,39	123
MS T07 - IP - 60 mm	10,22	124
MS T08 - IP - 60 mm	10,20	125
MS T09 - IP - 60 mm	11,24	126
MS T10 - IP - 80 mm	11,56	127
MS T15 - IP - 80 mm	11,89	128
MS T20 - IP - 100 mm	12,54	129
MS T25 - IP - 100 mm	14,50	130

A stainless steel spring holds MagicSpring ® Torx and Torx Plus screws in place.





TORX PLUS® Screwdriver



	Y7 Article no. 80 950 ... EUR	
T06 - IP - 60 mm	8,11	116
T07 - IP - 60 mm	7,95	117
T08 - IP - 60 mm	6,28	039
T09 - IP - 60 mm	8,63	118
T10 - IP - 80 mm	8,91	119
T15 - IP - 80 mm	9,15	120
T20 - IP - 100 mm	9,80	121
T25 - IP - 100 mm	10,27	122

TorqueFix® Handle

- ▲ with fixed torque moment
- ▲ Standard: EN ISO 6798, BS EN 26789, ASME B107.14M
- ▲ Accuracy: ± 6 %, based on national standards
- ▲ Bits to be clamped in the universal holder only



$M_{max.}$ Nm	Y7 Article no. 80 021 ... EUR	
0,6	97,92	006
0,7	85,92	007
0,8	87,99	008
1,0	87,99	010
1,2	97,04	012
1,6	97,04	016
1,8	97,04	018
2,0	97,04	020
2,2	97,04	022
3,0	102,50	030
3,2	102,50	032
4,0	102,50	040
5,0	102,50	050
5,5	114,50	055
6,0	114,50	060

TorqueVario®-S

- ▲ Patented handle

Scope of supply:

incl. Torque-Setter setting tool



$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
0,4 - 1,0	127,50	046
0,5 - 2,0	118,90	191
0,8 - 5,0	128,60	192
2,0 - 7,0	131,90	193

17

Torque-Fix-Tplus T-handle torque wrench

- with fixed torque
- Standards: EN ISO 6798, BS EN 26789, ASME B107.14M
- Accuracy: ± 6%, based on national standards
- for holding Tplus interchangeable torque blades

Scope of supply:
incl. Plastic box and inspection report



$M_{max.}$ Nm	SW mm	Y7 Article no. 80 950 ... EUR	
8	6	176,70	183
12	6	179,90	140

Torque Vario-STplus torque tool handle

- with variable torque adjustment
- Norm: EN ISO 6798, BS EN 26789, ASME B107.14M
- Accuracy: ± 6%, traceable to national standards
- for holding Torque Tplus interchangeable blades

Scope of supply:
incl. Plastic box and inspection report



$M_{max.}$ Nm	SW mm	Y7 Article no. 80 950 ... EUR	
5 - 14	6	198,50	182

Tplus interchangeable torque blade

- for T-handle torque tools



$M_{max.}$ Nm	SW mm	Y7 Article no. 80 950 ... EUR	
12	(6) 4	8,51	144

Interchangeable blade for Hex drive for Micro Precision Chucks

- 175 mm long



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
SW1,5	0,9	5,60	151
SW2	1,8	5,60	152
SW2,5	3,8	5,60	153
SW3	5,5	5,60	154
SW4	8,0	5,60	155

Replaceable Blade for TORX®

- 175 mm long



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T5 -SW4	0,4	5,89	048
T6 -SW4	0,6	4,76	031
T7 -SW4	0,9	4,76	032
T8 -SW4	1,3	4,76	033
T9 -SW4	2,5	4,76	034
T10 -SW4	3,8	4,76	035
T15 -SW4	5,5	4,76	036
T20 -SW4	8,0	4,76	037
T25 -SW4	8,0	4,76	038

Replaceable Blade for TORX PLUS®

- 175 mm long



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T05IP -SW4	0,5	5,26	049
T06IP -SW4	0,8	5,26	050
T07 - IP -SW4	1,3	5,26	051
T08 - IP -SW4	2,0	4,76	043
T09IP -SW4	3,0	5,26	052
T10IP -SW4	4,5	5,26	053
T15 - IP -SW4	6,6	5,26	054
T20 - IP -SW4	8,0	5,26	055
T25IP -SW4	8,0	5,26	056

Universal holder for Bits

▲ 162 mm long



	Y7 Article no. 80 950 ...	EUR	
DIN3126-C/E 6,3-1/4"		7,58	014

Quick change holder for Torque Tplus Bits

▲ for T handle torque tool



	Y7 Article no. 80 950 ...	EUR	
DIN3126-C/E 6,3-1/4"		58,55	172

TORX® Bits short (25 mm)

▲ DIN3126-C 6,3 - 1/4"



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T06	0,9	0,91	015
T07	1,7	0,91	016
T08	2,6	0,91	017
T09	3,4	0,91	018
T10	4,5	0,91	019
T15	7,7	0,91	020
T20	12,7	0,91	021
T25	19,0	0,91	022
T30	37,4	0,96	093

TORX® Bits long (50 mm)

▲ DIN3126-E 6,3 - 1/4"



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T06	0,9	3,34	023
T07	1,7	3,34	024
T08	2,6	3,34	025
T09	3,4	3,34	026
T10	4,5	3,34	027
T15	7,7	3,34	028
T20	12,7	3,34	029
T25	19,0	3,34	030
T30	37,4	4,49	094

TORX® Bits long (70 mm)

▲ DIN3126-E 6,3 - 1/4"



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T06	0,9	5,03	173
T07	1,7	5,03	174
T08	2,6	5,03	175
T09	3,4	5,03	176
T10	4,5	5,03	177
T15	7,7	5,03	178
T20	12,7	5,03	179
T25	19,0	5,03	180
T30	37,4	5,03	181

TORX PLUS® Bits short (25 mm)

▲ DIN3126-C 6,3 - 1/4"



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T05 - IP	0,5	2,70	065
T06 - IP	0,9	2,70	066
T07 - IP	1,7	2,70	067
T08 - IP	2,6	2,70	068
T09 - IP	3,4	2,70	069
T10 - IP	4,5	2,70	070
T15 - IP	7,7	2,70	071
T20 - IP	12,7	2,70	072
T25 - IP	19,0	2,70	073

TORX PLUS® Bits long (50 mm)

▲ DIN3126-E 6,3 - 1/4"



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T05 - IP	0,5	5,46	074
T06 - IP	0,9	5,26	075
T07 - IP	1,7	5,26	076
T08 - IP	2,6	4,92	040
T09 - IP	3,4	5,26	077
T10 - IP	4,5	5,26	078
T15 - IP	7,7	5,26	079
T20 - IP	12,7	5,26	080
T25 - IP	19,0	5,26	081

TORX® Screwdriver



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T05x35	0,5	3,86	082
T06x35	0,9	3,81	083
T07x35	1,7	3,81	084
T08x40	2,6	3,81	085
T09x40	3,4	4,15	086
T10x40	4,5	4,15	087
T15x45	7,7	4,46	088
T20x45	12,7	4,86	089

Clamping key



Size	$M_{max.}$ Nm	Y7 Article no. 80 397 ... EUR	
SW 2	1,9	3,91	020
SW 2,5	3,8	3,97	025
SW 3	6,6	3,85	030
SW 4	16	3,91	040
SW 5	30	4,24	050
SW 6	52	4,92	060
SW 8	120	6,03	080
SW 10	220	10,06	100

TORX® Screwdriver sets



	Y7 Article no. 80 950 ... EUR	
T06, T07, T08, T09, T10, T15, T20	37,84	090

TORX PLUS® Screwdriver



for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... EUR	
T05 - IP x35	0,5	6,06	057
T06 - IP x35	0,9	6,06	058
T07 - IP x35	1,7	6,00	059
T08 - IP x40	2,6	5,90	060
T09 - IP x40	3,4	6,35	061
T10 - IPx40	4,5	6,35	062
T15 - IP x45	7,7	6,76	063
T20 - IP x45	12,7	7,49	064

TORX PLUS® Screwdriver sets



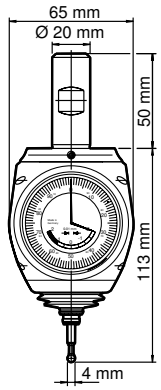
	Y7 Article no. 80 950 ... EUR	
IP06, IP07, IP08, IP09, IP10, IP15, IP20	54,41	091

Universal 3D-Tester

- quick and accurate positioning
- for locating and/or setting the zero point of the workpiece
- with adjustable concentricity
- usable in all 3 axes (x, y, z)
- for all CNC and erosion machines (insulation between stylus and case)
- reading of actual dimensions is independent of direction
- reading precision 0.01 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert





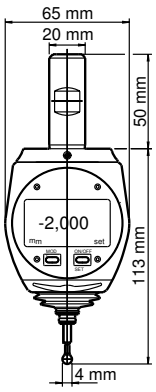
	XX Article no. 85 290 ... EUR	
Universal 3D-Tester	324,10	**100**

Digital 3D-Tester

- quick and accurate positioning
- for locating and/or setting the zero point of the workpiece
- with adjustable concentricity
- usable in all 3 axes (x, y, z)
- for all CNC and erosion machines (insulation between stylus and case)
- reading of actual dimensions is independent of direction
- reading precision 0.001 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert





	XX Article no. 85 291 ... EUR	
Digital 3D-Tester	631,50	**100**

Zero height setting gauge

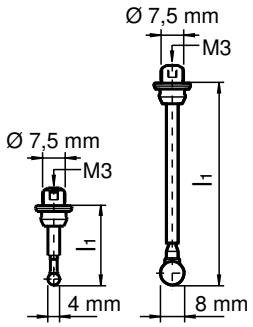
- to determine the point of reference and/or for adjusting tools “to zero”
- plate Ø 10 mm
- plate is hardened, non magnetic



	h mm	Y7 Article no. 85 900 ... EUR	
Zero height setting gauge	100	131,10	**018**

Stylus for 3D-Tester

- with movement of 2 mm beyond the zero point a break-off ceramic insert prevents damage to the unit
- if the stylus is broken remove and insert a new stylus
- check concentricity and adjust if necessary





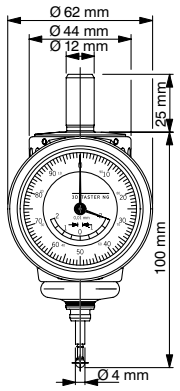
l_1 mm	XX Article no. 85 290 ... EUR	
25	24,83	**102**
65	41,38	**104**

Universal 3D-Tester HQ

- fast and accurate positioning at reference edges
- development of the existing universal 3D-Testers
- improved mechanics
- compact size
- characterised by over travel safety
- functionality as with 85 290 100
- accuracy 0,01 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert





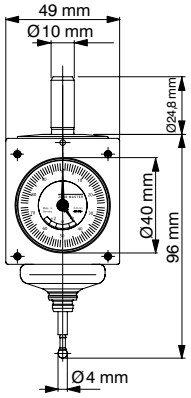
	XX Article no. 85 292 ...	
	EUR	
Universal 3D-Tester HQ	324,10	**100**

Universal 3D-Tester Mini

- fast and accurate positioning at reference edges
- very small universal 3D-Tester
- particularly suitable for machines with small spindle taper e.g. SK 30 or HSK 32
- low overhang length thanks to short housing
- characterised by over travel safety
- functionality as with 85 290 100
- accuracy 0,01 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert





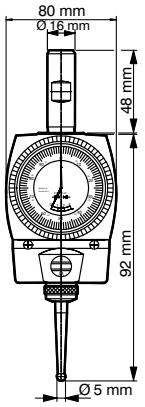
	XX Article no. 85 295 ...	
	EUR	
Universal 3D-Tester Mini	324,10	**100**

Centre finder

- centralise holes and features quickly and accurately
- simple operation
- dial gauge remains in the operators vision during process
- centring accuracy 0,003 mm

Scope of supply:

3D-Tester incl. straight stylus and telescopic stop

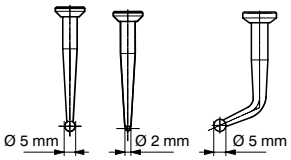




	XX Article no. 85 299 ...	
	EUR	
Centre finder	430,30	**100**

Range with probe tip Ø 5 mm holes
Ø 6–125 mm, shaft Ø 0–125 mm

Stylii for Centre Finder





	XX Article no. 85 299 ...	
	EUR	
Straight stylus / Ball-Ø 2 mm	32,47	**102**
Straight stylus / Ball-Ø 5 mm	29,92	**104**
Curved stylus / Ball Ø 5 mm	38,83	**106**

Telescopic rod for Centre Finder

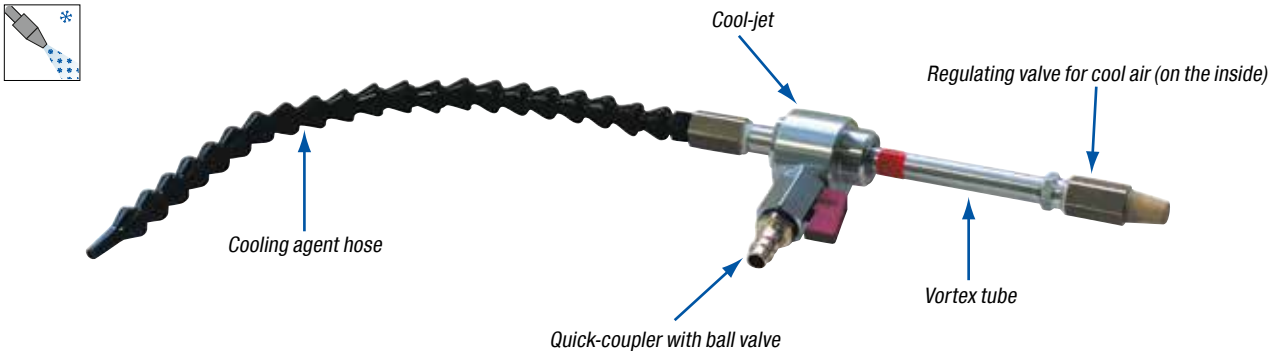
D mm	L_1 mm	XX Article no. 85 299 ... EUR	
6	478	11,14	**111**

Advantages with the use of the cool air nozzle

The main advantages are that cooling agent disposal is not required and tool life increases up to 100% when dry machining

In order to improve the service life when dry machining, we recommend the use of our cooling nozzle, which is applicable with a normal compressed air connection from a pressure of 6 bar.

Not only for **cooling the tool and workpiece** it is primarily **for chip removal** to preventchip **jamming**.



Cool-jet	Y7 Article no. 81 900 ... EUR	
3–7 bar air pressure, at -46 °C	584,10	100

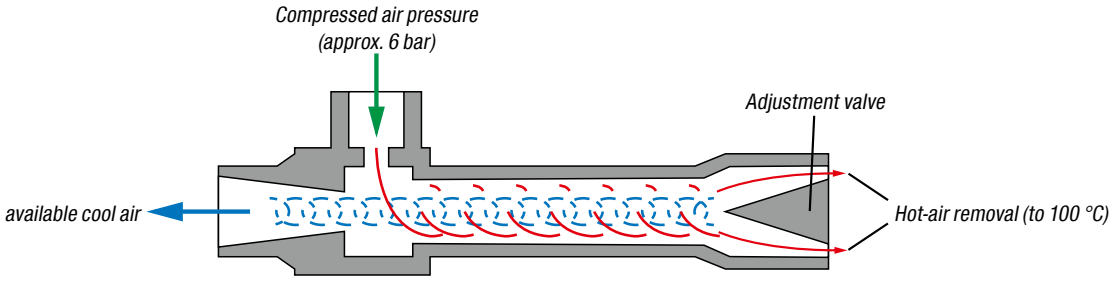
Accessories	Y7 Article no. 81 900 ... EUR	
Magnetic plate Ø 80 mm without clamping arm	31,03	101
Spare tube, length 300 mm	31,03	104
Jet silencer (air filter)	6,04	105
Clamping arm, length 75 mm	91,75	106
Complete set (with magnetic set and clamping arm), weight 0,4 kg	119,60	107

Technical description – operating instruction

The principle of the cold-air nozzle is based on the use of vortex tubes. Ordinary air is divided into cold and hot air streams.

Without additional power supply or moving parts the cool air nozzle can produce **cooling performance of up to 733 W** or **Temperatures of approx. -42 °C** are produced and requires only operating pressure air of approx. 6 bar.

A water trap or service unit should be mounted. A regulating valve in the hot-air outlet regulates the temperatures and currents



Utilizable air temperature measured at the effective discharge of the vortex tube (not the nozzle end)

Entrance pressure				
	3 bar	-31 °C	up to	-6 °C
	4 bar	-35 °C	up to	-8 °C
	5 bar	-39 °C	up to	-10 °C
	6 bar	-42 °C	up to	-11 °C
	7 bar	-46 °C	up to	-13 °C

Air consumption at an inlet temperature of + 21 ° C and an inlet pressure of 6.9 bar: 7,08 l / sec. (25.5 m³ / h)

In order to operate the regulating valve, the silencer must be unscrewed - there is a burn danger! The valve of the hot air side can reach up to 100 °C: Before contact, allow cooling!

17





Solid drilling and bore machining

1 HSS drilling

2 Solid carbide drilling

3 Indexable insert drilling

4 Reaming and Countersinking

5 Spindle Tooling

Threading

6 Taps and thread formers

7 Circular and Thread Milling

8 Thread turning

Turning

9 Turning Tools

10 EcoCut

11 Grooving Tools

12 Miniature turning tools

Milling

13 HSS Milling Cutters

14 Solid Carbide milling cutters

15 Milling tools with indexable inserts

Tool Clamping

16 Adapters

17 Accessories

18 Material examples and article no. index

Extended Material Examples for the Cutting Data Tables

	Index	Material	Strength N/mm² / HB / HRC
P	1.1	General construction steel	< 800 N/mm²
	1.2	Free cutting steel	< 800 N/mm²
	1.3	Hardened steel, non alloyed	< 800 N/mm²
	1.4	Alloyed hardened steel	< 1000 N/mm²
	1.5	Tempering steel, unalloyed	< 850 N/mm²
	1.6	Tempering steel, unalloyed	< 1000 N/mm²
	1.7	Tempering steel, alloyed	< 800 N/mm²
	1.8	Tempering steel, alloyed	< 1300 N/mm²
	1.9	Steel castings	< 850 N/mm²
	1.10	Nitriding steel	< 1000 N/mm²
	1.11	Nitriding steel	< 1200 N/mm²
	1.12	Roller bearing steel	< 1200 N/mm²
	1.13	Spring steel	< 1200 N/mm²
	1.14	High-speed steel	< 1300 N/mm²
	1.15	Cold working tool steel	< 1300 N/mm²
	1.16	Hot working tool steel	< 1300 N/mm²
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²
	2.2	Stainless steel, ferritic	< 750 N/mm²
	2.3	Stainless steel, martensitic	< 900 N/mm²
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²
	2.6	Stainless steel, austenitic	< 750 N/mm²
	2.7	Heat resistant steel	< 1100 N/mm²
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²
	3.5	White malleable cast iron	270–450 N/mm²
	3.6	White malleable cast iron	500–650 N/mm²
	3.7	Black malleable cast iron	300–450 N/mm²
	3.8	Black malleable cast iron	500–800 N/mm²
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²
	4.7	Copper wrought alloys	< 700 N/mm²
	4.8	Special copper alloys	< 200 HB
	4.9	Special copper alloys	< 300 HB
	4.10	Special copper alloys	> 300 HB
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²
	4.12	Long-chipping brass	< 600 N/mm²
	4.13	Thermoplastics	
	4.14	Duroplastics	
	4.15	Fibre-reinforced plastics	
	4.16	Magnesium and magnesium alloys	< 850 N/mm²
	4.17	Graphite	
	4.18	Tungsten and tungsten alloys	
	4.19	Molybdenum and molybdenum alloys	
S	5.1	Pure nickel	
	5.2	Nickel alloys	
	5.3	Nickel alloys	< 850 N/mm²
	5.4	Nickel molybdenum alloys	
	5.5	Nickel-chromium alloys	< 1300 N/mm²
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²
	5.7	Heat resistant alloys	< 1300 N/mm²
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²
	5.9	Pure titanium	< 900 N/mm²
	5.10	Titanium alloys	< 700 N/mm²
	5.11	Titanium alloys	< 1200 N/mm²
H	6.1	Tempered steel	< 45 HRC
	6.2		46–55 HRC
	6.3		56–60 HRC
	6.4		61–65 HRC
	6.5		65–70 HRC

On the following 13 pages you will find an extension of the material examples to our usual indexes with additional international standards.

Overview of standards:

DIN

Deutsche **I**ndustrie **N**orm (German Standard)

AFNOR

Association **F**rancaise de **N**ormalisation (French Standard)

UNI

Unificazione **I**taliana (Italian Standard)

ČSN

Czechoslovakian Standard

BS

British **S**tandards

SIS

Standardiseringen **i** **S**verige (Swedish Standard)

UNE

Spanish Standard

JIS

Japanese **I**ndustrial **S**tandard

GOST

Soviet Standard

UNS

Unified **N**umbering **S**ystem

USA

Under **USA** several American standards are summarized

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
P	1.1	1.0037	St 37-2	E 24-2		11 343				STKM 12 C			
		1.0044	St 44-2	E 28-2	Fe 430 B FN	11 443	4360-43 B	1412		SM 41 B			A 570 Gr. 40
		1.0050	St 50-2	A 50-2	Fe 490	11 500	4360-50 B	2172		SS 50	BSt 5 ps; sp		A 570 Gr. 50
		1.0060	St 60-2	A 60-2	Fe 590; Fe 60-2	11 600	4360-SSE; SSC			SM 58	St 6 ps; sp		
		1.0116	St 37-3	E 24-3; E 24-4	Fe 360 D FF	11 378	4360-40 C	1312; 1313			St 3 kp; ps; sp		A 573 Gr. 58
		1.0570	St 52-3	E 36-3; E 36-4	Fe 510 B; C; D	11 523	4360-50 B	2132		SM 50 YA	17 GS		
	1.2	1.0711	9 S 20		CF 9 S 22		220 M 07			SUM 21		G 12120	1212
		1.0715	9 SMn 28	S 250	CF 9 SMn 28	11 109	230 M 07	1912	F-211 / F-2111	SUM 22		G 12130	1213
		1.0718	9 SMnPb 28	S 250 Pb	CF 9 SMnPb 28			1914	F-212 / F-2112	SUM 22 L		G 12134	12 L 13
		1.0721	10 S 20	10 F 1	CF 10 S 20	10 110	210 M 15		F-2121				1108
		1.0722	10 SPb 20	10 PbF 2	CF 10 SPb 20				F-2122				11 L 08
		1.0723	15 S 20				210 A 15	1922		SUM 32			
		1.0736	9 SMn 36	S 300	CF 9 SMn 36		240 M 07		F-2113			G 12150	1215
		1.0737	9 SMnPb 36	S 300 Pb	CF 9 SMnPb 36			1926	F-2114			G 12144	12 L 14
		1.0726	35 S 20	35 MF 4		11 140	212 M 36	1957	F-210.G			G 11400	1140
		1.0727	45 S 20	45 MF 4			212 M 44	1973				G 11460	1146
		1.0728	60 S 20	60 MF 4									
		1.0757	46 SPb 2										
	1.3	1.0301	C 10	AF 34 C 10; XC 10	C 10	12 010	045 M 10			S 10 C	10	G 10100	1010
		1.0401	C 15	AF3 7 C 12; XC 18	C 15; C 16	12 020	080 M 15	1350	F-111			G 10170	1015
		1.0481	17 Mn 4			11 748							
		1.1121	Ck 10	XC 10	C 10	12 010	045 M 10	1265	F-1510	S 10 C; S 9 CK	08; 10	G 10100	1010
		1.1141	Ck 15	XC 15; XC 18	C 15; C 16	12 020	080 M 15	1370	F-1511	S 15 C; S 15 CK	15	G 10170	1015
	1.4	1.5732	14 NiCr 10	14 NC 11	16 NiCr 11				F-1540	SNC 415 (H)			3415
		1.5752	14 NiCr 14	12 NC 15		16 240	655 M 13		F-1540	SNC 815 (H)		G 33106	3310; 9314
		1.5860	14 NiCr 18			16 523							
		1.5919	15 CrNi 6	16 NC 6	16 CrNi 4	16 220	S 107						
		1.5920	18 CrNi 8	20 NC 6		13 231							
		1.6523	21 NiCrMo 2	20 NCD 2	20 NiCrMo 2		805 M 20	2506	F-1522	SNCM 220 (H)		G 86170	8620
		1.6587	17 CrNiMo 6	18 NCD 6	18 NiCrMo 7		820 A 16						
		1.7012	13 Cr 2										
		1.7015	15 Cr 3	12 C 3		14 120	523 M 15			SCr 415 (H)	15Ch	G 50150	5015
		1.7131	16 MnCr 5	16 MC 5	16 MnCr 5	14 220	527 M 17	2511	F-1516 / F-1517	SCR 415	18ChG	G 51170	5115
		1.7139	16 MnCrS 5						F-150D				
		1.7147	20 MnCr 5	20 MC 5	20 MnCr 5	14 221				SMnC 420 (H)	18ChG	G 51200	5120
		1.7149	20 MnCrS 5						F-1551				
		1.7262	15 CrMo 5	12 CD 4	12 CrMo 4					SCM 415 (H)			
		1.7264	20 CrMo 5	18 CD 4						SCM 421			
		1.7271	23 CrMoB 3 3										
		1.7311	20 CrMo 2						F-1523				
		1.7321	20 MoCr 4	20 CD 4									
		1.7323	20 MoCrS 4	20 CD 4 S									
		1.7325	25 MoCr 4	25 CD 4									
		1.7326	25 MoCrS 4	25 CD 4 S									
	1.5	1.0402	C 22	AF 42 C 20	C 20; C 21	12 024	050 A 20	1450	F-112		20	G 10200	1020
		1.0406	C 25	AF 50 C 30	C 25	12 030	070 M 26						1025
		1.0501	C 35	AF 55 C 35	C 35	12 040	060 A 35	1550	F-113		35	G 10350	1035
		1.0503	C 45	AF 65 C 45	C 45	12 050	080 M 46	1650	F-114		45	G 10430	1045
		1.0511	C 40	AF 60 C 40	C 40	12 041							1040
		1.0528	C 30			12 031							
		1.0535	C 55	AF 70 C55	C 55	12 060	070 M 55	1655			55		1055
		1.1151	Ck 22	XC 25; XC 18	C 20		050 A 20			S 20 C; S 20 CK	20		1023
		1.1158	Ck 25	XC 25	C 25	12 030	070 M 26			S 25 C	25	G 10250	1025

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
P	1.5	1.1178	Ck 30										
		1.1181	Ck 35	XC 38 H1:XC 32	C 35	12 040	080 M 36	1572		S 35 C	35	G 10340	1035
		1.1186	Ck 40	XC 42 H1	C 40	12 041	080 M 40			S 40 C	40		1040
		1.1191	Ck 45	XC 48	C 45	12 050	080 M 46	1672		S 45 C	45	G 10420	1045
	1.6	1.0540	C 50			12 051							
		1.0601	C 60	CC 55	C 60	12 061	080 A 62				60	G 10600	1060
		1.1203	Ck 55	XC 55	C50	12 060	070 M 55			S 55 C	55		1055
		1.1206	Ck 50	XC 48 H1		12 051	080 M 50				50		1050
		1.1221	Ck 60	XC 60	C60	12 061	080 A 62	1665; 1678		S 58 C	60; 60G	G 10640	1060
	1.7	1.1133	20 Mn 5	20 M 5	G 22 Mn 3	42 2714	120 M 19		F-1515	SMnC 420		G 10220	1022; 1518
		1.5121	46 MnSi 4										
		1.5131	50 MnSi 4										
		1.5141	53 MnSi 4										
		1.5710	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236			3135
		1.6546	40 NiCrMo 2 2	40 NCD 2	40 NiCrMo 2 (KB)		311-Type 7		F-1204	SNCM 240	38ChGNM	G 87400	8740
		1.6565	40 NiCrMo 6	40 NCD 6			311-Type 6		F-1272	SNCM 439	40Ch2N2MA		4340
		1.7003	38 Cr 2	38 C 2	38 Cr 2								
		1.7006	46 Cr 2	42 C 2	45 Cr 2								5045
		1.7020	32 Cr 2										
		1.7030	28 Cr 4				530 A 30				30Ch		5130
		1.7033	34 Cr 4	32 C 4	34 Cr 4 (KB)		530 A 32			SCr 430 (H)	35Ch	G 51320	5132
		1.7218	25 CrMo 4	25 CD 4	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225		SCM 420; SCM 430	30ChM	G 41300	4130
		1.7220	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234	F-1250	SCM 432; SCCrM 3	AS38ChGM	G 41350	4135; 4137
		1.7223	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420	4142; 4140
		1.7225	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244	F-1252	SCM 440 (H)		G 41400	4142; 4140
		1.7228	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470	4150
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230		SUP 10	50ChGFA	G 61500	6150
	1.8	1.1157	40 Mn 4	35 M 5			150 M 36				40G	G 10390	1039
		1.1165	30 Mn 5	35 M 5		13 141	120 M 36			SMn 433 H; SCMn 2	30GSL		1330
		1.1167	36 Mn 5	40 M 5		42 2715	150 M 36	2120	F-1203	SMn 438 (H); SCMn 3	35G2; 35GL	G 13350	1335
		1.1170	28 Mn 6	20 M 5	C 28 Mn	13 141	150 M 28			SCMn 1	30G		1330
		1.3561	44 Cr 2										
		1.3563	43 CrMo 4										
		1.3565	48 CrMo 4	48 CD 4			817 M 40			SNC 836			
		1.5120	38 MnSi 4										
		1.5121	46 MnSi 4										
		1.5122	37 MnSi 4			13 240							
		1.5131	50 MnSi 4										
		1.5141	53 MnSi 4										
		1.5223	42 MnV 7			13 242							
		1.5710	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236			3135
		1.5736	36 NiCr 10	30 NC 11	35 NiCr 9					SNC 631 (H)			3435
		1.5755	31 NiCr 14	18 NC 13		16 440	653 M 31		F-123	SNC 836			
		1.6511	36 CrNiMo 4	40 NCD 3	38 NiCrMo 4 (KB)	16 341	816 M 40		F-1280		40 ChN2MA	G 98400	9840
		1.6513	28 NiCrMo 4										
		1.7003	38 Cr 2	38 C 2	38 Cr 2								
		1.7006	46 Cr 2	42 C 2	45 Cr 2								5045
		1.7030	28 Cr 4				530 A 30				30Ch		5130
		1.7033	34 Cr 4	32 C 4	34 Cr 4 (KB)	PH 41 4141	530 A 32			SCr 430 (H)	35Ch	G 51320	5132
		1.7034	37 Cr 4	38 C 4	38 Cr 4	14 140	530 A 36		F-1201	SCr 435 H	40Ch		5135
		1.7035	41 Cr 4	42 C 4	41 Cr 4		530 M 40		F-1202 / F-1211	SCr 440 (H)	40Ch	G 51400	5140
		1.7218	25 CrMo 4	25 CD 4 S	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225	F-222	SCM 420; SCM 430	30ChM	G 41300	4130
		1.7220	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234	F-1250	SCM 432; SCCrM 3	AS38ChGM	G 41350	4135; 4137

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
P		1.7223	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420	4142; 4140
		1.7225	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244		SCM 440 (H)		G 41400	4142; 4140
		1.7228	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470	4150
		1.7561	42 CrV 6			15 241							
		1.7735	14 CrMoV 6 9	15 CDV 6									
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230		SUP 10	50ChGFA	G 61500	6150
		1.3563	43 CrMo 4										
		1.3565	48 CrMo 4				817 M 40			SNC 836			
		1.5120	38 MnSi 4										
		1.5121	46 MnSi 4										
		1.5122	37 MnSi 4			13 240							
		1.5223	42 MnV 7			13 242							
		1.5710	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236			3135
		1.5736	36 NiCr 10	30 NC 11	35 NiCr 9					SNC 631 (H)			3435
		1.5864	35 NiCr 18			16 640			F-122				
		1.6511	36 CrNiMo 4	40 NCD 3	38 NiCrMo 4 (KB)	16 341	816 M 40				40 ChN2MA	G 98400	9840
		1.6580	30 CrNiMo 8	30 CND 8	30 NiCrMo 8		823 M 30		F-1272	SNCM 431			
		1.6582	34 CrNiMo 6	35 NCD 6	35 NiCrMo 6 (KW)	16 342	817 M 40	2541	F-128 / F-1270	SNCM 447	38Ch2N2MA		4340
		1.7033	34 Cr 4	32 C 4	34 Cr 4 (KB)		530 A 32			SCr 430 (H)	35Ch	G 51320	5132
		1.7034	37 Cr 4	38 C 4	38 Cr 4	14 140	530 A 36			SCr 435 H	40Ch		5135
		1.7035	41 Cr 4	42 C 4	41 Cr 4		530 M 40			SCr 440 (H)	40Ch	G 51400	5140
		1.7045	42 Cr 4	42 C 4 TS	41 Cr 4		530 A 40	2245		SCr 440	40Ch		5140
		1.7218	25 CrMo 4	25 CD 4 S	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225		SCM 420; SCM 430	30ChM	G 41300	4130
		1.7220	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234		SCM 432; SCCrM 3	AS38ChGM	G 41350	4135; 4137
		1.7223	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420	4142; 4140
		1.7225	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244		SCM 440 (H)		G 41400	4142; 4140
		1.7228	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470	4150
		1.7361	32 CrMo 12	30 CD 12	32 CrMo 12	15 230	722 M 24	2240	F-124A				
		1.7561	42 CrV 6			15 241							
		1.7707	30 CrMoV 9			15 330							
		1.7735	14 CrMoV 6 9										
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230		SUP 10	50ChGFA	G 61500	6150
		1.8161	58 CrV 4			15 261							
	1.9	0.9650	G-X 260 Cr 27										
		1.1118	GS-24 Mn 6			42 2714							
		1.1167	GS-36 Mn 5			42 2715							
		1.6511	GS-36 CrNiMo 4			16 341							
		1.6582	GS-34 CrNiMo 6			16 342							
		1.6750	GS-20 NiCrMo 3 7										
	1.10	1.8504	34 CrAl 6			14 340							
		1.8506	34 CrAlS 5									K 23745	
		1.8507	34 CrAlMo 5	30 CAD 6.12	34 CrAlMo 7		905 M 31		F-1741			K 23545	A 355 Cl. D
		1.8509	41 CrAlMo 7	40 CAD 6.12	41 CrAlMo 7	15 340	905 M 39	2940	F-1740	SACM 645	38ChMJuA	K 24065	A 355 Cl. A
	1.11	1.8515	31 CrMo 12	30 CD 12	31 CrMo 12		722 M 24	2240	F-1712				
		1.8519	31 CrMoV 9						F-1721				
		1.8521	15 CrMoV 5 9										
		1.8523	39 CrMoV 13 9		36 CrMoV 13 9		897 M 39						
		1.8550	34 CrAlNi 7									K 52440	
	1.12	1.3505	100 Cr 6	100 C 6	100 Cr 6	14 100	534 A 99	2258	F-131 / F-1310	SUJ 2	SchCh 15	G 52986	52100
		1.3520	100 CrMn 6			14 209							
		1.3543	X 102 CrMo 17	Z 100 CD 17									

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
P	1.13	1.0904	55 Si 7	55 S 7	55 Si 8		250 A 53	2085; 2090			55S2		9255
		1.0961	60 SiCr 7	60 SC 7	60 SiCr 8					SUP 7			9262
		1.1231	Ck 67	XC 68	C 70	12 071	060 A 67	1770			70	G 10700	1070
		1.1248	Ck 75	XC 75	C 75	12 081	060 A 78	1774; 1778			75	G 10780	1078; 1080
		1.1274	Ck 101	XC 100			060 A 96	1870		SUP 4		G 10950	1095
		1.2101	62 SiMnCr 4										
		1.2103	58 SiCr 8			19 452							
		1.5026	55 Si 7										
		1.7103	67 SiCr 5										
		1.7176	55 Cr 3	55 C 3	55 Cr 3		527 A 60	2253	F-1431	SUP 9 (A)	50ChGA	G 51550	5155
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230	F-143 / F-1430	SUP 10	50ChGFA	G 61500	6150
	1.14	1.3202	S 12-1-4-5			19 858						T 12015	T15
		1.3207	S 10-4-3-10	Z 130 WKCDV 10-10-04	HS 10-4-3-10	19 861	BT 42		F-5553	SKH 57			
		1.3243	S 6-5-2-5	Z 85 WDKCV 06-05-05	HS 6-5-2-5	19 852		2723	F-5613	SKH 55	R6M5K5		
		1.3246	S 7-4-2-5	Z 110 WKCDV 07-05-04	HS 7-4-2-5	19 851						T 11341	M 41
		1.3247	S 2-10-1-8	Z 110 DKCWV 09-08-04	HS 2-9-1-8		BM 42			SKH 51		T 11342	M 42
		1.3249	S 2-9-2-8				BM 34					T 11333	M 33; M 34
		1.3255	S 18-1-2-5	Z 80 WKCV 18-05-04-0	HS 18-1-1-5	19 855	BT 4			SKH 3		T 12004	T 4
		1.3257	S 18-1-2-15										
		1.3265	S 18-1-2-10		HS 18-0-1-10	19 860	BT 5			SKH 4 A		T 12005	T 5
		1.3302	S 12-1-4			19 810							
		1.3318	S 12-1-2			19 802							
		1.3333	S 3-3-2		HS 3-3-2	19 820							
		1.3343	S 6-5-2	Z 85 WDCV 06-05-04-0	HS 6-5-2	19 830	BM 2	2722	F-5603	SKH 9; SKH 51	R6AM5	T 11302	M 2
		1.3344	S 6-5-3	Z 120 WDCV 06-05-04	HS 6-5-3		BM 4			SKH 52; SKH 53		T 11323	M 3 Cl. 2
		1.3346	S 2-9-1	Z 85 DCWV 08-04-02-0	HS 1-8-1		BM 1				H41	T 11301	H 41; M 1
		1.3348	S 2-9-2	Z 100 DCWV 09-04-02	HS 2-9-2			2782				T 11307	M 7
		1.3355	S 18-0-1	Z 80 WCV 18-04-01	HS 18-0-1	19 824	BT 1			SKH 2	R18	T 12001	T 1
	1.15	1.2067	100 Cr 6	Y 100 C 6			BL 3					T 61203	L 3
		1.2080	X 210 Cr 12	Z 200 C 12	X 210 Cr 13 KU	19 436	BD 3			SKD 1	Ch12	T 30403	D 3
		1.2083	X 42 Cr 13	Z 40 C 14	X 41 Cr 13 KU	19 435			F-5263	SUS 420 J 2			
		1.2101	62 SiMnCr 4										
		1.2103	58 SiCr 8			19 452							
		1.2108	90 CrSi 5										
		1.2162	21 MnCr 5	20 NC 5		19 487				SCR 420 H			
		1.2210	115 CrV 3	100 C 3	107 CrV 3 KU	19 421						T 61202	L 2
		1.2312	40 CrMnMoS 8 6	40 CMD 8 + S									
		1.2316	X 36 CrMo 17	Z 38 CD 17	X 38 CrMo 16 1 KU								
		1.2330	35 CrMo 4	34 CD 4	35 CrMo 4		708 A 37	2234			35 HM	T 51620	4135
		1.2332	47 CrMo 4	42 CD 4	40 CrMo 4		708 M 40	2244					4142
		1.2341	X 6 CrMo 4										
		1.2363	X 100 CrMoV 5 1	Z 100 CDV 5	X 100 CrMoV 5 1 KU	19 571	BA 2	2260	F-5227	SKD 12		T 30102	A 2
		1.2369	81 CrMov 42 16										
		1.2379	X 155 CrVMo 12 1	Z 160 CDV 12	X 155 CrV-Mo 12 1 KU	19 573	BD 2		F-5211	SKD 11		T 30402	D 2
		1.2419	105 WCr 6	105 WC 13	107 WCr 5 KU					SKS 31	ChWG		
		1.2436	X 210 CrW 12	Z 200 CW 12	X 215 CrW 12 1 KU	19 437		2312	F-5213	SKD 2			
		1.2510	100 MnCrW 4	90 MWCV 5	95 MnWCr 5 KU	19 314	BO 1	2140	F-5220	SKS 3		T 31501	O 1
		1.2516	120 WV 4	110 WC 20	110 W 4 KU	19 711	BF 1						
		1.2542	45 WCrV 7		45 WCrV 8 KU	19 732	BS 1	2710				T 41901	S 1
		1.2550	60 WCrV 7	55 WC 20	55 WCrV 8 KU	19 735							
		1.2601	X 165 CrMoV 12		X 165 CrMoW 12 KU	19 572		2310					
		1.2711	54 NiCrMoV 6	55 NCDV 6		19 662							
		1.2713	55 NiCrMoV 6	55 NCDV 7		19 662			F-520.S	SKT 4	5ChNM	T 61206	L 6

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
P		1.2721	50 NiCr 13										
		1.2735	15 NiCr 14	10 NC 12		16 240				SNC 22		T 51606	
		1.2762	75 CrMoNiW 6 7										
		1.2764	X 19 NiCrMo 4										
		1.2767	X 45 NiCrMo 4	Y 35 NCD 16	42 NiCrMo 15 7	19 655							
		1.2826	60 MnSiCr 4										
		1.2833	100 V 1	Y1 105 V	102 V 2 KU	19 356	BW 2			SKS 43		T 72302	W 210
		1.2842	90 MnCrV 8	90 MV 8	90 MnVCr 8 KU	19 314	BO 2					T 31502	O 2
		1.2885	X 32 CrMoCoV 3 3 3	30 DCKV 28									
		1.6356	X 2 NiCoMoTi 18 12 4										
		1.6358	X 2 NiCoMoTi 18 9 5										
		1.6359	X 2 NiCrMo 18 8 5	Maraging 250								K 92890	
	1.16	1.2311	40 CrMnMo 7			19 520							
		1.2343	X 38 CrMoV 5 1	Z 38 CDV 5	X 37 CrMoV 5 1 KU	19 552	BH 11		F-5317	SKD 6	4Ch5MFS	T 28811	H 11
		1.2344	X 40 CrMoV 5 1	Z 40 CDV 5	X 40 CrMo 5 1 1 KU	19 554	BH 13	2242	F-5318	SKD 61	4Ch5MF1S	T 20813	H 13
		1.2365	X 32 CrMoV 3 3	32 DCV 28	30 CrMoV 12 27 KU	19 541	BH 10			SKD 7	3Ch3M3F	T 20810	H 10
		1.2367	X 38 CrMoV 5 3										
		1.2567	X 30 WCrV 5 3	Z 32 WCV 5	X 30 WCrV 5 3 KU	19 720				SKD 4			
		1.2581	X 30 WCrV 9 3	Z 30 WCV 9	X 30 WCrV 9 3 KU	19 721	BH 21			SKD 5	3Ch2W8F	T 20821	H 21
		1.2706	X 3 NiCrMo 18 8 5	E-Z 2 NKD 18		19 662						K 93120	
		1.2713	55 NiCrMoV 6	55 NCDV 7		19 662				SKT 4	5ChNM	T 61206	L 6
		1.2714	56 NiCrMoV7										
		1.2738	40 CrMnNiMo 8						F-5303				
		1.2744	57 NiCrMoV 7 7										
M	2.1	1.3941	G-X 4 CrNi 18 13										
		1.3944	G-X 5 CrNi 18 11										
		1.3951	G-X 4 CrNiMoN 22 15										
		1.3952	G-X 4 CrNiMoN 18 14										
		1.3953	G-X 2 CrNiMo 18 15										
		1.3955	G-X 12 CrNi 18 11										
		1.3959	G-X 10 CrNiNb 16 13										
		1.3964	G-X 4 CrNiMnMoN 19 1										
		1.4001	G-X 7 Cr 13	Z 8 C 13 FF		17 020			F-8401				
		1.4006	G-X 10 Cr 13	Z 10 C 13 M		17 021			F-3401				
		1.4008	G-X 8 CrNi 13	Z 12 CN 13 M		42 2904							
		1.4027	G-X 20 Cr 14	Z 20 C 13 M		42 2906	420 C 29			SCS 2	20Ch13L		
		1.4034	G-X 46 Cr 13	Z 40 C 14 M		17 024			F-3405				
		1.4059	G-X 22 CrNi 17										
		1.4085	G-X 70 Cr 29										
		1.4086	G-X 120 Cr 29										
		1.4107	G-X 8 CrNi 12			42 2904							
		1.4120	G-X 20 CrMo 13										
		1.4122	G-X 35 CrMo 17			17 137							
		1.4136	G-X 70 CrMo 29 2										
		1.4138	G-X 120 CrMo 29 2										
		1.4306	G-X 2 CrNi 18 9			17 249			F-3503				
		1.4308	G-X 6 CrNi 18 9	Z 6 CN 18.10 M		42 2930	304 C 15	2333	F-8411	SCS 13	07Ch18N9L		CF-8
		1.4312	G-X 10 CrNi 18 8			42 2931							
		1.4313	G-X 5 CrNi 13 4										
		1.4339	G-X 32 CrNi 28 10										
		1.4340	G-X 40 CrNi 27 4										
		1.4347	G-X 8 CrNi 26 7										
		1.4404	G-X 2 CrNiMo 18 10			17 349			F-3533				

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
		1.4405	G-X 5 CrNiMo 16 5										
		1.4407	G-X 5 CrNiMo 13 4										
		1.4408	G-X 6 CrNiMo 18 10			42 2940			F-8414				
		1.4414	G-X 4 CrNiMo 13 4										
		1.4437	G-X 6 CrNiMo 18 12			42 2940							
		1.4439	G-X 3 CrNiMo 17 13 5						F-3544				
		1.4446	G-X 2 CrNiMo 17 13 4										
		1.4448	G-X 6 CrNiMo 17 13										
		1.4463	G-X 6 CrNiMo 24 8 2										
		1.4464	G-X 40 CrNiMo 27 5										
		1.4465	G-X 2 CrNiMoN 25 25										
		1.4500	G-X 7 NiCrMoCuNb 25										
		1.4531	G-X 2 NiCrMoCuN 20 1										
		1.4536	G-X 2 NiCrMoCuN 25 2										
		1.4540	G-X 4 CrNiCuNb 16 4										
		1.4552	G-X 5 CrNiNb 18 9			42 2933			F-8413				
		1.4580	G-X 10 CrNiMoNb 18 1						F-3536				
		1.4581	G-X 5 CrNiMoNb 18 10	Z 4 CNDNb 18.12 M	GX 6 CrMoNb 20 11	42 2941	318 C 17			SCS 22			
		1.4585	G-X 7 CrNiMoCuNb 18										
		1.4729	G-X 40 CrSi 13										
		1.4740	G-X 40 CrSi 17										
		1.4743	G-X 160 CrSi 18										
		1.4745	G-X 40 CrSi 23										
		1.4761	G-X 120 CrSi 23										
		1.4776	G-X 40 CrSi 29										
		1.4777	G-X 130 CrSi 29										
M	2.1	1.4809	G-X 40 CrNi 23 14										
		1.4815	G-X 8 CrNi 19 10										
		1.4820	G-X 12 CrNi 26 5										
		1.4822	G-X 40 CrNi 24 5										
		1.4823	G-X 40 CrNiSi 27 4										
		1.4825	G-X 25 CrNiSi 18 9			42 2932							
		1.4826	G-X 40 CrNiSi 22 9			42 2934							
		1.4832	G-X 25 CrNiSi 20 14										
		1.4837	G-X 40 CrNiSi 25 12			42 2936							
		1.4840	G-X 15 CrNi 25 20										
		1.4848	G-X 40 CrNiSi 25 20		GX 40 CrNi 26 20	42 2952							
		1.4849	G-X 40 NiCrSiNb 38 1										
		1.4852	G-X 40 NiCrNb 35 25										
		1.4855	G-X 30 CrNiSiNb 24 2										
		1.4857	G-X 40 NiCrSi 35 25										
		1.4859	G-X 10 NiCrNb 32 20										
		1.4865	G-X 40 NiCrSi 38 18		GX 50 NiCr 39 19		330 C 40			SCH 15; SCH 16			
		1.4868	G-X 50 CrNi 30 30										
		1.4873	G-X 45 CrNiW 18 9										
		1.4927	G-X 5 CrNi 22 10										
		1.4928	G-X 12 CrNiMo-CoVN 12										
		1.4930	G-X 14 CrCoMo 13 10										
		1.4931	G-X 22 CrMoV 12 1										
		1.4957	G-X 15 CrNiCo 21 20										
		1.4968	G-X 7 CrNiNb 16 13										
		1.4988	G-X 8 CrNiMoVNb 16 1										
		1.6901	G-X 8 CrNi 18 10										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
M	2.1	1.6902	G-X 6 CrNi 18 10										
		1.6905	G-X 5 CrNiNb 18 10										
		1.6982	G-X 3 CrNi 13 4										
	2.2	1.4000	X 6 Cr 13	Z 6 C 13	X 6 Cr 13	17 020	403 S 17	2301		SUS 403	08Ch13	S 40300	403
		1.4002	X 6 CrAl 13	Z 6 CA 13	X 6 CrAl 13		405 S 17	2302	F-3111	SUS 405		S 40500	405
		1.4016	X 6 Cr 17	Z 8 C 17	X 8 Cr 17	17 040	430 S 15	2320	F-3113	SUS 430	12Ch17	S 43000	430
		1.4105	X 4 CrMoS 18						F-3114				
		1.4510	X 6 CrTi 17	Z 8 CT 17	X 6 CrTi 17					SUS 430 LX	08Ch17T	S 43036	XM 8; 430 Ti
		1.4511	X 8 CrNb 17	Z 8 CNb 17	X 6 CrNb 17				F-3122	SUS 430 LX			
		1.4512	X 5 CrTi 12	Z 6 CT 12	X 6 CrTi 12		409 S 19		F-3121	SUH 409		S 40900	409
		1.4528	X 105 CrCoMo 18 2										
	2.3	1.4006	X 10 Cr 13	Z 12 C 13	X 12 Cr 13	17 021	410 S 21	2302	F-3401	SUS 410	12Ch13	S 41000	410; CA-15
		1.4021	X 20 Cr 13	Z 20 C 13	X 20 Cr 13	17 022	420 S 37	2303	F-3402	SUS 420 J 1	20Ch13	S 42000	420
		1.4024	X 15 Cr 13	Z 13 C 13		17 021	420 S 29			SUS 410 J 1			
		1.4031	X 38 Cr 13	Z 40 C 14	X 40 Cr 14	17 024		2304	F-3404	SUS 420 J 2	40Ch13		
		1.4034	X 46 Cr 13	Z 40 C 14	X 40 Cr 14	17 029	420 S 45		F-3405		40Ch13		
		1.4057	X 20 CrNi 17 2	Z 15 CN 16.02	X 16 CrNi 16	17 145	431 S 29	2321	F-3427	SUS 431	20Ch17N2	S 43100	431
		1.4106	X 2 CrMoSiS 18 2 1										
		1.4108	X 100 CrMo 13										
		1.4109	X 65 CrMo 14										
		1.4112	X 90 CrMoV 18									S 44003	
		1.4113	X 6 CrMo 17	Z 8 CD 17.01	X 8 CrMo 17		434 S 17	2325	F-3116	SUS 434		S 43400	434
		1.4116	X 45 CrMoV 15						F-3422				
		1.4125	X 105 CrMo 17	Z 100 CD 17	X 105 CrMo 17					SUS 440 C		S 44004	440 C
	2.4	1.4028	X 30 Cr 13	Z 30 C 13	X 30 Cr 13	17 023	420 S 45	2304		SUS 420 J 2	30Ch13		
		1.4104	X 12 CrMoS 17	Z 10 CF 17	X 10 CrS 17	17 140		2383	F-3403	SUS 430 F		S 43020	430 F
		1.4313	X 5 CrNi 13 4	Z 5 CN 13.4	X 6 CrNi 13 04		425 C 11	2385		SCS 5			CA 6-NM
	2.5	1.4410	X 2 CrNiMoN 25 7 4	Z2 CND 25 07 04 Az					F-3552				F53
		1.4460	X 8 CrNiMo 27 5	Z5 CND 25 05 AZ									329 LN
		1.4462	X 2 CrNiMoN 22 5 3	Z2 CND 22 05 03 AZ (Uranus 45 N)		17 381			F-3308			S 31803	329 A (F51)
		1.4501	X 2 CrNiMoCuWN 25 7 4	Z2 CNDUW 25 07 04 Az (Zeron 100)								S 32760	F55
		1.4507	X 2 CrNiMOCuN 25 6 3	Z3 CNDU 25 07 Az (Uranus 52 N)								S 32750	F61
		1.4539	X 1 NiCrMoCu 25 20 5	Z2 NCDU 25 20 (Uranus B6)									904L
		1.4542	X 7 CrNiCu 16 4 4	Z7 CNU 17 04 04 (17-4PH)									630
		1.4547	X 1 CrNiMoCuN 20 18 17	Z1 CNDU 20 18 06 Az (254 SMO)									F44
		1.4821	X 20 CrNiSi 25 4	Z20 CNS 25 04									
			X 5 CrNiCu 15 5	E-Z5 CNU 15 05 (15-5PH)					F-3308				
	2.6	1.4301	X 5 CrNi 18 10	Z6 CN 18-09		17 240			F-3504				304
		1.4305	X 8 CrNiS 18 9	Z8 CNF 18-03		17 243							303
		1.4306	X 2 CrNi 19-11	Z3 CN 18-10		17 249			F-3503				304 L
		1.4311	X 2 CrNiN 18 10			17 249							304 LN
		1.4401	X 5 CrNiMo 17 12 2	Z6 CND 17 12 02		17 346			F-3543				316
		1.4404	X 2 CrNiMo 17 12 2	Z3 CND 17 12 02		17 349							316 L
		1.4429	X 2 CrNiMoN 17 11 2	Z3 CND 17 11 03 Az									316 LN
		1.4449	X 3 CrNiMo 18 12 3										
		1.4541	X 6 CrNiTi 18 10			17 248							321
		1.4550	X 10 CrNiNb 18-9	Z10 CNNb 18-10		17 245			F-3552 / F-3524				347
		1.4568	X 7 CrNiAl 17 7										17-7 PH
		1.4571	X 6 CrNiMoTi 17 12 2	Z 6 CNT 17.12	X 6 CrNiMoTi 17 12	17 348	320 S 31	2350	F-3535		10Ch17N-13M2T	S 31635	316 Ti
	2.7	1.4747	X 80 CrNiSi 20										
		1.4841	X 15 CrNiSi 25-20	Z15 CNS 25-20									314
		1.4876	X 10 NiCrAlTi 32 21	Z10 NCAT 32-21 (Incoloy 800)					F-3314				

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
K	3.1	0.6010	GG-10	Ft 10 D	G 10	42 2410		01 10-00		FC 10	Sc 10		A48-20 B
		0.6015	GG-15	Ft 15 D	G 15	42 2415	Grade 150	01 15-00	FG-15	FC 15	Sc 15		A48-25 B
		0.6020	GG-20	Ft 20 D	G 20	42 2420	Grade 220	01 20-00	FG-20	FC 20	Sc 20		A48-30 B
		0.6025	GG-25	Ft 25 D	G 25	42 2425	Grade 260	01 25-00	FG-25	FC 25	Sc 25		A48-40 B
	3.2	0.6030	GG-30	Ft 30 D	G 30	42 2430	Grade 300	01 30-00	FG-30	FC 30	Sc 30		A48-45 B
		0.6035	GG-35	Ft 35 D	G 35	42 2435	Grade 350	01 35-00	FG-35	FC 35	Sc 35		A48-50 B
		0.6040	GG-40	Ft 40 D		42 2440	Grade 400	01 40-00			Sc 40		A48-60 B
	3.3	0.7033	GGG-35.3			42 2303							
		0.7040	GGG-40	FGS 400-12	GS 400-12	42 2304	SNG 420/12	0717-02	FGE 38-17	FCD 40	VC 42-12		60 40 18
		0.7043	GGG-40.3	FGS 370-17	GSO 42/17	42 2314	SNG 370/17	0717-15			VC 42-12		
		0.7050	GGG-50	FGS 500-7	GS 500/7	42 2305	SNG 500/7	0727-02	FGE 50-7	FCD 50	VC 50-2		65-45-12
	3.4	0.7060	GGG-60	FGS 600-3	GS 600/3	42 2306	SNG 600/3	0732-03		FCD 60	VC 60-2		80-55-06
		0.7070	GGG-70	FGS 700-2	GS 700-2	42 2307	SNG 700/2	0737-01	FGS 70-2	FCD 70	VC 70-2		100-70-03
		0.7080	GGG-80	FGS 800-2	GS 800-2	42 2308	SNG 800/2				VC 80-2		120-90-02
	3.5	0.8035	GTW-35-04			42 2536			GTW 35				
		0.8040	GTW-40-05			42 2540							
		0.8045	GTW-45-07										
	3.6	0.8055	GTW-55										
		0.8065	GTW-65										
	3.7	0.8135	GTS-35-10	MN 35-10		42 2533	B 340/12		GTS 35				
		0.8145	GTS-45-06			42 2545	P 440/7		GTS 45				
	3.8	0.8155	GTS-55-04	MP 50-5		42 2555	P 510/4		GTS 55				
		0.8165	GTS-65-02	MP 60-3			P 570/3		GTS 65				
		0.8170	GTS-70-02	IP 70-2			P 690/2		GTS 70				
N	4.1	3.0205	Al99	1200 (A4)	9001/1	42 4009			L-3001				
		3.0255	Al99.5	1050 A	9001/2	42 4004			L-3051				
		3.0256	E-Al H			42 4105							
		3.0275	Al99.7	1070 A		42 4003			L-3071				
		3.0285	Al99.8	1080 A (A8)		42 4002			L-3081				
		3.0305	Al99.9										
		3.3308	Al99,9Mg0,5										
	4.2	3.0515	AlMn1			42 4432			L-3810				
		3.1255	AlCuSiMn		9002/3								2014
		3.1325	AlCuMg1	2017 A (AU4G)					L-3120				2017 A
		3.1355	AlCuMg2	2024 (AU4G1)	9002/4	42 4203			L-3140				2024
		3.1655	AlCuBiPb	2011 (AU5PbBi)	9002/5				L-3192				2011
		3.3315	AlMg1	5005 (AlMg1)					L-3350				
		3.3545	AlMg4Mn	5086 (AG4MC)	9005/5				L-3322				5083
		3.3547	AlMg4,5Mn0,7	5083 (AlMg5Mn0,7)			N8		L-3321	A 5083			A95083
		3.4335	AlZn4,5Mg1	7020 (AZ5G)	9007/1	42 4441			L-3741				7020
		3.4365	AlZnMgCu1.5	7075 (AZ5GU)		42 4222			L-3710				7075
	4.3	3.1371	G-AlCu4TiMg										
		3.1645	AlCuMgPb	2030 (AU4PB)		42 4254			L-3121				
		3.1841	G-AlCu4Ti										
		3.2134	G-AlSi5Cu1Mg										
		3.2151	G-AlSi6Cu4			42 4357							
		3.2161	G-AlSi8Cu3										
		3.2315	AlMgSi1		9006/4	42 4400							6082
		3.2341	G-AlSi5Mg										
		3.2371	G-AlSi7Mg			42 4334							
		3.2373	G-AlSi9Mg			42 4331							
		3.2381	G-AlSi10Mg			42 4331							
		3.2383	G-AlSi10Mg(Cu)			42 4331							

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
N	4.3	3.3206	AlMgSi0,5	6060 (AGS)		42 4401			L-3441				6063
		3.3207	E-AlMgSi0,5		9006/3								6101
		3.3214	AlMgSi0,5		9006/2								6061
		3.3241	G-AlMg3Si										
		3.3261	G-AlMg5Si			42 4515							
		3.3292	GD-AlMg9			42 4519							
		3.3541	G-AlMg3										
		3.3543	G-AlMg3(Cu)										
		3.3561	G-AlMg5										
		3.3591	G-AlMg10										
	4.4	3.2581	G-AlSi12			42 4330							
		3.2583	G-AlSi12(Cu)			42 4330							
	4.5		G-AlSi18										
			G-AlSi17Cu4										
			G-AlSi25CuNiMg										
			G-AlSi21CuNiMg										
	4.6	2.0040	OF-Cu			42 3000							
		2.0060	E-Cu57			42 3001							
		2.0065	E-Cu58			42 3001							
		2.0070	SE-Cu										
		2.0076	SW-Cu										
		2.0090	SF-Cu			42 3003							
		2.1522	CuSi2Mn										
	4.7	2.0205	CuZn0.5										
		2.0850	CuNi2Be										
		2.0853	CuNi1.5Si										
		2.0855	CuNi2Si			42 3054							
		2.0857	CuNi3Si										
		2.1160	CuPb1P										
		2.1191	CuAg0.1P										
		2.1203	CuAg0.1										
		2.1245	CuBe1.7										
		2.1247	CuBe2										
		2.1248	CuBe2Pb										
		2.1265	CuCd0.5										
		2.1266	CuCd1										
		2.1285	CuCo2Be										
		2.1310	CuFe2P										
		2.1322	CuMg0.4										
		2.1323	CuMg0.7										
		2.1356	CuMn3										
		2.1363	CuMn2										
		2.1366	CuMn5										
		2.1491	CuAsP										
		2.1498	CuSP										
		2.1546	CuTeP										
		2.1580	CuZr										
	4.8	2.0916	CuAl5										
		2.1525	CuSi3Mn										
			Ampco 8-16										
	4.9	2.0987	CuAl11Ni6Fe5										
			Ampco 18-26										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
N	4.10	2.1247	CuBe2F125										
			Ampco M-4										
	4.11	2.0331	CuZn36Pb1.5			42 3214							
		2.0371	CuZn38Pb1.5			42 3222							
		2.0375	CuZn36Pb3										
		2.0380	CuZn39Pb2			42 3223							
		2.0401	CuZn39Pb3										
		2.0402	CuZn40Pb2			42 3223							
		2.0410	CuZn44Pb2										
		2.0460	CuZn20Al2										
		2.0470	CuZn28Sn1										
		2.0490	CuZn31Si1										
		2.0500	CuZn23Al6Mn-4Fe3										
		2.0510	CuZn37Al1			42 3231							
		2.0525	CuZn38SnAl										
		2.0530	CuZn38Sn1			42 3237							
		2.0540	CuZn35Ni2										
		2.0550	CuZn40Al2										
		2.0561	CuZn40Al1			42 3231							
		2.0572	CuZn40Mn1			42 3234							
		2.0580	CuZn40Mn1Pb										
	4.12	2.0220	CuZn5			42 3200							
		2.0230	CuZn10			42 3201							
		2.0240	CuZn15			42 3202							
		2.0250	CuZn20			42 3203							
		2.0261	CuZn28										
		2.0265	CuZn30			42 3210							
		2.0280	CuZn33			42 3212							
		2.0321	CuZn37		C2700	42 3213							
		2.0332	CuZn37Pb0.5										
		2.0335	CuZn36										
		2.0360	CuZn40			42 3220							
		2.0372	CuZn39Pb0.5			42 3221							
		2.1080	CuSn6Zn6										
		2.1293	CuCrZr			42 3039							
	4.13	PE	Baylon	Lacqtène	Alkathene		Eraclene			Mirason			Alathon
		PE	Dekalen	Natène	Carlona		Fertene			Novatec			Bakelite
		PE	Ertalen		Escorene		Rumiten			Rexlon			Chemplex
		PE	Hostalen							Sholex			Dylan
		PE	Lupolen							Sumikathene			Fortiflex
		PE	Supralen							Suntec			Marlex
		PE	Symalen							Staflene			Microthene
		PE	Vestolen							Yukalon			Paxon
		PE											Petrothene
		PE											Poly-Eth
		PE											Rigidex
		PE											Rotothene
		PP	Daplen	Eltex P	Carlona P		Kastilen			Noblene			Pro-fax
		PP	Hostalen PP	Lacqtène P	Propathene		Moplen			Poly-Pro			Rexene
		PP	Luparen	Napryl	Procom					Sho-Allomer			Tenite
		PP	Novolen		Propyply								
		PP	Symalen PP		Propafoil								
		PP	Vestolen PP										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
N	4.13	PVC	Coroplast	Ekavyl	Breon		Raivinil	Pevikon		Nipeon			Dalvin
		PVC	Hostalit		Carina		Sicron			Nipolit			Geon
		PVC	Mipolam		Corvic		Vipla			Vinika			Kohinor
		PVC	Opalon		Scon		Viplast			Vinichlon			Marvinol
		PVC	Rhodopas		Shell PVC								Pliovic
		PVC	Soflex		Welvic								Vygen
		PVC	Solvec										
		PVC	Supradur										
		PVC	Trosiplast										
		PVC	Trovidur										
		PVC	Vestolit										
		PVC	Vinidur										
		PVC	Vinnol										
		PVC	Vinoflex										
		PVC	Vinylite										
			Delrin, Hostalen										
			Makrolon, Novodur										
			Acrylglas										
	4.14		Ferrozell, Bakelit										
			Pertinax										
			Resopal										
	4.15		GFK										
			CFK										
			AFK										
	4.16	3.5101	G-MgZn4SE1Zr1										
		3.5102	G-MgZn5Th2Zr1										
		3.5103	G-MgSE3Zn2Zr1										
		3.5105	G-MgTh3Zn2Zr1										
		3.5106	G-MgAg3Se2Zr1										
		3.5200	MgMn2										
		3.5312	MgAl3Zn										
		3.5470	GD-MgAl4Si1										
		3.5612	MgAl6Zn										
		3.5612	GD-MgAl6Zn1										
		3.5662	G-MgAl6										
		3.5812	MgAl8Zn			42 4911							
		3.5812	G-MgAl8Zn1			42 4911							
		3.5912	G-MgAl9Zn1			42 4911							
	4.17	Graphit	R8340										
		Graphit	R8500X										
		Graphit	Technograph 15										
		Graphit	Technograph 30										
		Graphit	R8510										
		Graphit	R8650										
		Graphit	Union Poco EDM C-3										
		Graphit	Union Poco EDM1										
		Graphit	Union Poco EDM3										
	4.18		W-NiFe (Densimet W)										
			W-Cu80/20										
			W93NiFe (Denal)										
	4.19		Mo, Mo-50Re										
			TZC, TZM										
			MHC, ODS										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
S	5.1	1.3911	RNi24			42 3481							
		1.3926	RNi12			42 3484							
		1.3927	RNi8			42 3484							
	5.2	1.3912	Ni36	Invar									
		1.3921	Ni49										
		1.3924	Ni54										
	5.5	2.4375	NiCu30Al	Monel K 500									
		2.4603	NiCr30FeMo	Hastelloy X									
		2.4617		Hastelloy B-2									
		2.4640	NiCr15Fe	Inconel 600									
		2.4668	NiCr19Fe18Nb5Mg	Inconel 718									
		2.4812		Hastelloy C									
		2.4816	NiCr15Fe	Inconel 600			NA 14			NCF 600		N 06600	
		2.4856	NiCr22Mo9Nb	Inconel 625									
		2.4858	NiCr21Mo				NA 16			NCF 825		N 08825	
		2.4983		Udimet 500									
	5.4	2.4610	NiMo16Cr16Ti	Hastelloy C-4									
		2.4886	SG-NiMo16Cr16W										
		2.4819		Hastelloy C-276									
	5.5	2.4360	NiCu30Fe	Monel 400		42 3431							
		2.4375	NiCu30Al	Monel K 500									
		2.4603	NiCr30FeMo	Hastelloy X									
		2.4630	NiCr20Ti	Nimonic 75			HR 5						
		2.4631	NiCr20TiAl	Nimonic 80 A			HR 401; 601			NCF 80 A		N 07080	
		2.4632	NiCr20Co18Ti	Nimonic 90									
		2.4634	NiCo20Cr15MoAlTi	Nimonic 105									
		2.4640	NiCr15Fe	Inconel 600									
		2.4662	NiCr13Mo6Ti3	Nimonic 901									
		2.4668	NiCr19Fe18Nb5Mg	Inconel 718									
		2.4670		Nimocast 713									
		2.4674		Nimocast PK 24									
		2.4812		Hastelloy C									
		2.4816	NiCr15Fe	Inconel 600			NA 14			NCF 600		N 06600	
		2.4856	NiCr22Mo9Nb	Inconel 625									
		2.4858	NiCr21Mo				NA 16			NCF 825		N 08825	
		2.4951	NiCr20Ti	Nimonic 75			HR 5						
		2.4952	NiCr20TiAl	Nimonic 80 A									
		2.4969	NiCr20Co18Ti	Nimonic 90									
		2.4973	NiCr19Co11MoTi										
		2.4983		Udimet 500									
		2.6554		Waspaloy									
				Nimonic 80									
	5.6	2.4711	CoCr20Ni15Mo										
		2.4964	CoCr20W15Ni										
		2.4979	CoCr28MoNi										
		2.4989	CoCr20NiW										
	5.7	1.4718	X 45 CrSi 9 3	Z 45 CS 9	X 45 CrSi 8	17 115	401 S 45		F-3220	SUH 1	40Ch9S2	S 65007	HNV 3
		1.4724	X 10 CrAl 13	Z 10 C 13	X 10 CrAl 12	17 125	403 S 17		F-3152		10Ch13SJu		
		1.4742	X 10 CrAl 18	Z 10 CAS 18	X 8 Cr 17		430 S 15		F-3153	SUS 430; SUH21			430
		1.4747	X 80 CrNiSi 20	Z 80 CSN 20.02	X 80 CrSiNi 20		443 S 65			SUH 4		S 65006	HNV 6
		1.4762	X 10 CrAl 24	Z 10 CAS 24	X 16 Cr 26	17 153			F-3154			S 44600	446
		1.4828	X 15 CrNiSi 20 12	Z 15 CNS 20.12		17 251	309 S 24		F-3312	SUH 309	20Ch20N14S2	S 30900	309
		1.4841	X 15 CrNiSi 25 20	Z 15 CNS 25.20	X 16 CrNiSi 25 20	17 255			F-3310	SUH 310	20Ch25N20S2	S 31000	314; 310

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
S	5.7	1.4845	X 12 CrNi 25 21	Z 12 CN 25.20	X 6 CrNi 26 20	17 255	310 S24	2361		SUH 310; SUS 310 S		S 31008	310 S
		1.4864	X 12 NiCrSi 36 16	Z 12 NCS 37.18		17 253	NA 17		F-3313	SUH 330		N 08330	330
		1.4871	X 53 CrMnNiN 21 9	Z 52 CMN 21.09	X 53 CrMnNiN 21 9		349 S 54		F-3217	SUH 35; SUH 36	55Ch-20G9AN4	S 63008	EV 8
		1.4873	X 45 CrNiW 18 9	Z 35 CNWS 20.09	X 45 CrNiW 18 9		331 S 40			SUH 31			
		1.4876	X 10 NiCrAlTi 33 20	Z 8 NC 32.21		17 358	NA 15 (H)		F-3314	NCF 800			B 163
		1.4878	X 12 CrNiTi 18 9	Z 6 CNT 18.12 (B)	X 6 CrNiTi 18 11	17 246	321 S 20	2337		SUS 321	12Ch18N10T		321
		1.4923	X 22 CrMoV 12 1			17 134	762						
		1.4935	X 20 CrMoWV 12 1									S 42200	
		1.4943	X 4 NiCrTi 25 15	Z 6 NCTDV 25.15 B			HR 251; HR 52; HR 51			SUH 660			
		1.4945	X 6 CrNiWNb 16 16										
		1.4962	X 12 CrNiWTi 16 3										
		1.4980	X 5 NiCrTi 26 15									S66286	
	5.8	2.4806	SG-NiCr20Nb, Inconel 82	Inconel 82									
		2.4851	NiCr23Fe, Inconel 601	Inconel 601									
		2.4667	SG-NiCr19NbMoTi										
	5.9	3.7025	Ti99,8										
		3.7034	Ti99,7										
		3.7064	Ti99,5										
	5.10	3.7114	TiAl5Sn2										
		3.7124	TiCu2										
		3.7174	TiAl6V6Sn2										
	5.11	3.7144	TiAl6Sn2Zr4Mo2										
		3.7154	TiAl6Zr5										
		3.7165	TiAl6V4	T-A 6 V			TA 10 – TA 13					R 56400	
		3.7184	TiAl4Mo4Sn2				TA 45 – TA 51						
H	6.1	< 45 HRC											
	6.2	46-55 HRC											
	6.3	56-60 HRC											
	6.4	61-65 HRC											
	6.5	66-70 HRC											

Article no.	Designation	Page(s)
10 103 ...	HSS drilling	1 / 31
10 105 ...	HSS drilling	1 / 9
10 106 ...	HSS drilling	1 / 9
10 107 ...	HSS drilling	1 / 9
10 109 ...	HSS drilling	1 / 9
10 110 ...	HSS drilling	1 / 9
10 112 ...	HSS drilling	1 / 15
10 113 ...	HSS drilling	1 / 9
10 122 ...	HSS drilling	1 / 8
10 124 ...	HSS drilling	1 / 16
10 130 ...	HSS drilling	1 / 9
10 152 ...	HSS drilling	1 / 17
10 158 ...	HSS drilling	1 / 24
10 161 ...	HSS drilling	1 / 17
10 168 ...	HSS drilling	1 / 17
10 169 ...	HSS drilling	1 / 23
10 170 ...	HSS drilling	1 / 17
10 171 ...	HSS drilling	1 / 17
10 172 ...	HSS drilling	1 / 23
10 173 ...	HSS drilling	1 / 17
10 175 ...	HSS drilling	1 / 17
10 180 ...	HSS drilling	1 / 25
10 181 ...	HSS drilling	1 / 25
10 200 ...	HSS drilling	1 / 26
10 210 ...	HSS drilling	1 / 26
10 215 ...	HSS drilling	1 / 26
10 223 ...	HSS drilling	1 / 25
10 224 ...	HSS drilling	1 / 25
10 225 ...	HSS drilling	1 / 26
10 226 ...	HSS drilling	1 / 40
10 228 ...	HSS drilling	1 / 40
10 235 ...	HSS drilling	1 / 29
10 245 ...	HSS drilling	1 / 30
10 255 ...	HSS drilling	1 / 30
10 265 ...	HSS drilling	1 / 32
10 270 ...	HSS drilling	1 / 26
10 280 ...	HSS drilling	1 / 32
10 285 ...	HSS drilling	1 / 31
10 295 ...	HSS drilling	1 / 33
10 297 ...	HSS drilling	1 / 33
10 305 ...	HSS drilling	1 / 34
10 315 ...	HSS drilling	1 / 34
10 320 ...	HSS drilling	1 / 41
10 330 ...	HSS drilling	1 / 41
10 340 ...	HSS drilling	1 / 42
10 350 ...	HSS drilling	1 / 44
10 355 ...	HSS drilling	1 / 41
10 365 ...	HSS drilling	1 / 41
10 375 ...	HSS drilling	1 / 42
10 405 ...	HSS drilling	1 / 43
10 415 ...	HSS drilling	1 / 38
10 425 ...	HSS drilling	1 / 38
10 435 ...	HSS drilling	1 / 38
10 445 ...	HSS drilling	1 / 38
10 455 ...	HSS drilling	1 / 39
10 465 ...	HSS drilling	1 / 39
10 475 ...	HSS drilling	1 / 39
10 480 ...	HSS drilling	1 / 37
10 485 ...	HSS drilling	1 / 37
10 510 ...	HSS drilling	1 / 35
10 511 ...	HSS drilling	1 / 35
10 512 ...	HSS drilling	1 / 35
10 513 ...	HSS drilling	1 / 35
10 520 ...	HSS drilling	1 / 35
10 521 ...	HSS drilling	1 / 35
10 522 ...	HSS drilling	1 / 35
10 523 ...	HSS drilling	1 / 35
10 525 ...	HSS drilling	1 / 37
10 526 ...	HSS drilling	1 / 36
10 528 ...	HSS drilling	1 / 36
10 530 ...	HSS drilling	1 / 36
10 532 ...	HSS drilling	1 / 36
10 700 ...	Solid carbide drilling	2 / 20
10 702 ...	Solid carbide drilling	2 / 76
10 703 ...	Solid carbide drilling	2 / 76
10 704 ...	Solid carbide drilling	2 / 76
10 708 ...	Solid carbide drilling	2 / 78
10 709 ...	Solid carbide drilling	2 / 93
10 710 ...	Solid carbide drilling	2 / 37
10 712 ...	Solid carbide drilling	2 / 93
10 714 ...	Solid carbide drilling	2 / 93
10 716 ...	Solid carbide drilling	2 / 76
10 717 ...	Solid carbide drilling	2 / 76
10 718 ...	Solid carbide drilling	2 / 76
10 720 ...	Solid carbide drilling	2 / 31
10 721 ...	Solid carbide drilling	2 / 54
10 724 ...	Solid carbide drilling	2 / 77
10 726 ...	Solid carbide drilling	2 / 77
10 727 ...	Solid carbide drilling	2 / 77
10 730 ...	Solid carbide drilling	2 / 32
10 731 ...	Solid carbide drilling	2 / 9
10 732 ...	Solid carbide drilling	2 / 9
10 733 ...	Solid carbide drilling	2 / 21
10 734 ...	Solid carbide drilling	2 / 21
10 735 ...	Solid carbide drilling	2 / 38
10 736 ...	Solid carbide drilling	2 / 55
10 737 ...	Solid carbide drilling	2 / 63
10 740 ...	Solid carbide drilling	2 / 32
10 741 ...	Solid carbide drilling	2 / 32
10 745 ...	Solid carbide drilling	2 / 43
10 746 ...	Solid carbide drilling	2 / 43
10 749 ...	Solid carbide drilling	2 / 43
10 753 ...	Solid carbide drilling	2 / 60
10 760 ...	Solid carbide drilling	2 / 74
10 761 ...	Solid carbide drilling	2 / 73
10 762 ...	Solid carbide drilling	2 / 74
10 767 ...	Solid carbide drilling	2 / 75
10 770 ...	Solid carbide drilling	2 / 60
10 771 ...	Solid carbide drilling	2 / 38
10 772 ...	Solid carbide drilling	2 / 75
10 773 ...	Solid carbide drilling	2 / 43
10 775 ...	Solid carbide drilling	2 / 71
10 776 ...	Solid carbide drilling	2 / 18
10 777 ...	Solid carbide drilling	2 / 19
10 778 ...	Solid carbide drilling	2 / 71
10 779 ...	Solid carbide drilling	2 / 72
10 781 ...	Solid carbide drilling	2 / 21
10 782 ...	Solid carbide drilling	2 / 55
10 786 ...	Solid carbide drilling	2 / 30
10 787 ...	Solid carbide drilling	2 / 43
10 789 ...	Solid carbide drilling	2 / 38
10 791 ...	Solid carbide drilling	2 / 43
10 792 ...	Solid carbide drilling	2 / 60
10 793 ...	Solid carbide drilling	2 / 63
10 794 ...	Solid carbide drilling	2 / 55
10 796 ...	Solid carbide drilling	2 / 63
10 820 ...	Indexable insert drilling	3 / 19
10 821 ...	Indexable insert drilling	3 / 35
10 830 ...	Indexable insert drilling	3 / 28
10 840 ...	Adapters	16 / 28
10 841 ...	Adapters	16 / 65
10 842 ...	Adapters	16 / 114
10 852 ...	Indexable insert drilling	3 / 20
10 853 ...	Indexable insert drilling	3 / 22
10 854 ...	Indexable insert drilling	3 / 24
10 855 ...	Indexable insert drilling	3 / 26
10 870 ...	Indexable insert drilling	3 / 37
10 871 ...	Indexable insert drilling	3 / 37
10 872 ...	Indexable insert drilling	3 / 6
10 873 ...	Indexable insert drilling	3 / 17
10 874 ...	Indexable insert drilling	3 / 10
10 875 ...	Indexable insert drilling	3 / 16
10 881 ...	Indexable insert drilling	3 / 27
10 892 ...	Indexable insert drilling	3 / 32
10 893 ...	Indexable insert drilling	3 / 30
10 894 ...	Indexable insert drilling	3 / 31
10 911 ...	Solid carbide drilling	2 / 89
10 912 ...	Solid carbide drilling	2 / 91
10 913 ...	Solid carbide drilling	2 / 89
10 914 ...	Solid carbide drilling	2 / 81
10 915 ...	Solid carbide drilling	2 / 90
10 916 ...	Solid carbide drilling	2 / 81
10 917 ...	Solid carbide drilling	2 / 82
10 918 ...	Solid carbide drilling	2 / 90
10 919 ...	Solid carbide drilling	2 / 83
10 921 ...	Solid carbide drilling	2 / 83
10 922 ...	Solid carbide drilling	2 / 83
10 923 ...	Solid carbide drilling	2 / 83
10 924 ...	Solid carbide drilling	2 / 83

Article no.	Designation	Page(s)
10 925 ...	Solid carbide drilling	2 / 80
11 016 ...	Solid carbide drilling	2 / 67
11 017 ...	Solid carbide drilling	2 / 67
11 020 ...	Solid carbide drilling	2 / 67
11 021 ...	Solid carbide drilling	2 / 67
11 025 ...	Solid carbide drilling	2 / 68
11 026 ...	Solid carbide drilling	2 / 68
11 030 ...	Solid carbide drilling	2 / 68
11 031 ...	Solid carbide drilling	2 / 68
11 040 ...	Solid carbide drilling	2 / 69
11 050 ...	Solid carbide drilling	2 / 69
11 600 ...	Solid carbide drilling	2 / 14
11 601 ...	Solid carbide drilling	2 / 14
11 603 ...	Solid carbide drilling	2 / 25
11 604 ...	Solid carbide drilling	2 / 25
11 606 ...	Solid carbide drilling	2 / 36
11 607 ...	Solid carbide drilling	2 / 36
11 609 ...	Solid carbide drilling	2 / 50
11 610 ...	Solid carbide drilling	2 / 50
11 612 ...	Solid carbide drilling	2 / 59
11 615 ...	Solid carbide drilling	2 / 66
11 620 ...	Solid carbide drilling	2 / 14
11 621 ...	Solid carbide drilling	2 / 14
11 623 ...	Solid carbide drilling	2 / 25
11 624 ...	Solid carbide drilling	2 / 25
11 629 ...	Solid carbide drilling	2 / 50
11 630 ...	Solid carbide drilling	2 / 50
11 770 ...	Solid carbide drilling	2 / 70
11 776 ...	Solid carbide drilling	2 / 9
11 777 ...	Solid carbide drilling	2 / 9
11 778 ...	Solid carbide drilling	2 / 9
11 779 ...	Solid carbide drilling	2 / 21
11 780 ...	Solid carbide drilling	2 / 21
11 781 ...	Solid carbide drilling	2 / 21
11 782 ...	Solid carbide drilling	2 / 32
11 783 ...	Solid carbide drilling	2 / 32
11 784 ...	Solid carbide drilling	2 / 32
11 785 ...	Solid carbide drilling	2 / 38
11 786 ...	Solid carbide drilling	2 / 38
11 787 ...	Solid carbide drilling	2 / 38
11 788 ...	Solid carbide drilling	2 / 55
11 789 ...	Solid carbide drilling	2 / 55
11 790 ...	Solid carbide drilling	2 / 55
22 001 ...	Taps and thread formers	6 / 46
22 006 ...	Taps and thread formers	6 / 52
22 007 ...	Taps and thread formers	6 / 53
22 016 ...	Taps and thread formers	6 / 46
22 018 ...	Taps and thread formers	6 / 56
22 020 ...	Taps and thread formers	6 / 24
22 021 ...	Taps and thread formers	6 / 24
22 022 ...	Taps and thread formers	6 / 24
22 023 ...	Taps and thread formers	6 / 24
22 028 ...	Taps and thread formers	6 / 52
22 029 ...	Taps and thread formers	6 / 53
22 030 ...	Taps and thread formers	6 / 52
22 031 ...	Taps and thread formers	6 / 53
22 032 ...	Taps and thread formers	6 / 54
22 033 ...	Taps and thread formers	6 / 55
22 036 ...	Taps and thread formers	6 / 54
22 037 ...	Taps and thread formers	6 / 55
22 038 ...	Taps and thread formers	6 / 26
22 039 ...	Taps and thread formers	6 / 26
22 040 ...	Taps and thread formers	6 / 42
22 041 ...	Taps and thread formers	6 / 42
22 042 ...	Taps and thread formers	6 / 42
22 044 ...	Taps and thread formers	6 / 41
22 045 ...	Taps and thread formers	6 / 41
22 046 ...	Taps and thread formers	6 / 41
22 047 ...	Taps and thread formers	6 / 41
22 053 ...	Taps and thread formers	6 / 25
22 055 ...	Taps and thread formers	6 / 25
22 056 ...	Taps and thread formers	6 / 26
22 057 ...	Taps and thread formers	6 / 26
22 058 ...	Taps and thread formers	6 / 26
22 059 ...	Taps and thread formers	6 / 26
22 060 ...	Taps and thread formers	6 / 26
22 061 ...	Taps and thread formers	6 / 26
22 072 ...	Taps and thread formers	6 / 39
22 073 ...	Taps and thread formers	6 / 44
22 075 ...	Taps and thread formers	6 / 27
22 076 ...	Taps and thread formers	6 / 44
22 077 ...	Taps and thread formers	6 / 27
22 078 ...	Taps and thread formers	6 / 48
22 080 ...	Taps and thread formers	6 / 48
22 081 ...	Taps and thread formers	6 / 27
22 082 ...	Taps and thread formers	6 / 40
22 083 ...	Taps and thread formers	6 / 40
22 084 ...	Taps and thread formers	6 / 40
22 085 ...	Taps and thread formers	6 / 40
22 086 ...	Taps and thread formers	6 / 43
22 087 ...	Taps and thread formers	6 / 43
22 088 ...	Taps and thread formers	6 / 43
22 089 ...	Taps and thread formers	6 / 43
22 090 ...	Taps and thread formers	6 / 42
22 091 ...	Taps and thread formers	6 / 42
22 092 ...	Taps and thread formers	6 / 25
22 093 ...	Taps and thread formers	6 / 25
22 098 ...	Taps and thread formers	6 / 30
22 100 ...	Taps and thread formers	6 / 59
22 101 ...	Taps and thread formers	6 / 59
22 104 ...	Taps and thread formers	6 / 60
22 105 ...	Taps and thread formers	6 / 60
22 106 ...	Taps and thread formers	6 / 60
22 107 ...	Taps and thread formers	6 / 60
22 108 ...	Taps and thread formers	6 / 60
22 112 ...	Taps and thread formers	6 / 59
22 114 ...	Taps and thread formers	6 / 61
22 115 ...	Taps and thread formers	6 / 61
22 118 ...	Taps and thread formers	6 / 61
22 120 ...	Taps and thread formers	6 / 25
22 121 ...	Taps and thread formers	6 / 25
22 122 ...	Taps and thread formers	6 / 57
22 123 ...	Taps and thread formers	6 / 57
22 124 ...	Taps and thread formers	6 / 44
22 127 ...	Taps and thread formers	6 / 24
22 128 ...	Taps and thread formers	6 / 59
22 136 ...	Taps and thread formers	6 / 59
22 138 ...	Taps and thread formers	6 / 40
22 139 ...	Taps and thread formers	6 / 40
22 140 ...	Taps and thread formers	6 / 27
22 142 ...	Taps and thread formers	6 / 27
22 144 ...	Taps and thread formers	6 / 78
22 146 ...	Taps and thread formers	6 / 78
22 147 ...	Taps and thread formers	6 / 24
22 148 ...	Taps and thread formers	6 / 23
22 149 ...	Taps and thread formers	6 / 36
22 154 ...	Taps and thread formers	6 / 60
22 159 ...	Taps and thread formers	6 / 28
22 160 ...	Taps and thread formers	6 / 28
22 163 ...	Taps and thread formers	6 / 44
22 164 ...	Taps and thread formers	6 / 44
22 166 ...	Taps and thread formers	6 / 97
22 171 ...	Taps and thread formers	6 / 79
22 173 ...	Taps and thread formers	6 / 79
22 176 ...	Taps and thread formers	6 / 74
22 177 ...	Taps and thread formers	6 / 74
22 179 ...	Taps and thread formers	6 / 80
22 182 ...	Taps and thread formers	6 / 72
22 186 ...	Taps and thread formers	6 / 71
22 188 ...	Taps and thread formers	6 / 74
22 189 ...	Taps and thread formers	6 / 74
22 193 ...	Taps and thread formers	6 / 66
22 196 ...	Taps and thread formers	6 / 81
22 197 ...	Taps and thread formers	6 / 81
22 200 ...	Taps and thread formers	6 / 80
22 202 ...	Taps and thread formers	6 / 70
22 204 ...	Taps and thread formers	6 / 81
22 205 ...	Taps and thread formers	6 / 81
22 209 ...	Taps and thread formers	6 / 79
22 210 ...	Taps and thread formers	6 / 66
22 227 ...	Taps and thread formers	6 / 55
22 228 ...	Taps and thread formers	6 / 55
22 233 ...	Taps and thread formers	6 / 29
22 234 ...	Taps and thread formers	6 / 29
22 238 ...	Taps and thread formers	6 / 71
22 250 ...	Taps and thread formers	6 / 90
22 266 ...	Taps and thread formers	6 / 92
22 267 ...	Taps and thread formers	6 / 92
22 269 ...	Taps and thread formers	6 / 90

Article no.	Designation	Page(s)
22 270 ...	Taps and thread formers	6 / 94
22 271 ...	Taps and thread formers	6 / 94
22 280 ...	Taps and thread formers	6 / 64
22 297 ...	Taps and thread formers	6 / 28
22 298 ...	Taps and thread formers	6 / 28
22 302 ...	Taps and thread formers	6 / 101
22 303 ...	Taps and thread formers	6 / 101
22 307 ...	Taps and thread formers	6 / 100
22 308 ...	Taps and thread formers	6 / 100
22 312 ...	Taps and thread formers	6 / 103
22 313 ...	Taps and thread formers	6 / 103
22 317 ...	Taps and thread formers	6 / 98
22 324 ...	Taps and thread formers	6 / 43
22 326 ...	Taps and thread formers	6 / 43
22 328 ...	Taps and thread formers	6 / 39
22 329 ...	Taps and thread formers	6 / 39
22 339 ...	Taps and thread formers	6 / 88
22 346 ...	Taps and thread formers	6 / 83
22 347 ...	Taps and thread formers	6 / 88
22 352 ...	Taps and thread formers	6 / 83
22 354 ...	Taps and thread formers	6 / 86
22 355 ...	Taps and thread formers	6 / 86
22 358 ...	Taps and thread formers	6 / 86
22 359 ...	Taps and thread formers	6 / 89
22 360 ...	Taps and thread formers	6 / 89
22 361 ...	Taps and thread formers	6 / 108
22 364 ...	Taps and thread formers	6 / 106
22 365 ...	Taps and thread formers	6 / 106
22 371 ...	Taps and thread formers	6 / 106
22 372 ...	Taps and thread formers	6 / 106
22 374 ...	Taps and thread formers	6 / 107
22 375 ...	Taps and thread formers	6 / 107
22 402 ...	Taps and thread formers	6 / 109
22 406 ...	Taps and thread formers	6 / 39
22 407 ...	Taps and thread formers	6 / 39
22 409 ...	Taps and thread formers	6 / 100
22 416 ...	Taps and thread formers	6 / 37
22 417 ...	Taps and thread formers	6 / 37
22 421 ...	Taps and thread formers	6 / 98
22 422 ...	Taps and thread formers	6 / 47
22 423 ...	Taps and thread formers	6 / 47
22 424 ...	Taps and thread formers	6 / 44
22 425 ...	Taps and thread formers	6 / 44
22 441 ...	Taps and thread formers	6 / 69
22 443 ...	Taps and thread formers	6 / 39
22 444 ...	Taps and thread formers	6 / 39
22 449 ...	Taps and thread formers	6 / 38
22 450 ...	Taps and thread formers	6 / 38
22 452 ...	Taps and thread formers	6 / 61
22 453 ...	Taps and thread formers	6 / 61
22 454 ...	Taps and thread formers	6 / 61
22 490 ...	Taps and thread formers	6 / 69
22 491 ...	Taps and thread formers	6 / 69
22 498 ...	Taps and thread formers	6 / 41
22 499 ...	Taps and thread formers	6 / 41
22 500 ...	Taps and thread formers	6 / 45
22 501 ...	Taps and thread formers	6 / 21
22 502 ...	Taps and thread formers	6 / 22
22 503 ...	Taps and thread formers	6 / 21
22 504 ...	Taps and thread formers	6 / 22
22 505 ...	Taps and thread formers	6 / 21
22 508 ...	Taps and thread formers	6 / 21
22 509 ...	Taps and thread formers	6 / 22
22 510 ...	Taps and thread formers	6 / 21
22 511 ...	Taps and thread formers	6 / 22
22 514 ...	Taps and thread formers	6 / 29
22 515 ...	Taps and thread formers	6 / 29
22 518 ...	Taps and thread formers	6 / 35
22 519 ...	Taps and thread formers	6 / 35
22 520 ...	Taps and thread formers	6 / 35
22 521 ...	Taps and thread formers	6 / 35
22 522 ...	Taps and thread formers	6 / 35
22 523 ...	Taps and thread formers	6 / 35
22 524 ...	Taps and thread formers	6 / 36
22 525 ...	Taps and thread formers	6 / 36
22 526 ...	Taps and thread formers	6 / 36
22 527 ...	Taps and thread formers	6 / 36
22 532 ...	Taps and thread formers	6 / 35
22 533 ...	Taps and thread formers	6 / 35
22 534 ...	Taps and thread formers	6 / 36
22 535 ...	Taps and thread formers	6 / 36
22 538 ...	Taps and thread formers	6 / 47
22 539 ...	Taps and thread formers	6 / 47
22 542 ...	Taps and thread formers	6 / 23
22 543 ...	Taps and thread formers	6 / 23
22 544 ...	Taps and thread formers	6 / 37
22 545 ...	Taps and thread formers	6 / 37
22 546 ...	Taps and thread formers	6 / 37
22 548 ...	Taps and thread formers	6 / 70
22 549 ...	Taps and thread formers	6 / 70
22 550 ...	Taps and thread formers	6 / 65
22 551 ...	Taps and thread formers	6 / 66
22 552 ...	Taps and thread formers	6 / 66
22 553 ...	Taps and thread formers	6 / 70
22 554 ...	Taps and thread formers	6 / 70
22 555 ...	Taps and thread formers	6 / 69
22 556 ...	Taps and thread formers	6 / 69
22 563 ...	Taps and thread formers	6 / 70
22 566 ...	Taps and thread formers	6 / 38
22 567 ...	Taps and thread formers	6 / 38
22 570 ...	Taps and thread formers	6 / 66
22 572 ...	Taps and thread formers	6 / 90
22 573 ...	Taps and thread formers	6 / 90
22 582 ...	Taps and thread formers	6 / 92
22 583 ...	Taps and thread formers	6 / 92
22 587 ...	Taps and thread formers	6 / 65
22 590 ...	Taps and thread formers	6 / 65
22 592 ...	Taps and thread formers	6 / 23
22 593 ...	Taps and thread formers	6 / 23
22 594 ...	Taps and thread formers	6 / 37
22 595 ...	Taps and thread formers	6 / 37
22 596 ...	Taps and thread formers	6 / 23
22 597 ...	Taps and thread formers	6 / 23
22 601 ...	Taps and thread formers	6 / 71
22 602 ...	Taps and thread formers	6 / 98
22 603 ...	Taps and thread formers	6 / 98
22 606 ...	Taps and thread formers	6 / 100
22 607 ...	Taps and thread formers	6 / 100
22 624 ...	Taps and thread formers	6 / 86
22 630 ...	Taps and thread formers	6 / 83
22 632 ...	Taps and thread formers	6 / 83
22 633 ...	Taps and thread formers	6 / 85
22 634 ...	Taps and thread formers	6 / 85
22 635 ...	Taps and thread formers	6 / 85
22 636 ...	Taps and thread formers	6 / 85
22 639 ...	Taps and thread formers	6 / 85
22 662 ...	Taps and thread formers	6 / 63
22 663 ...	Taps and thread formers	6 / 63
22 664 ...	Taps and thread formers	6 / 64
22 665 ...	Taps and thread formers	6 / 64
22 668 ...	Taps and thread formers	6 / 95
22 670 ...	Taps and thread formers	6 / 95
22 672 ...	Taps and thread formers	6 / 96
22 676 ...	Taps and thread formers	6 / 104
22 677 ...	Taps and thread formers	6 / 104
22 680 ...	Taps and thread formers	6 / 105
22 806 ...	Taps and thread formers	6 / 55
22 817 ...	Taps and thread formers	6 / 78
23 010 ...	Taps and thread formers	6 / 31
23 021 ...	Taps and thread formers	6 / 31
23 026 ...	Taps and thread formers	6 / 49
23 027 ...	Taps and thread formers	6 / 49
23 041 ...	Taps and thread formers	6 / 67
23 047 ...	Taps and thread formers	6 / 75
23 110 ...	Taps and thread formers	6 / 31
23 111 ...	Taps and thread formers	6 / 31
23 112 ...	Taps and thread formers	6 / 31
23 113 ...	Taps and thread formers	6 / 31
23 114 ...	Taps and thread formers	6 / 32
23 115 ...	Taps and thread formers	6 / 32
23 116 ...	Taps and thread formers	6 / 32
23 117 ...	Taps and thread formers	6 / 32
23 118 ...	Taps and thread formers	6 / 49
23 119 ...	Taps and thread formers	6 / 49
23 120 ...	Taps and thread formers	6 / 49
23 121 ...	Taps and thread formers	6 / 49
23 122 ...	Taps and thread formers	6 / 49
23 123 ...	Taps and thread formers	6 / 49
23 124 ...	Taps and thread formers	6 / 49

Article no.	Designation	Page(s)
23 125 ...	Taps and thread formers	6 / 49
23 126 ...	Taps and thread formers	6 / 50
23 127 ...	Taps and thread formers	6 / 50
23 140 ...	Taps and thread formers	6 / 68
23 141 ...	Taps and thread formers	6 / 68
23 142 ...	Taps and thread formers	6 / 68
23 143 ...	Taps and thread formers	6 / 68
23 144 ...	Taps and thread formers	6 / 76
23 145 ...	Taps and thread formers	6 / 76
23 146 ...	Taps and thread formers	6 / 76
23 147 ...	Taps and thread formers	6 / 76
23 148 ...	Taps and thread formers	6 / 76
23 149 ...	Taps and thread formers	6 / 76
23 160 ...	Taps and thread formers	6 / 84
23 161 ...	Taps and thread formers	6 / 84
23 162 ...	Taps and thread formers	6 / 87
23 163 ...	Taps and thread formers	6 / 87
23 170 ...	Taps and thread formers	6 / 91
23 171 ...	Taps and thread formers	6 / 91
23 172 ...	Taps and thread formers	6 / 93
23 173 ...	Taps and thread formers	6 / 93
23 180 ...	Taps and thread formers	6 / 99
23 181 ...	Taps and thread formers	6 / 99
23 182 ...	Taps and thread formers	6 / 102
23 183 ...	Taps and thread formers	6 / 102
23 210 ...	Taps and thread formers	6 / 34
23 212 ...	Taps and thread formers	6 / 32
23 213 ...	Taps and thread formers	6 / 32
23 216 ...	Taps and thread formers	6 / 50
23 217 ...	Taps and thread formers	6 / 50
23 240 ...	Taps and thread formers	6 / 68
23 241 ...	Taps and thread formers	6 / 68
23 242 ...	Taps and thread formers	6 / 76
23 243 ...	Taps and thread formers	6 / 76
23 270 ...	Taps and thread formers	6 / 91
23 271 ...	Taps and thread formers	6 / 91
23 272 ...	Taps and thread formers	6 / 93
23 273 ...	Taps and thread formers	6 / 93
23 280 ...	Taps and thread formers	6 / 99
23 281 ...	Taps and thread formers	6 / 99
23 282 ...	Taps and thread formers	6 / 102
23 283 ...	Taps and thread formers	6 / 102
23 310 ...	Taps and thread formers	6 / 32
23 311 ...	Taps and thread formers	6 / 32
23 312 ...	Taps and thread formers	6 / 50
23 313 ...	Taps and thread formers	6 / 50
23 340 ...	Taps and thread formers	6 / 68
23 341 ...	Taps and thread formers	6 / 68
23 342 ...	Taps and thread formers	6 / 76
23 343 ...	Taps and thread formers	6 / 76
23 370 ...	Taps and thread formers	6 / 91
23 371 ...	Taps and thread formers	6 / 91
23 372 ...	Taps and thread formers	6 / 93
23 373 ...	Taps and thread formers	6 / 93
23 410 ...	Taps and thread formers	6 / 33
23 411 ...	Taps and thread formers	6 / 33
23 412 ...	Taps and thread formers	6 / 33
23 413 ...	Taps and thread formers	6 / 33
23 414 ...	Taps and thread formers	6 / 50
23 415 ...	Taps and thread formers	6 / 50
23 416 ...	Taps and thread formers	6 / 51
23 417 ...	Taps and thread formers	6 / 51
23 426 ...	Taps and thread formers	6 / 51
23 427 ...	Taps and thread formers	6 / 51
23 440 ...	Taps and thread formers	6 / 68
23 441 ...	Taps and thread formers	6 / 68
23 442 ...	Taps and thread formers	6 / 77
23 443 ...	Taps and thread formers	6 / 77
23 447 ...	Taps and thread formers	6 / 77
23 450 ...	Taps and thread formers	6 / 33
23 451 ...	Taps and thread formers	6 / 33
23 456 ...	Taps and thread formers	6 / 51
23 457 ...	Taps and thread formers	6 / 51
23 470 ...	Taps and thread formers	6 / 91
23 471 ...	Taps and thread formers	6 / 91
23 472 ...	Taps and thread formers	6 / 93
23 473 ...	Taps and thread formers	6 / 93
23 480 ...	Taps and thread formers	6 / 99
23 481 ...	Taps and thread formers	6 / 99
23 482 ...	Taps and thread formers	6 / 102
23 483 ...	Taps and thread formers	6 / 102
23 512 ...	Taps and thread formers	6 / 58
23 513 ...	Taps and thread formers	6 / 58
23 610 ...	Taps and thread formers	6 / 33
23 611 ...	Taps and thread formers	6 / 33
23 612 ...	Taps and thread formers	6 / 33
23 613 ...	Taps and thread formers	6 / 33
23 614 ...	Taps and thread formers	6 / 51
23 615 ...	Taps and thread formers	6 / 51
23 616 ...	Taps and thread formers	6 / 51
23 617 ...	Taps and thread formers	6 / 51
23 810 ...	Taps and thread formers	6 / 62
23 811 ...	Taps and thread formers	6 / 62
23 812 ...	Taps and thread formers	6 / 62
23 813 ...	Taps and thread formers	6 / 62
23 814 ...	Taps and thread formers	6 / 62
23 815 ...	Taps and thread formers	6 / 62
23 816 ...	Taps and thread formers	6 / 62
23 817 ...	Taps and thread formers	6 / 62
23 840 ...	Taps and thread formers	6 / 82
23 841 ...	Taps and thread formers	6 / 82
23 842 ...	Taps and thread formers	6 / 82
23 843 ...	Taps and thread formers	6 / 82
30 100 ...	Reaming and Countersinking	4 / 46
30 102 ...	Reaming and Countersinking	4 / 46
30 105 ...	Reaming and Countersinking	4 / 48
30 110 ...	Reaming and Countersinking	4 / 46
30 115 ...	Reaming and Countersinking	4 / 44
30 116 ...	Reaming and Countersinking	4 / 43
30 120 ...	Reaming and Countersinking	4 / 49
30 121 ...	Reaming and Countersinking	4 / 49
30 125 ...	Reaming and Countersinking	4 / 49
30 130 ...	Reaming and Countersinking	4 / 46
30 132 ...	Reaming and Countersinking	4 / 46
30 140 ...	Reaming and Countersinking	4 / 45
30 150 ...	Reaming and Countersinking	4 / 47
30 155 ...	Reaming and Countersinking	4 / 47
30 160 ...	Reaming and Countersinking	4 / 44
30 170 ...	Reaming and Countersinking	4 / 48
30 190 ...	Reaming and Countersinking	4 / 42
30 191 ...	Reaming and Countersinking	4 / 42
30 192 ...	Reaming and Countersinking	4 / 42
30 195 ...	Reaming and Countersinking	4 / 40
40 100 ...	Reaming and Countersinking	4 / 39
40 110 ...	Reaming and Countersinking	4 / 32
40 115 ...	Reaming and Countersinking	4 / 33
40 139 ...	Reaming and Countersinking	4 / 38
40 140 ...	Reaming and Countersinking	4 / 35
40 145 ...	Reaming and Countersinking	4 / 37
40 150 ...	Reaming and Countersinking	4 / 34
40 155 ...	Reaming and Countersinking	4 / 37
40 160 ...	Reaming and Countersinking	4 / 39
40 210 ...	Reaming and Countersinking	4 / 16
40 211 ...	Reaming and Countersinking	4 / 17
40 220 ...	Reaming and Countersinking	4 / 16
40 221 ...	Reaming and Countersinking	4 / 17
40 230 ...	Reaming and Countersinking	4 / 16
40 231 ...	Reaming and Countersinking	4 / 17
40 240 ...	Reaming and Countersinking	4 / 16
40 241 ...	Reaming and Countersinking	4 / 17
40 245 ...	Reaming and Countersinking	4 / 16
40 246 ...	Reaming and Countersinking	4 / 17
40 400 ...	Reaming and Countersinking	4 / 31
40 401 ...	Reaming and Countersinking	4 / 23
40 402 ...	Reaming and Countersinking	4 / 24
40 403 ...	Reaming and Countersinking	4 / 25
40 404 ...	Reaming and Countersinking	4 / 27
40 410 ...	Reaming and Countersinking	4 / 31
40 420 ...	Reaming and Countersinking	4 / 29
40 421 ...	Reaming and Countersinking	4 / 29
40 430 ...	Reaming and Countersinking	4 / 30
40 431 ...	Reaming and Countersinking	4 / 30
40 471 ...	Reaming and Countersinking	4 / 23
40 472 ...	Reaming and Countersinking	4 / 24
40 473 ...	Reaming and Countersinking	4 / 25
40 474 ...	Reaming and Countersinking	4 / 27
40 475 ...	Reaming and Countersinking	4 / 25
40 476 ...	Reaming and Countersinking	4 / 27
40 477 ...	Reaming and Countersinking	4 / 25

Article no.	Designation	Page(s)
40 478 ...	Reaming and Countersinking	4 / 27
40 484 ...	Reaming and Countersinking	4 / 23
40 485 ...	Reaming and Countersinking	4 / 24
40 486 ...	Reaming and Countersinking	4 / 25
40 487 ...	Reaming and Countersinking	4 / 27
40 501 ...	Reaming and Countersinking	4 / 10
40 503 ...	Reaming and Countersinking	4 / 10
40 504 ...	Reaming and Countersinking	4 / 11
40 505 ...	Reaming and Countersinking	4 / 13
40 506 ...	Reaming and Countersinking	4 / 11
40 521 ...	Reaming and Countersinking	4 / 8
40 525 ...	Reaming and Countersinking	4 / 13
40 526 ...	Reaming and Countersinking	4 / 8
40 535 ...	Reaming and Countersinking	4 / 9
40 536 ...	Reaming and Countersinking	4 / 13
40 539 ...	Reaming and Countersinking	4 / 9
40 544 ...	Reaming and Countersinking	4 / 8
40 551 ...	Reaming and Countersinking	4 / 13
40 560 ...	Reaming and Countersinking	4 / 13
40 570 ...	Reaming and Countersinking	4 / 13
40 571 ...	Reaming and Countersinking	4 / 9
40 580 ...	Reaming and Countersinking	4 / 9
40 585 ...	Reaming and Countersinking	4 / 9
40 590 ...	Reaming and Countersinking	4 / 14
40 591 ...	Reaming and Countersinking	4 / 14
40 597 ...	Reaming and Countersinking	4 / 8
40 605 ...	Reaming and Countersinking	4 / 19
40 606 ...	Reaming and Countersinking	4 / 21
40 625 ...	Reaming and Countersinking	4 / 19
40 626 ...	Reaming and Countersinking	4 / 21
40 635 ...	Reaming and Countersinking	4 / 19
40 636 ...	Reaming and Countersinking	4 / 21
40 640 ...	Reaming and Countersinking	4 / 20
40 641 ...	Reaming and Countersinking	4 / 22
40 644 ...	Reaming and Countersinking	4 / 20
40 645 ...	Reaming and Countersinking	4 / 22
40 648 ...	Reaming and Countersinking	4 / 19
40 649 ...	Reaming and Countersinking	4 / 21
40 652 ...	Reaming and Countersinking	4 / 19
40 653 ...	Reaming and Countersinking	4 / 21
40 657 ...	Reaming and Countersinking	4 / 20
40 665 ...	Reaming and Countersinking	4 / 22
50 092 ...	HSS Milling Cutters	13 / 10
50 093 ...	HSS Milling Cutters	13 / 10
50 100 ...	HSS Milling Cutters	13 / 8
50 104 ...	HSS Milling Cutters	13 / 14
50 105 ...	HSS Milling Cutters	13 / 11
50 106 ...	HSS Milling Cutters	13 / 11
50 110 ...	HSS Milling Cutters	13 / 14
50 111 ...	HSS Milling Cutters	13 / 14
50 120 ...	HSS Milling Cutters	13 / 7
50 121 ...	HSS Milling Cutters	13 / 7
50 122 ...	HSS Milling Cutters	13 / 8
50 124 ...	HSS Milling Cutters	13 / 13
50 125 ...	HSS Milling Cutters	13 / 22
50 140 ...	HSS Milling Cutters	13 / 24
50 141 ...	HSS Milling Cutters	13 / 24
50 144 ...	HSS Milling Cutters	13 / 6
50 153 ...	HSS Milling Cutters	13 / 21
50 157 ...	HSS Milling Cutters	13 / 21
50 234 ...	HSS Milling Cutters	13 / 29
50 240 ...	HSS Milling Cutters	13 / 28
50 241 ...	HSS Milling Cutters	13 / 30
50 245 ...	HSS Milling Cutters	13 / 32
50 246 ...	HSS Milling Cutters	13 / 32
50 248 ...	HSS Milling Cutters	13 / 31
50 250 ...	HSS Milling Cutters	13 / 37
50 255 ...	HSS Milling Cutters	13 / 37
50 260 ...	HSS Milling Cutters	13 / 38
50 297 ...	HSS Milling Cutters	13 / 38
50 306 ...	Milling tools with indexable inserts	15 / 27
50 308 ...	HSS Milling Cutters	13 / 26
50 320 ...	HSS Milling Cutters	13 / 25
50 321 ...	HSS Milling Cutters	13 / 25
50 340 ...	HSS Milling Cutters	13 / 35
50 341 ...	HSS Milling Cutters	13 / 36
50 342 ...	HSS Milling Cutters	13 / 34
50 348 ...	HSS Milling Cutters	13 / 34
50 349 ...	HSS Milling Cutters	13 / 35
50 360 ...	HSS Milling Cutters	13 / 33
50 362 ...	HSS Milling Cutters	13 / 33
50 381 ...	Milling tools with indexable inserts	15 / 134
50 382 ...	Milling tools with indexable inserts	15 / 134
50 409 ...	Milling tools with indexable inserts	15 / 96
50 421 ...	Milling tools with indexable inserts	15 / 40
50 424 ...	Milling tools with indexable inserts	15 / 76
50 425 ...	Milling tools with indexable inserts	15 / 76
50 426 ...	Milling tools with indexable inserts	15 / 40
50 428 ...	Milling tools with indexable inserts	15 / 39
50 446 ...	Milling tools with indexable inserts	15 / 31
50 449 ...	Milling tools with indexable inserts	15 / 41
50 457 ...	Milling tools with indexable inserts	15 / 18
50 459 ...	Milling tools with indexable inserts	15 / 18
50 463 ...	Milling tools with indexable inserts	15 / 65
50 464 ...	Milling tools with indexable inserts	15 / 65
50 466 ...	Milling tools with indexable inserts	15 / 93
50 467 ...	Milling tools with indexable inserts	15 / 93
50 468 ...	Milling tools with indexable inserts	15 / 93
50 469 ...	Milling tools with indexable inserts	15 / 71
50 473 ...	Milling tools with indexable inserts	15 / 71
50 477 ...	Milling tools with indexable inserts	15 / 82
50 478 ...	Milling tools with indexable inserts	15 / 82
50 479 ...	Milling tools with indexable inserts	15 / 71
50 481 ...	Milling tools with indexable inserts	15 / 109
50 483 ...	Milling tools with indexable inserts	15 / 110
50 487 ...	Milling tools with indexable inserts	15 / 86
50 488 ...	Milling tools with indexable inserts	15 / 89
50 491 ...	Milling tools with indexable inserts	15 / 131
50 492 ...	Milling tools with indexable inserts	15 / 131
50 493 ...	Milling tools with indexable inserts	15 / 113
50 496 ...	Milling tools with indexable inserts	15 / 76
50 498 ...	Milling tools with indexable inserts	15 / 59
50 500 ...	Milling tools with indexable inserts	15 / 47
50 503 ...	Milling tools with indexable inserts	15 / 101
50 504 ...	Milling tools with indexable inserts	15 / 103
50 507 ...	Milling tools with indexable inserts	15 / 59
50 508 ...	Milling tools with indexable inserts	15 / 113
50 514 ...	Milling tools with indexable inserts	15 / 24
50 515 ...	Milling tools with indexable inserts	15 / 93
50 517 ...	Milling tools with indexable inserts	15 / 93
50 518 ...	Milling tools with indexable inserts	15 / 100
50 520 ...	Milling tools with indexable inserts	15 / 120
50 521 ...	Milling tools with indexable inserts	15 / 120
50 580 ...	Milling tools with indexable inserts	15 / 79
50 593 ...	Solid Carbide milling cutters	14 / 143
50 594 ...	Solid Carbide milling cutters	14 / 143
50 598 ...	Solid Carbide milling cutters	14 / 151
50 599 ...	Solid Carbide milling cutters	14 / 151
50 608 ...	Solid Carbide milling cutters	14 / 152
50 609 ...	Solid Carbide milling cutters	14 / 152
50 610 ...	Solid Carbide milling cutters	14 / 238
50 611 ...	Solid Carbide milling cutters	14 / 238
50 614 ...	Solid Carbide milling cutters	14 / 147
50 618 ...	Solid Carbide milling cutters	14 / 176
50 624 ...	Solid Carbide milling cutters	14 / 176
50 625 ...	Solid Carbide milling cutters	14 / 177
50 628 ...	Solid Carbide milling cutters	14 / 173
50 631 ...	Solid Carbide milling cutters	14 / 167
50 633 ...	Solid Carbide milling cutters	14 / 165
50 634 ...	Solid Carbide milling cutters	14 / 166
50 635 ...	Solid Carbide milling cutters	14 / 171
50 637 ...	Solid Carbide milling cutters	14 / 178
50 641 ...	Solid Carbide milling cutters	14 / 202
50 642 ...	Solid Carbide milling cutters	14 / 198
50 643 ...	Solid Carbide milling cutters	14 / 198
50 649 ...	Solid Carbide milling cutters	14 / 211
50 651 ...	Solid Carbide milling cutters	14 / 213
50 666 ...	Milling tools with indexable inserts	15 / 33
50 668 ...	Milling tools with indexable inserts	15 / 75
50 669 ...	Milling tools with indexable inserts	15 / 35
50 675 ...	Milling tools with indexable inserts	15 / 80
50 679 ...	Milling tools with indexable inserts	15 / 84
50 680 ...	Milling tools with indexable inserts	15 / 87
50 681 ...	Milling tools with indexable inserts	15 / 97
50 682 ...	Milling tools with indexable inserts	15 / 97
50 683 ...	Milling tools with indexable inserts	15 / 98
50 684 ...	Milling tools with indexable inserts	15 / 106
50 685 ...	Milling tools with indexable inserts	15 / 107
50 686 ...	Milling tools with indexable inserts	15 / 108

Article no.	Designation	Page(s)
50 689 ...	Milling tools with indexable inserts	15 / 119
50 698 ...	Milling tools with indexable inserts	15 / 43
50 703 ...	Milling tools with indexable inserts	15 / 77
50 704 ...	Milling tools with indexable inserts	15 / 34
50 705 ...	Milling tools with indexable inserts	15 / 38
50 706 ...	Milling tools with indexable inserts	15 / 34
50 707 ...	Milling tools with indexable inserts	15 / 34
50 715 ...	Milling tools with indexable inserts	15 / 135
50 716 ...	Milling tools with indexable inserts	15 / 85
50 717 ...	Milling tools with indexable inserts	15 / 87
50 718 ...	Milling tools with indexable inserts	15 / 81
50 720 ...	Milling tools with indexable inserts	15 / 85
50 721 ...	Milling tools with indexable inserts	15 / 88
50 722 ...	Milling tools with indexable inserts	15 / 81
50 723 ...	Milling tools with indexable inserts	15 / 92
50 724 ...	Milling tools with indexable inserts	15 / 92
50 725 ...	Milling tools with indexable inserts	15 / 48
50 726 ...	Milling tools with indexable inserts	15 / 74
50 727 ...	Milling tools with indexable inserts	15 / 74
50 728 ...	Milling tools with indexable inserts	15 / 74
50 730 ...	Milling tools with indexable inserts	15 / 132
50 733 ...	Milling tools with indexable inserts	15 / 45
50 734 ...	Milling tools with indexable inserts	15 / 133
50 736 ...	Milling tools with indexable inserts	15 / 60
50 737 ...	Milling tools with indexable inserts	15 / 60
50 738 ...	Milling tools with indexable inserts	15 / 61
50 739 ...	Milling tools with indexable inserts	15 / 61
50 741 ...	Milling tools with indexable inserts	15 / 28
50 742 ...	Milling tools with indexable inserts	15 / 15
50 743 ...	Milling tools with indexable inserts	15 / 15
50 744 ...	Milling tools with indexable inserts	15 / 16
50 746 ...	Milling tools with indexable inserts	15 / 66
50 747 ...	Milling tools with indexable inserts	15 / 66
50 748 ...	Milling tools with indexable inserts	15 / 67
50 749 ...	Milling tools with indexable inserts	15 / 67
50 751 ...	Milling tools with indexable inserts	15 / 57
50 752 ...	Milling tools with indexable inserts	15 / 57
50 753 ...	Milling tools with indexable inserts	15 / 58
50 754 ...	Milling tools with indexable inserts	15 / 58
50 756 ...	Milling tools with indexable inserts	15 / 130
50 757 ...	Milling tools with indexable inserts	15 / 62
50 758 ...	Milling tools with indexable inserts	15 / 62
50 759 ...	Milling tools with indexable inserts	15 / 68
50 761 ...	Milling tools with indexable inserts	15 / 75
50 762 ...	Milling tools with indexable inserts	15 / 28
50 767 ...	Milling tools with indexable inserts	15 / 25
50 768 ...	Milling tools with indexable inserts	15 / 95
50 769 ...	Milling tools with indexable inserts	15 / 95
50 770 ...	Milling tools with indexable inserts	15 / 94
50 771 ...	Milling tools with indexable inserts	15 / 94
50 772 ...	Milling tools with indexable inserts	15 / 21
50 773 ...	Milling tools with indexable inserts	15 / 54
50 774 ...	Milling tools with indexable inserts	15 / 51
50 775 ...	Milling tools with indexable inserts	15 / 55
50 776 ...	Milling tools with indexable inserts	15 / 52
50 777 ...	Milling tools with indexable inserts	15 / 29
50 778 ...	Milling tools with indexable inserts	15 / 72
50 780 ...	Milling tools with indexable inserts	15 / 72
50 782 ...	Milling tools with indexable inserts	15 / 68
50 785 ...	Milling tools with indexable inserts	15 / 90
50 799 ...	Circular and Thread Milling	7 / 19
50 800 ...	Circular and Thread Milling	7 / 36
50 805 ...	Circular and Thread Milling	7 / 18
50 811 ...	Circular and Thread Milling	7 / 57
50 815 ...	Circular and Thread Milling	7 / 54
50 816 ...	Circular and Thread Milling	7 / 57
50 818 ...	Circular and Thread Milling	7 / 57
50 819 ...	Circular and Thread Milling	7 / 58
50 821 ...	Circular and Thread Milling	7 / 54
50 823 ...	Circular and Thread Milling	7 / 58
50 824 ...	Circular and Thread Milling	7 / 58
50 825 ...	Circular and Thread Milling	7 / 61
50 826 ...	Circular and Thread Milling	7 / 61
50 827 ...	Circular and Thread Milling	7 / 62
50 840 ...	Circular and Thread Milling	7 / 55
50 841 ...	Circular and Thread Milling	7 / 47
50 842 ...	Circular and Thread Milling	7 / 43
50 843 ...	Circular and Thread Milling	7 / 40
50 844 ...	Circular and Thread Milling	7 / 41
50 846 ...	Circular and Thread Milling	7 / 56
50 847 ...	Circular and Thread Milling	7 / 56
50 848 ...	Circular and Thread Milling	7 / 49
50 849 ...	Circular and Thread Milling	7 / 51
50 851 ...	Circular and Thread Milling	7 / 33
50 852 ...	Circular and Thread Milling	7 / 32
50 853 ...	Circular and Thread Milling	7 / 31
50 855 ...	Circular and Thread Milling	7 / 34
50 857 ...	Circular and Thread Milling	7 / 33
50 858 ...	Circular and Thread Milling	7 / 35
50 859 ...	Circular and Thread Milling	7 / 34
50 860 ...	Circular and Thread Milling	7 / 48
50 861 ...	Circular and Thread Milling	7 / 48
50 863 ...	Circular and Thread Milling	7 / 42
50 864 ...	Circular and Thread Milling	7 / 42
50 867 ...	Circular and Thread Milling	7 / 48
50 868 ...	Circular and Thread Milling	7 / 48
50 870 ...	Circular and Thread Milling	7 / 50
50 871 ...	Circular and Thread Milling	7 / 50
50 872 ...	Circular and Thread Milling	7 / 14
50 874 ...	Circular and Thread Milling	7 / 17
50 875 ...	Circular and Thread Milling	7 / 8
50 876 ...	Circular and Thread Milling	7 / 9
50 879 ...	Circular and Thread Milling	7 / 7
50 880 ...	Circular and Thread Milling	7 / 6
50 881 ...	Circular and Thread Milling	7 / 12
50 882 ...	Circular and Thread Milling	7 / 11
50 883 ...	Circular and Thread Milling	7 / 13
50 884 ...	Circular and Thread Milling	7 / 10
50 885 ...	Circular and Thread Milling	7 / 44
50 886 ...	Circular and Thread Milling	7 / 15
50 887 ...	Circular and Thread Milling	7 / 44
50 888 ...	Circular and Thread Milling	7 / 45
50 889 ...	Circular and Thread Milling	7 / 46
50 890 ...	Circular and Thread Milling	7 / 37
50 891 ...	Circular and Thread Milling	7 / 37
50 892 ...	Circular and Thread Milling	7 / 38
50 894 ...	Circular and Thread Milling	7 / 45
50 895 ...	Circular and Thread Milling	7 / 38
50 896 ...	Circular and Thread Milling	7 / 39
50 897 ...	Circular and Thread Milling	7 / 39
50 900 ...	Solid Carbide milling cutters	14 / 124
50 901 ...	Solid Carbide milling cutters	14 / 203
50 902 ...	Solid Carbide milling cutters	14 / 205
50 903 ...	Solid Carbide milling cutters	14 / 183
50 906 ...	Solid Carbide milling cutters	14 / 199
50 907 ...	Solid Carbide milling cutters	14 / 169
50 908 ...	Solid Carbide milling cutters	14 / 170
50 911 ...	Solid Carbide milling cutters	14 / 208
50 912 ...	Solid Carbide milling cutters	14 / 187
50 921 ...	Solid Carbide milling cutters	14 / 7
50 922 ...	Solid Carbide milling cutters	14 / 7
50 923 ...	Solid Carbide milling cutters	14 / 7
50 924 ...	Solid Carbide milling cutters	14 / 7
50 925 ...	Solid Carbide milling cutters	14 / 7
50 926 ...	Solid Carbide milling cutters	14 / 7
50 927 ...	Solid Carbide milling cutters	14 / 7
50 928 ...	Solid Carbide milling cutters	14 / 7
50 929 ...	Solid Carbide milling cutters	14 / 7
50 930 ...	Solid Carbide milling cutters	14 / 7
50 931 ...	Solid Carbide milling cutters	14 / 7
50 932 ...	Solid Carbide milling cutters	14 / 234
50 936 ...	Solid Carbide milling cutters	14 / 236
50 937 ...	Solid Carbide milling cutters	14 / 235
50 938 ...	Solid Carbide milling cutters	14 / 237
50 940 ...	Solid Carbide milling cutters	14 / 221
50 941 ...	Solid Carbide milling cutters	14 / 221
50 942 ...	Solid Carbide milling cutters	14 / 221
50 943 ...	Solid Carbide milling cutters	14 / 221
50 944 ...	Solid Carbide milling cutters	14 / 221
50 945 ...	Solid Carbide milling cutters	14 / 221
50 946 ...	Solid Carbide milling cutters	14 / 239
50 947 ...	Solid Carbide milling cutters	14 / 241
50 948 ...	Solid Carbide milling cutters	14 / 240
50 951 ...	Solid Carbide milling cutters	14 / 70
50 952 ...	Solid Carbide milling cutters	14 / 71
50 953 ...	Solid Carbide milling cutters	14 / 79
50 954 ...	Solid Carbide milling cutters	14 / 75
50 955 ...	Solid Carbide milling cutters	14 / 72
50 959 ...	Solid Carbide milling cutters	14 / 78

Article no.	Designation	Page(s)
50 960 ...	Solid Carbide milling cutters	14 / 126
50 961 ...	Solid Carbide milling cutters	14 / 81
50 962 ...	Solid Carbide milling cutters	14 / 80
50 964 ...	Solid Carbide milling cutters	14 / 74
50 965 ...	Solid Carbide milling cutters	14 / 73
50 968 ...	Solid Carbide milling cutters	14 / 76
50 981 ...	Solid Carbide milling cutters	14 / 232
50 982 ...	Solid Carbide milling cutters	14 / 232
50 983 ...	Solid Carbide milling cutters	14 / 232
50 984 ...	Solid Carbide milling cutters	14 / 232
50 985 ...	Solid Carbide milling cutters	14 / 233
50 986 ...	Solid Carbide milling cutters	14 / 233
50 987 ...	Solid Carbide milling cutters	14 / 233
50 988 ...	Solid Carbide milling cutters	14 / 233
51 000 ...	Milling tools with indexable inserts	15 / 31
51 001 ...	Milling tools with indexable inserts	15 / 30
51 002 ...	Milling tools with indexable inserts	15 / 22
51 003 ...	Milling tools with indexable inserts	15 / 22
51 004 ...	Milling tools with indexable inserts	15 / 27
51 005 ...	Milling tools with indexable inserts	15 / 27
51 006 ...	Milling tools with indexable inserts	15 / 39
51 008 ...	Milling tools with indexable inserts	15 / 40
51 010 ...	Milling tools with indexable inserts	15 / 39
51 011 ...	Milling tools with indexable inserts	15 / 76
51 012 ...	Milling tools with indexable inserts	15 / 23
51 013 ...	Milling tools with indexable inserts	15 / 24
51 014 ...	Milling tools with indexable inserts	15 / 32
51 015 ...	Milling tools with indexable inserts	15 / 41
51 016 ...	Milling tools with indexable inserts	15 / 101
51 017 ...	Milling tools with indexable inserts	15 / 102
51 018 ...	Milling tools with indexable inserts	15 / 102
51 019 ...	Milling tools with indexable inserts	15 / 99
51 022 ...	Milling tools with indexable inserts	15 / 102
51 024 ...	Milling tools with indexable inserts	15 / 47
51 027 ...	Milling tools with indexable inserts	15 / 31
51 028 ...	Milling tools with indexable inserts	15 / 39
51 029 ...	Milling tools with indexable inserts	15 / 76
51 030 ...	Milling tools with indexable inserts	15 / 76
51 033 ...	Milling tools with indexable inserts	15 / 59
51 034 ...	Milling tools with indexable inserts	15 / 64
51 035 ...	Milling tools with indexable inserts	15 / 69
51 036 ...	Milling tools with indexable inserts	15 / 59
51 037 ...	Milling tools with indexable inserts	15 / 64
51 038 ...	Milling tools with indexable inserts	15 / 70
51 039 ...	Milling tools with indexable inserts	15 / 65
51 040 ...	Milling tools with indexable inserts	15 / 69
51 042 ...	Milling tools with indexable inserts	15 / 96
51 043 ...	Milling tools with indexable inserts	15 / 96
51 045 ...	Milling tools with indexable inserts	15 / 47
51 046 ...	Milling tools with indexable inserts	15 / 47
51 048 ...	Milling tools with indexable inserts	15 / 109
51 049 ...	Milling tools with indexable inserts	15 / 111
51 050 ...	Milling tools with indexable inserts	15 / 112
51 051 ...	Milling tools with indexable inserts	15 / 111
51 052 ...	Milling tools with indexable inserts	15 / 111
51 053 ...	Milling tools with indexable inserts	15 / 112
51 054 ...	Milling tools with indexable inserts	15 / 111
51 055 ...	Milling tools with indexable inserts	15 / 112
51 056 ...	Milling tools with indexable inserts	15 / 113
51 057 ...	Milling tools with indexable inserts	15 / 111
51 058 ...	Milling tools with indexable inserts	15 / 27
51 059 ...	Milling tools with indexable inserts	15 / 79
51 065 ...	Milling tools with indexable inserts	15 / 20
51 079 ...	Milling tools with indexable inserts	15 / 96
51 080 ...	Milling tools with indexable inserts	15 / 96
51 081 ...	Milling tools with indexable inserts	15 / 79
51 082 ...	Milling tools with indexable inserts	15 / 76
51 083 ...	Milling tools with indexable inserts	15 / 109
51 086 ...	Milling tools with indexable inserts	15 / 36
51 100 ...	Milling tools with indexable inserts	15 / 56
51 101 ...	Milling tools with indexable inserts	15 / 56
51 102 ...	Milling tools with indexable inserts	15 / 56
51 103 ...	Milling tools with indexable inserts	15 / 56
51 104 ...	Milling tools with indexable inserts	15 / 31
51 105 ...	Milling tools with indexable inserts	15 / 17
51 106 ...	Milling tools with indexable inserts	15 / 120
51 107 ...	Milling tools with indexable inserts	15 / 120
51 108 ...	Milling tools with indexable inserts	15 / 112
51 109 ...	Milling tools with indexable inserts	15 / 40
51 110 ...	Milling tools with indexable inserts	15 / 79
51 111 ...	Milling tools with indexable inserts	15 / 76
51 112 ...	Milling tools with indexable inserts	15 / 59
51 113 ...	Milling tools with indexable inserts	15 / 64
51 114 ...	Milling tools with indexable inserts	15 / 70
51 115 ...	Milling tools with indexable inserts	15 / 101
51 116 ...	Milling tools with indexable inserts	15 / 100
51 118 ...	Milling tools with indexable inserts	15 / 53
51 119 ...	Milling tools with indexable inserts	15 / 53
51 120 ...	Milling tools with indexable inserts	15 / 53
51 121 ...	Milling tools with indexable inserts	15 / 53
51 122 ...	Milling tools with indexable inserts	15 / 23
51 123 ...	Milling tools with indexable inserts	15 / 24
51 124 ...	Milling tools with indexable inserts	15 / 103
51 125 ...	Milling tools with indexable inserts	15 / 76
51 126 ...	Milling tools with indexable inserts	15 / 53
51 127 ...	Milling tools with indexable inserts	15 / 73
51 128 ...	Milling tools with indexable inserts	15 / 56
51 129 ...	Milling tools with indexable inserts	15 / 120
51 130 ...	Milling tools with indexable inserts	15 / 120
51 131 ...	Milling tools with indexable inserts	15 / 44
51 132 ...	Milling tools with indexable inserts	15 / 44
51 133 ...	Milling tools with indexable inserts	15 / 48
51 134 ...	Milling tools with indexable inserts	15 / 48
51 135 ...	Milling tools with indexable inserts	15 / 48
51 137 ...	Milling tools with indexable inserts	15 / 91
51 900 ...	Milling tools with indexable inserts	15 / 42
52 102 ...	Solid Carbide milling cutters	14 / 157
52 107 ...	Solid Carbide milling cutters	14 / 216
52 109 ...	Solid Carbide milling cutters	14 / 168
52 110 ...	Solid Carbide milling cutters	14 / 164
52 112 ...	Solid Carbide milling cutters	14 / 172
52 115 ...	Solid Carbide milling cutters	14 / 164
52 118 ...	Solid Carbide milling cutters	14 / 164
52 121 ...	Solid Carbide milling cutters	14 / 154
52 122 ...	Solid Carbide milling cutters	14 / 172
52 123 ...	Solid Carbide milling cutters	14 / 172
52 126 ...	Solid Carbide milling cutters	14 / 154
52 131 ...	Solid Carbide milling cutters	14 / 154
52 132 ...	Solid Carbide milling cutters	14 / 154
52 133 ...	Solid Carbide milling cutters	14 / 102
52 134 ...	Solid Carbide milling cutters	14 / 102
52 135 ...	Solid Carbide milling cutters	14 / 102
52 136 ...	Solid Carbide milling cutters	14 / 102
52 140 ...	Solid Carbide milling cutters	14 / 101
52 141 ...	Solid Carbide milling cutters	14 / 101
52 150 ...	Solid Carbide milling cutters	14 / 220
52 151 ...	Solid Carbide milling cutters	14 / 220
52 152 ...	Solid Carbide milling cutters	14 / 220
52 153 ...	Solid Carbide milling cutters	14 / 220
52 154 ...	Solid Carbide milling cutters	14 / 220
52 155 ...	Solid Carbide milling cutters	14 / 220
52 158 ...	Solid Carbide milling cutters	14 / 222
52 159 ...	Solid Carbide milling cutters	14 / 222
52 168 ...	Solid Carbide milling cutters	14 / 242
52 195 ...	Solid Carbide milling cutters	14 / 219
52 223 ...	Solid Carbide milling cutters	14 / 83
52 224 ...	Solid Carbide milling cutters	14 / 83
52 225 ...	Solid Carbide milling cutters	14 / 82
52 226 ...	Solid Carbide milling cutters	14 / 83
52 227 ...	Solid Carbide milling cutters	14 / 83
52 228 ...	Solid Carbide milling cutters	14 / 85
52 229 ...	Solid Carbide milling cutters	14 / 84
52 230 ...	Solid Carbide milling cutters	14 / 87
52 249 ...	Solid Carbide milling cutters	14 / 223
52 250 ...	Solid Carbide milling cutters	14 / 188
52 251 ...	Solid Carbide milling cutters	14 / 188
52 254 ...	Solid Carbide milling cutters	14 / 190
52 255 ...	Solid Carbide milling cutters	14 / 190
52 256 ...	Solid Carbide milling cutters	14 / 106
52 257 ...	Solid Carbide milling cutters	14 / 106
52 258 ...	Solid Carbide milling cutters	14 / 106
52 259 ...	Solid Carbide milling cutters	14 / 106
52 291 ...	Solid Carbide milling cutters	14 / 224
52 300 ...	Solid Carbide milling cutters	14 / 174
52 301 ...	Solid Carbide milling cutters	14 / 174
52 302 ...	Solid Carbide milling cutters	14 / 104
52 303 ...	Solid Carbide milling cutters	14 / 105
52 304 ...	Solid Carbide milling cutters	14 / 112
52 305 ...	Solid Carbide milling cutters	14 / 111

Article no.	Designation	Page(s)
52 306 ...	Solid Carbide milling cutters	14 / 155
52 307 ...	Solid Carbide milling cutters	14 / 155
52 309 ...	Solid Carbide milling cutters	14 / 153
52 310 ...	Solid Carbide milling cutters	14 / 155
52 311 ...	Solid Carbide milling cutters	14 / 155
52 313 ...	Solid Carbide milling cutters	14 / 153
52 314 ...	Solid Carbide milling cutters	14 / 156
52 315 ...	Solid Carbide milling cutters	14 / 156
52 316 ...	Solid Carbide milling cutters	14 / 158
52 317 ...	Solid Carbide milling cutters	14 / 158
52 320 ...	Solid Carbide milling cutters	14 / 193
52 323 ...	Solid Carbide milling cutters	14 / 194
52 324 ...	Solid Carbide milling cutters	14 / 103
52 325 ...	Solid Carbide milling cutters	14 / 103
52 326 ...	Solid Carbide milling cutters	14 / 103
52 338 ...	Solid Carbide milling cutters	14 / 180
52 339 ...	Solid Carbide milling cutters	14 / 180
52 340 ...	Solid Carbide milling cutters	14 / 179
52 341 ...	Solid Carbide milling cutters	14 / 179
52 342 ...	Solid Carbide milling cutters	14 / 181
52 343 ...	Solid Carbide milling cutters	14 / 181
52 344 ...	Solid Carbide milling cutters	14 / 98
52 345 ...	Solid Carbide milling cutters	14 / 88
52 346 ...	Solid Carbide milling cutters	14 / 88
52 347 ...	Solid Carbide milling cutters	14 / 88
52 348 ...	Solid Carbide milling cutters	14 / 102
52 349 ...	Solid Carbide milling cutters	14 / 94
52 350 ...	Solid Carbide milling cutters	14 / 94
52 351 ...	Solid Carbide milling cutters	14 / 94
52 352 ...	Solid Carbide milling cutters	14 / 108
52 353 ...	Solid Carbide milling cutters	14 / 99
52 354 ...	Solid Carbide milling cutters	14 / 99
52 355 ...	Solid Carbide milling cutters	14 / 109
52 356 ...	Solid Carbide milling cutters	14 / 91
52 357 ...	Solid Carbide milling cutters	14 / 91
52 358 ...	Solid Carbide milling cutters	14 / 91
52 359 ...	Solid Carbide milling cutters	14 / 91
52 360 ...	Solid Carbide milling cutters	14 / 91
52 361 ...	Solid Carbide milling cutters	14 / 113
52 362 ...	Solid Carbide milling cutters	14 / 97
52 400 ...	Solid Carbide milling cutters	14 / 196
52 401 ...	Solid Carbide milling cutters	14 / 196
52 402 ...	Solid Carbide milling cutters	14 / 196
52 403 ...	Solid Carbide milling cutters	14 / 196
52 404 ...	Solid Carbide milling cutters	14 / 110
52 405 ...	Solid Carbide milling cutters	14 / 110
52 503 ...	Solid Carbide milling cutters	14 / 23
52 504 ...	Solid Carbide milling cutters	14 / 23
52 505 ...	Solid Carbide milling cutters	14 / 23
52 506 ...	Solid Carbide milling cutters	14 / 23
52 507 ...	Solid Carbide milling cutters	14 / 24
52 508 ...	Solid Carbide milling cutters	14 / 24
52 509 ...	Solid Carbide milling cutters	14 / 46
52 510 ...	Solid Carbide milling cutters	14 / 46
52 511 ...	Solid Carbide milling cutters	14 / 27
52 512 ...	Solid Carbide milling cutters	14 / 27
52 513 ...	Solid Carbide milling cutters	14 / 26
52 514 ...	Solid Carbide milling cutters	14 / 26
52 600 ...	Solid Carbide milling cutters	14 / 13
52 601 ...	Solid Carbide milling cutters	14 / 13
52 602 ...	Solid Carbide milling cutters	14 / 13
52 603 ...	Solid Carbide milling cutters	14 / 13
52 604 ...	Solid Carbide milling cutters	14 / 16
52 605 ...	Solid Carbide milling cutters	14 / 16
52 606 ...	Solid Carbide milling cutters	14 / 15
52 607 ...	Solid Carbide milling cutters	14 / 17
52 608 ...	Solid Carbide milling cutters	14 / 18
52 609 ...	Solid Carbide milling cutters	14 / 20
52 610 ...	Solid Carbide milling cutters	14 / 20
52 611 ...	Solid Carbide milling cutters	14 / 19
52 612 ...	Solid Carbide milling cutters	14 / 19
52 613 ...	Solid Carbide milling cutters	14 / 34
52 614 ...	Solid Carbide milling cutters	14 / 34
52 615 ...	Solid Carbide milling cutters	14 / 34
52 616 ...	Solid Carbide milling cutters	14 / 36
52 617 ...	Solid Carbide milling cutters	14 / 36
52 714 ...	Solid Carbide milling cutters	14 / 192
52 717 ...	Solid Carbide milling cutters	14 / 192
52 718 ...	Solid Carbide milling cutters	14 / 182
52 720 ...	Solid Carbide milling cutters	14 / 182
52 730 ...	Solid Carbide milling cutters	14 / 210
52 732 ...	Solid Carbide milling cutters	14 / 215
52 733 ...	Solid Carbide milling cutters	14 / 215
52 734 ...	Solid Carbide milling cutters	14 / 210
52 741 ...	Solid Carbide milling cutters	14 / 201
52 752 ...	Solid Carbide milling cutters	14 / 37
52 760 ...	Solid Carbide milling cutters	14 / 132
52 761 ...	Solid Carbide milling cutters	14 / 132
52 762 ...	Solid Carbide milling cutters	14 / 132
52 765 ...	Solid Carbide milling cutters	14 / 207
52 766 ...	Solid Carbide milling cutters	14 / 186
52 768 ...	Solid Carbide milling cutters	14 / 186
52 784 ...	Solid Carbide milling cutters	14 / 21
52 786 ...	Solid Carbide milling cutters	14 / 22
52 802 ...	Solid Carbide milling cutters	14 / 114
52 804 ...	Solid Carbide milling cutters	14 / 115
52 806 ...	Solid Carbide milling cutters	14 / 117
52 821 ...	Solid Carbide milling cutters	14 / 148
52 822 ...	Solid Carbide milling cutters	14 / 148
52 823 ...	Solid Carbide milling cutters	14 / 148
52 826 ...	Solid Carbide milling cutters	14 / 148
52 827 ...	Solid Carbide milling cutters	14 / 148
52 828 ...	Solid Carbide milling cutters	14 / 148
52 829 ...	Solid Carbide milling cutters	14 / 149
52 830 ...	Solid Carbide milling cutters	14 / 149
52 831 ...	Solid Carbide milling cutters	14 / 149
52 832 ...	Solid Carbide milling cutters	14 / 149
52 833 ...	Solid Carbide milling cutters	14 / 149
52 834 ...	Solid Carbide milling cutters	14 / 149
52 835 ...	Solid Carbide milling cutters	14 / 150
52 836 ...	Solid Carbide milling cutters	14 / 150
52 839 ...	Solid Carbide milling cutters	14 / 145
52 840 ...	Solid Carbide milling cutters	14 / 145
52 841 ...	Solid Carbide milling cutters	14 / 139
52 842 ...	Solid Carbide milling cutters	14 / 139
52 843 ...	Solid Carbide milling cutters	14 / 141
52 844 ...	Solid Carbide milling cutters	14 / 141
52 845 ...	Solid Carbide milling cutters	14 / 145
52 846 ...	Solid Carbide milling cutters	14 / 145
52 847 ...	Solid Carbide milling cutters	14 / 141
52 848 ...	Solid Carbide milling cutters	14 / 139
52 849 ...	Solid Carbide milling cutters	14 / 141
52 850 ...	Solid Carbide milling cutters	14 / 145
52 851 ...	Solid Carbide milling cutters	14 / 145
52 860 ...	Solid Carbide milling cutters	14 / 120
52 861 ...	Solid Carbide milling cutters	14 / 119
52 862 ...	Solid Carbide milling cutters	14 / 121
52 863 ...	Solid Carbide milling cutters	14 / 121
52 864 ...	Solid Carbide milling cutters	14 / 121
52 865 ...	Solid Carbide milling cutters	14 / 122
52 866 ...	Solid Carbide milling cutters	14 / 122
52 867 ...	Solid Carbide milling cutters	14 / 123
52 868 ...	Solid Carbide milling cutters	14 / 123
52 869 ...	Solid Carbide milling cutters	14 / 122
52 870 ...	Solid Carbide milling cutters	14 / 119
52 871 ...	Solid Carbide milling cutters	14 / 120
52 872 ...	Solid Carbide milling cutters	14 / 120
52 880 ...	Solid Carbide milling cutters	14 / 119
53 000 ...	Circular and Thread Milling	7 / 30
53 001 ...	Circular and Thread Milling	7 / 30
53 002 ...	Circular and Thread Milling	7 / 29
53 003 ...	Circular and Thread Milling	7 / 29
53 004 ...	Circular and Thread Milling	7 / 29
53 006 ...	Circular and Thread Milling	7 / 21
53 007 ...	Circular and Thread Milling	7 / 23
53 008 ...	Circular and Thread Milling	7 / 23
53 009 ...	Circular and Thread Milling	7 / 25
53 010 ...	Circular and Thread Milling	7 / 27
53 011 ...	Circular and Thread Milling	7 / 28
53 012 ...	Circular and Thread Milling	7 / 28
53 013 ...	Circular and Thread Milling	7 / 26
53 014 ...	Circular and Thread Milling	7 / 26
53 015 ...	Circular and Thread Milling	7 / 24
53 050 ...	Circular and Thread Milling	7 / 52
53 051 ...	Circular and Thread Milling	7 / 52
53 052 ...	Circular and Thread Milling	7 / 53
53 053 ...	Circular and Thread Milling	7 / 53
53 500 ...	Solid Carbide milling cutters	14 / 48
53 501 ...	Solid Carbide milling cutters	14 / 48

Article no.	Designation	Page(s)
53 502 ...	Solid Carbide milling cutters	14 / 48
53 503 ...	Solid Carbide milling cutters	14 / 48
53 504 ...	Solid Carbide milling cutters	14 / 49
53 505 ...	Solid Carbide milling cutters	14 / 49
53 506 ...	Solid Carbide milling cutters	14 / 49
53 507 ...	Solid Carbide milling cutters	14 / 49
53 508 ...	Solid Carbide milling cutters	14 / 69
53 509 ...	Solid Carbide milling cutters	14 / 69
53 510 ...	Solid Carbide milling cutters	14 / 69
53 511 ...	Solid Carbide milling cutters	14 / 69
53 512 ...	Solid Carbide milling cutters	14 / 60
53 513 ...	Solid Carbide milling cutters	14 / 60
53 514 ...	Solid Carbide milling cutters	14 / 60
53 515 ...	Solid Carbide milling cutters	14 / 60
53 516 ...	Solid Carbide milling cutters	14 / 60
53 517 ...	Solid Carbide milling cutters	14 / 50
53 518 ...	Solid Carbide milling cutters	14 / 50
53 519 ...	Solid Carbide milling cutters	14 / 50
53 520 ...	Solid Carbide milling cutters	14 / 50
53 521 ...	Solid Carbide milling cutters	14 / 51
53 522 ...	Solid Carbide milling cutters	14 / 51
53 523 ...	Solid Carbide milling cutters	14 / 51
53 524 ...	Solid Carbide milling cutters	14 / 51
53 525 ...	Solid Carbide milling cutters	14 / 55
53 526 ...	Solid Carbide milling cutters	14 / 56
53 527 ...	Solid Carbide milling cutters	14 / 55
53 528 ...	Solid Carbide milling cutters	14 / 55
53 529 ...	Solid Carbide milling cutters	14 / 56
53 530 ...	Solid Carbide milling cutters	14 / 55
53 531 ...	Solid Carbide milling cutters	14 / 56
53 532 ...	Solid Carbide milling cutters	14 / 52
53 533 ...	Solid Carbide milling cutters	14 / 52
53 534 ...	Solid Carbide milling cutters	14 / 52
53 535 ...	Solid Carbide milling cutters	14 / 52
53 536 ...	Solid Carbide milling cutters	14 / 52
53 537 ...	Solid Carbide milling cutters	14 / 53
53 538 ...	Solid Carbide milling cutters	14 / 53
53 539 ...	Solid Carbide milling cutters	14 / 53
53 540 ...	Solid Carbide milling cutters	14 / 53
53 541 ...	Solid Carbide milling cutters	14 / 53
53 542 ...	Solid Carbide milling cutters	14 / 54
53 543 ...	Solid Carbide milling cutters	14 / 54
53 544 ...	Solid Carbide milling cutters	14 / 57
53 545 ...	Solid Carbide milling cutters	14 / 57
53 546 ...	Solid Carbide milling cutters	14 / 59
53 547 ...	Solid Carbide milling cutters	14 / 57
53 548 ...	Solid Carbide milling cutters	14 / 59
53 549 ...	Solid Carbide milling cutters	14 / 57
53 550 ...	Solid Carbide milling cutters	14 / 61
53 551 ...	Solid Carbide milling cutters	14 / 61
53 552 ...	Solid Carbide milling cutters	14 / 62
53 553 ...	Solid Carbide milling cutters	14 / 62
53 554 ...	Solid Carbide milling cutters	14 / 62
53 555 ...	Solid Carbide milling cutters	14 / 68
53 556 ...	Solid Carbide milling cutters	14 / 68
53 557 ...	Solid Carbide milling cutters	14 / 68
53 558 ...	Solid Carbide milling cutters	14 / 68
53 559 ...	Solid Carbide milling cutters	14 / 68
53 560 ...	Solid Carbide milling cutters	14 / 63
53 561 ...	Solid Carbide milling cutters	14 / 63
53 562 ...	Solid Carbide milling cutters	14 / 63
53 563 ...	Solid Carbide milling cutters	14 / 63
53 564 ...	Solid Carbide milling cutters	14 / 63
53 565 ...	Solid Carbide milling cutters	14 / 64
53 566 ...	Solid Carbide milling cutters	14 / 64
53 567 ...	Solid Carbide milling cutters	14 / 64
53 568 ...	Solid Carbide milling cutters	14 / 64
53 569 ...	Solid Carbide milling cutters	14 / 64
53 570 ...	Solid Carbide milling cutters	14 / 65
53 571 ...	Solid Carbide milling cutters	14 / 65
53 572 ...	Solid Carbide milling cutters	14 / 65
53 573 ...	Solid Carbide milling cutters	14 / 65
53 574 ...	Solid Carbide milling cutters	14 / 66
53 575 ...	Solid Carbide milling cutters	14 / 66
53 576 ...	Solid Carbide milling cutters	14 / 67
53 577 ...	Solid Carbide milling cutters	14 / 67
53 585 ...	Solid Carbide milling cutters	14 / 38
53 586 ...	Solid Carbide milling cutters	14 / 40
53 587 ...	Solid Carbide milling cutters	14 / 38
53 589 ...	Solid Carbide milling cutters	14 / 39
53 590 ...	Solid Carbide milling cutters	14 / 43
53 591 ...	Solid Carbide milling cutters	14 / 43
53 592 ...	Solid Carbide milling cutters	14 / 41
53 593 ...	Solid Carbide milling cutters	14 / 42
53 594 ...	Solid Carbide milling cutters	14 / 44
53 595 ...	Solid Carbide milling cutters	14 / 44
53 596 ...	Solid Carbide milling cutters	14 / 47
53 600 ...	Solid Carbide milling cutters	14 / 31
53 601 ...	Solid Carbide milling cutters	14 / 31
53 602 ...	Solid Carbide milling cutters	14 / 33
53 603 ...	Solid Carbide milling cutters	14 / 28
53 604 ...	Solid Carbide milling cutters	14 / 28
53 605 ...	Solid Carbide milling cutters	14 / 30
53 606 ...	Solid Carbide milling cutters	14 / 30
54 001 ...	Solid Carbide milling cutters	14 / 160
54 002 ...	Solid Carbide milling cutters	14 / 160
54 003 ...	Solid Carbide milling cutters	14 / 160
54 004 ...	Solid Carbide milling cutters	14 / 160
54 005 ...	Solid Carbide milling cutters	14 / 160
54 006 ...	Solid Carbide milling cutters	14 / 160
54 007 ...	HSS Milling Cutters	13 / 16
54 008 ...	HSS Milling Cutters	13 / 16
54 009 ...	HSS Milling Cutters	13 / 18
54 010 ...	HSS Milling Cutters	13 / 20
54 011 ...	HSS Milling Cutters	13 / 13
54 012 ...	HSS Milling Cutters	13 / 18
54 013 ...	HSS Milling Cutters	13 / 20
54 014 ...	HSS Milling Cutters	13 / 10
54 016 ...	HSS Milling Cutters	13 / 11
54 017 ...	HSS Milling Cutters	13 / 13
54 018 ...	HSS Milling Cutters	13 / 14
54 019 ...	HSS Milling Cutters	13 / 14
54 020 ...	HSS Milling Cutters	13 / 8
54 021 ...	HSS Milling Cutters	13 / 11
54 022 ...	HSS Milling Cutters	13 / 24
54 023 ...	HSS Milling Cutters	13 / 24
54 024 ...	HSS Milling Cutters	13 / 24
54 025 ...	HSS Milling Cutters	13 / 8
54 026 ...	HSS Milling Cutters	13 / 21
54 027 ...	HSS Milling Cutters	13 / 21
54 028 ...	HSS Milling Cutters	13 / 17
54 029 ...	HSS Milling Cutters	13 / 17
54 030 ...	HSS Milling Cutters	13 / 22
54 031 ...	HSS Milling Cutters	13 / 23
54 032 ...	HSS Milling Cutters	13 / 23
54 033 ...	HSS Milling Cutters	13 / 23
54 034 ...	HSS Milling Cutters	13 / 19
54 035 ...	HSS Milling Cutters	13 / 37
54 036 ...	HSS Milling Cutters	13 / 37
54 037 ...	HSS Milling Cutters	13 / 38
54 038 ...	HSS Milling Cutters	13 / 26
54 039 ...	HSS Milling Cutters	13 / 26
54 040 ...	HSS Milling Cutters	13 / 27
54 041 ...	HSS Milling Cutters	13 / 25
54 042 ...	HSS Milling Cutters	13 / 10
54 050 ...	Solid Carbide milling cutters	14 / 159
54 051 ...	Solid Carbide milling cutters	14 / 159
54 052 ...	Solid Carbide milling cutters	14 / 159
54 053 ...	Solid Carbide milling cutters	14 / 161
54 054 ...	Solid Carbide milling cutters	14 / 161
54 055 ...	Solid Carbide milling cutters	14 / 195
54 056 ...	Solid Carbide milling cutters	14 / 195
54 057 ...	Solid Carbide milling cutters	14 / 197
54 058 ...	Solid Carbide milling cutters	14 / 197
54 060 ...	Solid Carbide milling cutters	14 / 159
54 061 ...	Solid Carbide milling cutters	14 / 159
54 062 ...	Solid Carbide milling cutters	14 / 159
54 063 ...	Solid Carbide milling cutters	14 / 161
54 064 ...	Solid Carbide milling cutters	14 / 161
54 590 ...	Solid Carbide milling cutters	14 / 127
54 591 ...	Solid Carbide milling cutters	14 / 128
54 592 ...	Solid Carbide milling cutters	14 / 128
54 593 ...	Solid Carbide milling cutters	14 / 128
54 594 ...	Solid Carbide milling cutters	14 / 130
54 595 ...	Solid Carbide milling cutters	14 / 131
54 596 ...	Solid Carbide milling cutters	14 / 130
54 597 ...	Solid Carbide milling cutters	14 / 131
54 610 ...	Solid Carbide milling cutters	14 / 134
54 611 ...	Solid Carbide milling cutters	14 / 133

Article no.	Designation	Page(s)
54 612 ...	Solid Carbide milling cutters	14 / 134
54 613 ...	Solid Carbide milling cutters	14 / 133
54 620 ...	Solid Carbide milling cutters	14 / 135
54 622 ...	Solid Carbide milling cutters	14 / 135
54 625 ...	Solid Carbide milling cutters	14 / 175
54 627 ...	Solid Carbide milling cutters	14 / 175
54 630 ...	Solid Carbide milling cutters	14 / 137
54 631 ...	Solid Carbide milling cutters	14 / 137
54 632 ...	Solid Carbide milling cutters	14 / 137
54 633 ...	Solid Carbide milling cutters	14 / 136
54 640 ...	Solid Carbide milling cutters	14 / 185
54 642 ...	Solid Carbide milling cutters	14 / 185
54 650 ...	Solid Carbide milling cutters	14 / 138
54 652 ...	Solid Carbide milling cutters	14 / 138
54 700 ...	Solid Carbide milling cutters	14 / 228
54 800 ...	Circular and Thread Milling	7 / 63
54 801 ...	Circular and Thread Milling	7 / 59
54 802 ...	Circular and Thread Milling	7 / 63
54 803 ...	Circular and Thread Milling	7 / 59
54 804 ...	Circular and Thread Milling	7 / 63
54 805 ...	Circular and Thread Milling	7 / 59
54 806 ...	Circular and Thread Milling	7 / 64
54 808 ...	Circular and Thread Milling	7 / 64
54 809 ...	Circular and Thread Milling	7 / 60
54 810 ...	Circular and Thread Milling	7 / 64
54 811 ...	Circular and Thread Milling	7 / 60
54 812 ...	Circular and Thread Milling	7 / 65
54 813 ...	Circular and Thread Milling	7 / 60
54 832 ...	Circular and Thread Milling	7 / 66
55 107 ...	Milling tools with indexable inserts	15 / 80
55 108 ...	Milling tools with indexable inserts	15 / 84
55 112 ...	Milling tools with indexable inserts	15 / 106
55 202 ...	Milling tools with indexable inserts	15 / 33
55 210 ...	Milling tools with indexable inserts	15 / 78
56 100 ...	Milling tools with indexable inserts	15 / 121
56 101 ...	Milling tools with indexable inserts	15 / 121
56 102 ...	Milling tools with indexable inserts	15 / 122
56 104 ...	Milling tools with indexable inserts	15 / 123
56 110 ...	Milling tools with indexable inserts	15 / 126
56 111 ...	Milling tools with indexable inserts	15 / 126
56 112 ...	Milling tools with indexable inserts	15 / 127
56 120 ...	Milling tools with indexable inserts	15 / 124
56 130 ...	Milling tools with indexable inserts	15 / 128
56 141 ...	Milling tools with indexable inserts	15 / 125
56 143 ...	Milling tools with indexable inserts	15 / 125
56 145 ...	Milling tools with indexable inserts	15 / 125
56 147 ...	Milling tools with indexable inserts	15 / 125
56 149 ...	Milling tools with indexable inserts	15 / 125
56 159 ...	Milling tools with indexable inserts	15 / 129
56 161 ...	Milling tools with indexable inserts	15 / 129
56 163 ...	Milling tools with indexable inserts	15 / 129
56 165 ...	Milling tools with indexable inserts	15 / 129
56 167 ...	Milling tools with indexable inserts	15 / 129
56 168 ...	Milling tools with indexable inserts	15 / 129
56 169 ...	Milling tools with indexable inserts	15 / 125
56 171 ...	Milling tools with indexable inserts	15 / 129
56 302 ...	Milling tools with indexable inserts	15 / 118
56 304 ...	Milling tools with indexable inserts	15 / 118
56 309 ...	Milling tools with indexable inserts	15 / 118
56 314 ...	Milling tools with indexable inserts	15 / 118
56 327 ...	Milling tools with indexable inserts	15 / 50
56 348 ...	Milling tools with indexable inserts	15 / 118
56 353 ...	Milling tools with indexable inserts	15 / 105
56 355 ...	Milling tools with indexable inserts	15 / 105
56 403 ...	Milling tools with indexable inserts	15 / 114
56 405 ...	Milling tools with indexable inserts	15 / 115
56 407 ...	Milling tools with indexable inserts	15 / 116
56 409 ...	Milling tools with indexable inserts	15 / 117
56 411 ...	Milling tools with indexable inserts	15 / 104
56 417 ...	Milling tools with indexable inserts	15 / 104
56 441 ...	Milling tools with indexable inserts	15 / 115
56 443 ...	Milling tools with indexable inserts	15 / 116
56 511 ...	Milling tools with indexable inserts	15 / 49
56 703 ...	Adapters	16 / 37
56 705 ...	Adapters	16 / 37
56 707 ...	Adapters	16 / 37
56 708 ...	Accessories	17 / 20
56 709 ...	Adapters	16 / 38
56 711 ...	Adapters	16 / 74
56 714 ...	Adapters	16 / 125
56 719 ...	Adapters	16 / 126
56 721 ...	Accessories	17 / 18
56 727 ...	Accessories	17 / 17
56 729 ...	Accessories	17 / 17
56 731 ...	Accessories	17 / 21
56 733 ...	Accessories	17 / 19
56 735 ...	Accessories	17 / 19
56 743 ...	Accessories	17 / 18
56 744 ...	Accessories	17 / 18
56 900 ...	Solid Carbide milling cutters	14 / 217
56 902 ...	Solid Carbide milling cutters	14 / 218
56 904 ...	Solid Carbide milling cutters	14 / 218
62 104 ...	Spindle Tooling	5 / 43
62 107 ...	Spindle Tooling	5 / 40
62 108 ...	Spindle Tooling	5 / 40
62 109 ...	Spindle Tooling	5 / 43
62 112 ...	Spindle Tooling	5 / 41
62 122 ...	Spindle Tooling	5 / 42
62 295 ...	Spindle Tooling	5 / 36
62 296 ...	Spindle Tooling	5 / 37
62 297 ...	Spindle Tooling	5 / 38
62 298 ...	Spindle Tooling	5 / 38
62 299 ...	Spindle Tooling	5 / 37
62 300 ...	Spindle Tooling	5 / 24
62 303 ...	Spindle Tooling	5 / 27
62 304 ...	Spindle Tooling	5 / 14
62 305 ...	Spindle Tooling	5 / 32
62 306 ...	Spindle Tooling	5 / 39
62 307 ...	Spindle Tooling	5 / 39
62 308 ...	Spindle Tooling	5 / 27
62 309 ...	Spindle Tooling	5 / 20
62 317 ...	Spindle Tooling	5 / 14
62 318 ...	Spindle Tooling	5 / 28
62 320 ...	Spindle Tooling	5 / 28
62 321 ...	Spindle Tooling	5 / 29
62 326 ...	Spindle Tooling	5 / 18
62 329 ...	Spindle Tooling	5 / 15
62 332 ...	Spindle Tooling	5 / 19
62 333 ...	Spindle Tooling	5 / 19
62 334 ...	Spindle Tooling	5 / 25
62 335 ...	Spindle Tooling	5 / 22
62 337 ...	Spindle Tooling	5 / 22
62 341 ...	Spindle Tooling	5 / 22
62 345 ...	Spindle Tooling	5 / 25
62 346 ...	Spindle Tooling	5 / 21
62 349 ...	Spindle Tooling	5 / 15
62 351 ...	Spindle Tooling	5 / 46
62 353 ...	Spindle Tooling	5 / 23
62 354 ...	Spindle Tooling	5 / 28
62 357 ...	Spindle Tooling	5 / 44
62 358 ...	Spindle Tooling	5 / 17
62 361 ...	Spindle Tooling	5 / 23
62 363 ...	Spindle Tooling	5 / 20
62 364 ...	Spindle Tooling	5 / 30
62 365 ...	Spindle Tooling	5 / 31
62 372 ...	Spindle Tooling	5 / 16
62 373 ...	Spindle Tooling	5 / 16
62 374 ...	Spindle Tooling	5 / 17
62 375 ...	Spindle Tooling	5 / 21
62 376 ...	Spindle Tooling	5 / 17
62 377 ...	Spindle Tooling	5 / 21
62 378 ...	Spindle Tooling	5 / 17
62 379 ...	Spindle Tooling	5 / 17
62 380 ...	Spindle Tooling	5 / 34
62 381 ...	Spindle Tooling	5 / 35
62 382 ...	Spindle Tooling	5 / 12
62 383 ...	Spindle Tooling	5 / 13
62 384 ...	Spindle Tooling	5 / 13
62 385 ...	Spindle Tooling	5 / 13
62 386 ...	Spindle Tooling	5 / 12
62 404 ...	Spindle Tooling	5 / 23
62 438 ...	Spindle Tooling	5 / 32
62 439 ...	Spindle Tooling	5 / 33
62 600 ...	Spindle Tooling	5 / 9
62 601 ...	Spindle Tooling	5 / 10
62 602 ...	Spindle Tooling	5 / 11
62 800 ...	Spindle Tooling	5 / 6
62 820 ...	Spindle Tooling	5 / 5
62 840 ...	Spindle Tooling	5 / 5

Article no.	Designation	Page(s)
62 850 ...	Spindle Tooling	5 / 7
62 860 ...	Spindle Tooling	5 / 7
62 861 ...	Spindle Tooling	5 / 7
62 862 ...	Spindle Tooling	5 / 8
62 863 ...	Spindle Tooling	5 / 7
65 170 ...	Adapters	16 / 201
70 002 ...	Turning Tools	9 / 36
70 100 ...	Turning Tools	9 / 11
70 101 ...	Turning Tools	9 / 8
70 102 ...	Turning Tools	9 / 13
70 103 ...	Turning Tools	9 / 13
70 114 ...	Turning Tools	9 / 34
70 117 ...	Turning Tools	9 / 13
70 118 ...	Turning Tools	9 / 25
70 119 ...	Turning Tools	9 / 13
70 129 ...	Turning Tools	9 / 36
70 130 ...	Turning Tools	9 / 13
70 131 ...	Turning Tools	9 / 49
70 132 ...	Turning Tools	9 / 9
70 133 ...	Turning Tools	9 / 23
70 134 ...	Turning Tools	9 / 43
70 139 ...	Turning Tools	9 / 53
70 148 ...	Turning Tools	9 / 44
70 152 ...	Turning Tools	9 / 44
70 155 ...	Turning Tools	9 / 43
70 156 ...	Turning Tools	9 / 24
70 158 ...	Turning Tools	9 / 26
70 167 ...	Turning Tools	9 / 49
70 169 ...	Turning Tools	9 / 54
70 178 ...	Turning Tools	9 / 54
70 179 ...	Turning Tools	9 / 54
70 185 ...	Turning Tools	9 / 61
70 186 ...	Turning Tools	9 / 81
70 187 ...	Turning Tools	9 / 115
70 188 ...	Turning Tools	9 / 99
70 189 ...	Turning Tools	9 / 123
70 191 ...	Turning Tools	9 / 62
70 192 ...	Turning Tools	9 / 82
70 193 ...	Turning Tools	9 / 128
70 225 ...	Turning Tools	9 / 34
70 240 ...	Turning Tools	9 / 32
70 245 ...	Turning Tools	9 / 62
70 246 ...	Turning Tools	9 / 82
70 247 ...	Turning Tools	9 / 128
70 248 ...	Turning Tools	9 / 61
70 249 ...	Turning Tools	9 / 60
70 251 ...	Turning Tools	9 / 59
70 252 ...	Reaming and Countersinking	4 / 41
70 252 ...	Turning Tools	9 / 60
70 253 ...	Turning Tools	9 / 61
70 254 ...	Reaming and Countersinking	4 / 41
70 254 ...	Turning Tools	9 / 61
70 255 ...	Turning Tools	9 / 61
70 257 ...	Turning Tools	9 / 81
70 258 ...	Turning Tools	9 / 81
70 259 ...	Turning Tools	9 / 81
70 260 ...	Turning Tools	9 / 81
70 261 ...	Turning Tools	9 / 82
70 263 ...	Turning Tools	9 / 82
70 265 ...	Turning Tools	9 / 80
70 266 ...	Turning Tools	9 / 100
70 268 ...	Turning Tools	9 / 105
70 270 ...	Turning Tools	9 / 106
70 271 ...	Turning Tools	9 / 105
70 273 ...	Turning Tools	9 / 53
70 274 ...	Turning Tools	9 / 115
70 276 ...	Turning Tools	9 / 115
70 277 ...	Turning Tools	9 / 126
70 278 ...	Turning Tools	9 / 127
70 279 ...	Turning Tools	9 / 127
70 280 ...	Turning Tools	9 / 127
70 282 ...	Turning Tools	9 / 127
70 283 ...	Turning Tools	9 / 106
70 284 ...	Turning Tools	9 / 114
70 286 ...	EcoCut	10 / 8
70 287 ...	Turning Tools	9 / 141
70 288 ...	Turning Tools	9 / 126
70 289 ...	EcoCut	10 / 12
70 294 ...	Spindle Tooling	5 / 47
70 295 ...	Spindle Tooling	5 / 47
70 296 ...	Spindle Tooling	5 / 48
70 300 ...	Spindle Tooling	5 / 48
70 327 ...	Grooving Tools	11 / 75
70 330 ...	Grooving Tools	11 / 23
70 331 ...	Grooving Tools	11 / 22
70 332 ...	Grooving Tools	11 / 24
70 334 ...	Grooving Tools	11 / 25
70 335 ...	Grooving Tools	11 / 26
70 337 ...	Grooving Tools	11 / 71
70 338 ...	Grooving Tools	11 / 88
70 339 ...	Grooving Tools	11 / 89
70 340 ...	Grooving Tools	11 / 90
70 342 ...	Grooving Tools	11 / 9
70 343 ...	Grooving Tools	11 / 10
70 344 ...	Grooving Tools	11 / 12
70 346 ...	Grooving Tools	11 / 8
70 349 ...	Grooving Tools	11 / 11
70 350 ...	Grooving Tools	11 / 46
70 351 ...	Grooving Tools	11 / 32
70 352 ...	Grooving Tools	11 / 35
70 353 ...	Grooving Tools	11 / 52
70 354 ...	Grooving Tools	11 / 50
70 355 ...	Grooving Tools	11 / 81
70 356 ...	Grooving Tools	11 / 83
70 357 ...	Grooving Tools	11 / 79
70 358 ...	Grooving Tools	11 / 80
70 359 ...	Grooving Tools	11 / 82
70 360 ...	Grooving Tools	11 / 30
70 362 ...	Grooving Tools	11 / 33
70 363 ...	Grooving Tools	11 / 48
70 364 ...	Grooving Tools	11 / 49
70 386 ...	EcoCut	10 / 8
70 500 ...	Turning Tools	9 / 18
70 501 ...	Turning Tools	9 / 18
70 502 ...	Turning Tools	9 / 51
70 503 ...	Turning Tools	9 / 51
70 504 ...	Turning Tools	9 / 19
70 505 ...	Turning Tools	9 / 19
70 506 ...	Turning Tools	9 / 51
70 508 ...	Turning Tools	9 / 18
70 509 ...	Turning Tools	9 / 18
70 512 ...	Turning Tools	9 / 37
70 513 ...	Turning Tools	9 / 37
70 516 ...	Turning Tools	9 / 39
70 520 ...	Turning Tools	9 / 38
70 521 ...	Turning Tools	9 / 40
70 524 ...	Turning Tools	9 / 40
70 525 ...	Turning Tools	9 / 40
70 528 ...	Turning Tools	9 / 46
70 529 ...	Turning Tools	9 / 46
70 532 ...	Turning Tools	9 / 47
70 533 ...	Turning Tools	9 / 47
70 534 ...	Turning Tools	9 / 47
70 535 ...	Turning Tools	9 / 47
70 536 ...	Turning Tools	9 / 29
70 537 ...	Turning Tools	9 / 29
70 540 ...	Turning Tools	9 / 28
70 541 ...	Turning Tools	9 / 28
70 542 ...	Turning Tools	9 / 56
70 543 ...	Turning Tools	9 / 56
70 544 ...	Turning Tools	9 / 103
70 556 ...	Turning Tools	9 / 20
70 557 ...	Turning Tools	9 / 20
70 558 ...	Turning Tools	9 / 21
70 559 ...	Turning Tools	9 / 21
70 560 ...	Turning Tools	9 / 41
70 561 ...	Turning Tools	9 / 41
70 562 ...	Turning Tools	9 / 31
70 563 ...	Turning Tools	9 / 31
70 564 ...	Turning Tools	9 / 48
70 565 ...	Turning Tools	9 / 48
70 566 ...	Turning Tools	9 / 58
70 567 ...	Turning Tools	9 / 58
70 568 ...	Turning Tools	9 / 30
70 569 ...	Turning Tools	9 / 30
70 572 ...	Turning Tools	9 / 57
70 573 ...	Turning Tools	9 / 57
70 588 ...	Turning Tools	9 / 110
70 589 ...	Turning Tools	9 / 110

Article no.	Designation	Page(s)
70 590 ...	Turning Tools	9 / 46
70 591 ...	Turning Tools	9 / 46
70 624 ...	Turning Tools	9 / 111
70 625 ...	Turning Tools	9 / 111
70 640 ...	Turning Tools	9 / 73
70 641 ...	Turning Tools	9 / 73
70 648 ...	Turning Tools	9 / 72
70 649 ...	Turning Tools	9 / 72
70 652 ...	Turning Tools	9 / 71
70 653 ...	Turning Tools	9 / 71
70 656 ...	Turning Tools	9 / 108
70 660 ...	Turning Tools	9 / 108
70 661 ...	Turning Tools	9 / 108
70 664 ...	Turning Tools	9 / 109
70 665 ...	Turning Tools	9 / 109
70 668 ...	Turning Tools	9 / 109
70 669 ...	Turning Tools	9 / 109
70 672 ...	Turning Tools	9 / 121
70 673 ...	Turning Tools	9 / 121
70 676 ...	Turning Tools	9 / 120
70 677 ...	Turning Tools	9 / 120
70 680 ...	Turning Tools	9 / 93
70 684 ...	Turning Tools	9 / 91
70 685 ...	Turning Tools	9 / 91
70 688 ...	Turning Tools	9 / 92
70 689 ...	Turning Tools	9 / 92
70 690 ...	Turning Tools	9 / 137
70 691 ...	Turning Tools	9 / 137
70 692 ...	Turning Tools	9 / 136
70 694 ...	Turning Tools	9 / 136
70 695 ...	Turning Tools	9 / 136
70 696 ...	Turning Tools	9 / 134
70 697 ...	Turning Tools	9 / 134
70 698 ...	Turning Tools	9 / 29
70 699 ...	Turning Tools	9 / 29
70 700 ...	Turning Tools	9 / 135
70 701 ...	Turning Tools	9 / 135
70 704 ...	Turning Tools	9 / 135
70 705 ...	Turning Tools	9 / 135
70 706 ...	Turning Tools	9 / 79
70 707 ...	Turning Tools	9 / 79
70 708 ...	Turning Tools	9 / 102
70 712 ...	Turning Tools	9 / 104
70 713 ...	Turning Tools	9 / 104
70 714 ...	Turning Tools	9 / 79
70 715 ...	Turning Tools	9 / 79
70 716 ...	Turning Tools	9 / 75
70 717 ...	Turning Tools	9 / 75
70 718 ...	Turning Tools	9 / 76
70 719 ...	Turning Tools	9 / 77
70 720 ...	Turning Tools	9 / 111
70 721 ...	Turning Tools	9 / 111
70 722 ...	Turning Tools	9 / 78
70 723 ...	Turning Tools	9 / 78
70 724 ...	Turning Tools	9 / 112
70 725 ...	Turning Tools	9 / 112
70 726 ...	Turning Tools	9 / 140
70 727 ...	Turning Tools	9 / 140
70 728 ...	Turning Tools	9 / 122
70 729 ...	Turning Tools	9 / 122
70 730 ...	Turning Tools	9 / 143
70 731 ...	Turning Tools	9 / 143
70 732 ...	Turning Tools	9 / 98
70 733 ...	Turning Tools	9 / 98
70 736 ...	Turning Tools	9 / 94
70 737 ...	Turning Tools	9 / 94
70 738 ...	Turning Tools	9 / 95
70 739 ...	Turning Tools	9 / 96
70 740 ...	Turning Tools	9 / 96
70 741 ...	Turning Tools	9 / 96
70 742 ...	Turning Tools	9 / 143
70 743 ...	Turning Tools	9 / 143
70 744 ...	Turning Tools	9 / 138
70 745 ...	Turning Tools	9 / 138
70 746 ...	Turning Tools	9 / 139
70 747 ...	Turning Tools	9 / 139
70 748 ...	Turning Tools	9 / 139
70 749 ...	Turning Tools	9 / 139
70 750 ...	Turning Tools	9 / 97
70 751 ...	Turning Tools	9 / 97
70 752 ...	Turning Tools	9 / 74
70 756 ...	Turning Tools	9 / 73
70 757 ...	Turning Tools	9 / 73
70 760 ...	Turning Tools	9 / 72
70 761 ...	Turning Tools	9 / 72
70 768 ...	Turning Tools	9 / 120
70 769 ...	Turning Tools	9 / 120
70 782 ...	Turning Tools	9 / 121
70 784 ...	Turning Tools	9 / 93
70 788 ...	Turning Tools	9 / 92
70 789 ...	Turning Tools	9 / 92
70 792 ...	Turning Tools	9 / 78
70 793 ...	Turning Tools	9 / 78
70 794 ...	Turning Tools	9 / 125
70 795 ...	Turning Tools	9 / 125
70 796 ...	Turning Tools	9 / 124
70 797 ...	Turning Tools	9 / 124
70 798 ...	Turning Tools	9 / 32
70 799 ...	Turning Tools	9 / 32
70 800 ...	EcoCut	10 / 6
70 801 ...	EcoCut	10 / 7
70 804 ...	EcoCut	10 / 5
70 805 ...	EcoCut	10 / 5
70 820 ...	EcoCut	10 / 14
70 821 ...	EcoCut	10 / 14
70 823 ...	Grooving Tools	11 / 77
70 824 ...	Grooving Tools	11 / 77
70 825 ...	Grooving Tools	11 / 78
70 826 ...	Grooving Tools	11 / 78
70 827 ...	Grooving Tools	11 / 76
70 828 ...	Grooving Tools	11 / 76
70 829 ...	Grooving Tools	11 / 97
70 830 ...	Grooving Tools	11 / 98
70 831 ...	Grooving Tools	11 / 99
70 832 ...	Grooving Tools	11 / 29
70 833 ...	Grooving Tools	11 / 74
70 834 ...	Grooving Tools	11 / 57
70 835 ...	Grooving Tools	11 / 73
70 836 ...	Grooving Tools	11 / 28
70 837 ...	Grooving Tools	11 / 28
70 846 ...	Grooving Tools	11 / 21
70 847 ...	Grooving Tools	11 / 20
70 850 ...	Grooving Tools	11 / 93
70 851 ...	Grooving Tools	11 / 93
70 852 ...	Grooving Tools	11 / 94
70 853 ...	Grooving Tools	11 / 94
70 854 ...	Grooving Tools	11 / 95
70 855 ...	Grooving Tools	11 / 95
70 856 ...	Grooving Tools	11 / 87
70 857 ...	Grooving Tools	11 / 87
70 858 ...	Grooving Tools	11 / 44
70 859 ...	Grooving Tools	11 / 44
70 860 ...	Grooving Tools	11 / 96
70 861 ...	Grooving Tools	11 / 96
70 862 ...	Grooving Tools	11 / 42
70 863 ...	Grooving Tools	11 / 42
70 865 ...	Grooving Tools	11 / 39
70 866 ...	Grooving Tools	11 / 39
70 867 ...	Grooving Tools	11 / 53
70 868 ...	Grooving Tools	11 / 53
70 870 ...	Grooving Tools	11 / 38
70 871 ...	Grooving Tools	11 / 38
70 872 ...	Grooving Tools	11 / 84
70 873 ...	Grooving Tools	11 / 91
70 874 ...	Grooving Tools	11 / 92
70 875 ...	Grooving Tools	11 / 27
70 876 ...	Grooving Tools	11 / 27
70 877 ...	Grooving Tools	11 / 18
70 879 ...	Grooving Tools	11 / 17
70 880 ...	Grooving Tools	11 / 41
70 881 ...	Grooving Tools	11 / 41
70 882 ...	Grooving Tools	11 / 85
70 883 ...	Grooving Tools	11 / 85
70 884 ...	Grooving Tools	11 / 15
70 885 ...	Grooving Tools	11 / 40
70 886 ...	Grooving Tools	11 / 40
70 887 ...	Grooving Tools	11 / 86
70 888 ...	Grooving Tools	11 / 43
70 889 ...	Grooving Tools	11 / 43

Article no.	Designation	Page(s)
70 890 ...	Grooving Tools	11 / 55
70 891 ...	Grooving Tools	11 / 55
70 892 ...	Grooving Tools	11 / 45
70 893 ...	Grooving Tools	11 / 45
70 894 ...	Grooving Tools	11 / 56
70 895 ...	Grooving Tools	11 / 56
70 896 ...	Grooving Tools	11 / 13
70 897 ...	Grooving Tools	11 / 13
70 903 ...	Grooving Tools	11 / 60
70 904 ...	Grooving Tools	11 / 60
71 000 ...	Turning Tools	9 / 65
71 001 ...	Turning Tools	9 / 65
71 002 ...	Turning Tools	9 / 65
71 003 ...	Turning Tools	9 / 14
71 005 ...	Turning Tools	9 / 14
71 007 ...	Turning Tools	9 / 85
71 008 ...	Turning Tools	9 / 85
71 009 ...	Turning Tools	9 / 85
71 012 ...	Turning Tools	9 / 85
71 017 ...	Turning Tools	9 / 27
71 027 ...	Turning Tools	9 / 117
71 028 ...	Turning Tools	9 / 116
71 029 ...	Turning Tools	9 / 116
71 034 ...	Turning Tools	9 / 117
71 035 ...	Turning Tools	9 / 129
71 036 ...	Turning Tools	9 / 129
71 037 ...	Turning Tools	9 / 142
71 062 ...	Turning Tools	9 / 132
71 063 ...	Turning Tools	9 / 132
71 064 ...	Turning Tools	9 / 132
71 108 ...	Turning Tools	9 / 45
71 120 ...	Turning Tools	9 / 68
71 121 ...	Turning Tools	9 / 66
71 123 ...	Turning Tools	9 / 66
71 124 ...	Turning Tools	9 / 68
71 125 ...	Turning Tools	9 / 68
71 126 ...	Turning Tools	9 / 69
71 130 ...	Turning Tools	9 / 86
71 131 ...	Turning Tools	9 / 83
71 134 ...	Turning Tools	9 / 85
71 135 ...	Turning Tools	9 / 88
71 136 ...	Turning Tools	9 / 88
71 138 ...	Turning Tools	9 / 89
71 139 ...	Turning Tools	9 / 89
71 140 ...	Turning Tools	9 / 117
71 144 ...	Turning Tools	9 / 90
71 145 ...	Turning Tools	9 / 90
71 154 ...	Turning Tools	9 / 142
71 160 ...	Turning Tools	9 / 130
71 161 ...	Turning Tools	9 / 67
71 162 ...	Turning Tools	9 / 67
71 163 ...	Turning Tools	9 / 86
71 164 ...	Turning Tools	9 / 116
71 165 ...	Turning Tools	9 / 129
71 200 ...	Thread turning	8 / 29
71 202 ...	Thread turning	8 / 29
71 203 ...	Thread turning	8 / 30
71 204 ...	Thread turning	8 / 30
71 206 ...	Thread turning	8 / 27
71 208 ...	Thread turning	8 / 27
71 210 ...	Thread turning	8 / 28
71 212 ...	Thread turning	8 / 28
71 220 ...	Thread turning	8 / 4
71 221 ...	Thread turning	8 / 8
71 222 ...	Thread turning	8 / 5
71 224 ...	Thread turning	8 / 6
71 226 ...	Thread turning	8 / 7
71 228 ...	Thread turning	8 / 11
71 229 ...	Thread turning	8 / 12
71 230 ...	Thread turning	8 / 13
71 231 ...	Thread turning	8 / 14
71 232 ...	Thread turning	8 / 21
71 234 ...	Thread turning	8 / 21
71 236 ...	Thread turning	8 / 22
71 238 ...	Thread turning	8 / 22
71 240 ...	Thread turning	8 / 25
71 242 ...	Thread turning	8 / 25
71 244 ...	Thread turning	8 / 26
71 246 ...	Thread turning	8 / 26
71 248 ...	Thread turning	8 / 23
71 250 ...	Thread turning	8 / 23
71 252 ...	Thread turning	8 / 24
71 254 ...	Thread turning	8 / 24
71 256 ...	Thread turning	8 / 19
71 258 ...	Thread turning	8 / 19
71 260 ...	Thread turning	8 / 20
71 262 ...	Thread turning	8 / 20
71 264 ...	Thread turning	8 / 15
71 266 ...	Thread turning	8 / 16
71 268 ...	Thread turning	8 / 17
71 270 ...	Thread turning	8 / 18
71 271 ...	Thread turning	8 / 34
71 272 ...	Thread turning	8 / 35
71 273 ...	Thread turning	8 / 36
71 274 ...	Thread turning	8 / 35
71 275 ...	Thread turning	8 / 37
71 276 ...	Thread turning	8 / 34
71 277 ...	Thread turning	8 / 36
71 278 ...	Thread turning	8 / 34
71 280 ...	Thread turning	8 / 31
71 281 ...	Thread turning	8 / 31
71 282 ...	Thread turning	8 / 33
71 283 ...	Thread turning	8 / 32
71 284 ...	Thread turning	8 / 10
71 285 ...	Thread turning	8 / 10
71 286 ...	Thread turning	8 / 9
71 287 ...	Thread turning	8 / 9
71 294 ...	Thread turning	8 / 38
71 295 ...	Thread turning	8 / 38
71 300 ...	Turning Tools	9 / 70
71 301 ...	Turning Tools	9 / 70
71 302 ...	Turning Tools	9 / 70
71 305 ...	Turning Tools	9 / 69
71 306 ...	Turning Tools	9 / 70
71 310 ...	Turning Tools	9 / 90
71 311 ...	Turning Tools	9 / 90
71 312 ...	Turning Tools	9 / 90
71 315 ...	Turning Tools	9 / 101
71 316 ...	Turning Tools	9 / 101
71 320 ...	Turning Tools	9 / 107
71 321 ...	Turning Tools	9 / 107
71 322 ...	Turning Tools	9 / 107
71 325 ...	Turning Tools	9 / 119
71 326 ...	Turning Tools	9 / 119
71 327 ...	Turning Tools	9 / 119
71 330 ...	Turning Tools	9 / 133
71 331 ...	Turning Tools	9 / 133
71 332 ...	Turning Tools	9 / 133
71 400 ...	Turning Tools	9 / 14
71 401 ...	Turning Tools	9 / 15
71 402 ...	Turning Tools	9 / 27
71 403 ...	Turning Tools	9 / 27
71 404 ...	Turning Tools	9 / 45
71 405 ...	Turning Tools	9 / 55
71 499 ...	Turning Tools	9 / 161
72 900 ...	Solid Carbide milling cutters	14 / 230
73 000 ...	Miniature turning tools	12 / 10
73 001 ...	Miniature turning tools	12 / 10
73 002 ...	Miniature turning tools	12 / 15
73 003 ...	Miniature turning tools	12 / 14
73 004 ...	Miniature turning tools	12 / 5
73 005 ...	Miniature turning tools	12 / 5
73 006 ...	Miniature turning tools	12 / 13
73 007 ...	Miniature turning tools	12 / 13
73 008 ...	Miniature turning tools	12 / 13
73 009 ...	Miniature turning tools	12 / 13
73 010 ...	Miniature turning tools	12 / 17
73 011 ...	Miniature turning tools	12 / 17
73 012 ...	Miniature turning tools	12 / 12
73 013 ...	Miniature turning tools	12 / 12
73 014 ...	Miniature turning tools	12 / 11
73 015 ...	Miniature turning tools	12 / 11
73 016 ...	Miniature turning tools	12 / 7
73 017 ...	Miniature turning tools	12 / 7
73 018 ...	Miniature turning tools	12 / 18
73 019 ...	Miniature turning tools	12 / 18
73 020 ...	Miniature turning tools	12 / 6
73 021 ...	Miniature turning tools	12 / 6
73 022 ...	Miniature turning tools	12 / 6

Article no.	Designation	Page(s)
73 023 ...	Miniature turning tools	12 / 6
73 024 ...	Miniature turning tools	12 / 8
73 025 ...	Miniature turning tools	12 / 8
73 026 ...	Miniature turning tools	12 / 9
73 027 ...	Miniature turning tools	12 / 9
73 050 ...	Miniature turning tools	12 / 23
73 051 ...	Miniature turning tools	12 / 23
73 052 ...	Miniature turning tools	12 / 23
73 053 ...	Miniature turning tools	12 / 23
73 054 ...	Miniature turning tools	12 / 28
73 055 ...	Miniature turning tools	12 / 28
73 056 ...	Miniature turning tools	12 / 28
73 057 ...	Miniature turning tools	12 / 28
73 058 ...	Miniature turning tools	12 / 25
73 059 ...	Miniature turning tools	12 / 25
73 060 ...	Miniature turning tools	12 / 26
73 061 ...	Miniature turning tools	12 / 26
73 080 ...	Miniature turning tools	12 / 31
73 081 ...	Miniature turning tools	12 / 34
73 083 ...	Miniature turning tools	12 / 35
73 084 ...	Miniature turning tools	12 / 35
73 085 ...	Miniature turning tools	12 / 29
73 086 ...	Miniature turning tools	12 / 35
73 088 ...	Miniature turning tools	12 / 33
73 089 ...	Miniature turning tools	12 / 32
73 100 ...	Miniature turning tools	12 / 19
73 101 ...	Miniature turning tools	12 / 19
73 102 ...	Miniature turning tools	12 / 21
73 103 ...	Miniature turning tools	12 / 21
73 104 ...	Miniature turning tools	12 / 22
73 105 ...	Miniature turning tools	12 / 22
73 202 ...	Miniature turning tools	12 / 16
73 203 ...	Miniature turning tools	12 / 16
73 206 ...	Miniature turning tools	12 / 21
73 207 ...	Miniature turning tools	12 / 21
73 208 ...	Miniature turning tools	12 / 20
73 209 ...	Miniature turning tools	12 / 20
73 210 ...	Miniature turning tools	12 / 22
73 211 ...	Miniature turning tools	12 / 22
73 252 ...	Miniature turning tools	12 / 24
73 253 ...	Miniature turning tools	12 / 24
73 256 ...	Miniature turning tools	12 / 28
73 257 ...	Miniature turning tools	12 / 28
73 260 ...	Miniature turning tools	12 / 26
73 261 ...	Miniature turning tools	12 / 26
73 262 ...	Miniature turning tools	12 / 27
73 263 ...	Miniature turning tools	12 / 27
73 300 ...	Grooving Tools	11 / 62
73 301 ...	Grooving Tools	11 / 61
73 302 ...	Grooving Tools	11 / 61
73 303 ...	Grooving Tools	11 / 64
73 304 ...	Grooving Tools	11 / 63
73 305 ...	Grooving Tools	11 / 65
73 306 ...	Grooving Tools	11 / 65
73 310 ...	Miniature turning tools	12 / 41
73 312 ...	Miniature turning tools	12 / 41
73 314 ...	Miniature turning tools	12 / 38
73 316 ...	Miniature turning tools	12 / 38
73 318 ...	Miniature turning tools	12 / 44
73 320 ...	Miniature turning tools	12 / 44
73 322 ...	Miniature turning tools	12 / 36
73 324 ...	Miniature turning tools	12 / 36
73 326 ...	Miniature turning tools	12 / 43
73 328 ...	Miniature turning tools	12 / 43
73 330 ...	Miniature turning tools	12 / 39
73 332 ...	Miniature turning tools	12 / 39
73 334 ...	Miniature turning tools	12 / 39
73 336 ...	Miniature turning tools	12 / 39
73 338 ...	Miniature turning tools	12 / 40
73 340 ...	Miniature turning tools	12 / 40
73 342 ...	Miniature turning tools	12 / 45
73 344 ...	Miniature turning tools	12 / 45
73 346 ...	Miniature turning tools	12 / 46
73 348 ...	Miniature turning tools	12 / 46
73 350 ...	Miniature turning tools	12 / 47
73 352 ...	Miniature turning tools	12 / 47
73 354 ...	Miniature turning tools	12 / 48
73 356 ...	Miniature turning tools	12 / 48
73 358 ...	Miniature turning tools	12 / 50
73 360 ...	Miniature turning tools	12 / 50
73 362 ...	Miniature turning tools	12 / 49
73 364 ...	Miniature turning tools	12 / 49
73 366 ...	Miniature turning tools	12 / 37
73 368 ...	Miniature turning tools	12 / 37
73 370 ...	Miniature turning tools	12 / 42
73 372 ...	Miniature turning tools	12 / 42
73 374 ...	Miniature turning tools	12 / 49
73 376 ...	Miniature turning tools	12 / 49
73 382 ...	Miniature turning tools	12 / 42
73 384 ...	Miniature turning tools	12 / 42
73 386 ...	Miniature turning tools	12 / 36
73 388 ...	Miniature turning tools	12 / 36
73 500 ...	Grooving Tools	11 / 66
73 501 ...	Grooving Tools	11 / 66
73 502 ...	Grooving Tools	11 / 67
73 503 ...	Grooving Tools	11 / 67
73 504 ...	Grooving Tools	11 / 68
73 505 ...	Grooving Tools	11 / 68
73 506 ...	Grooving Tools	11 / 69
73 507 ...	Grooving Tools	11 / 69
73 510 ...	Grooving Tools	11 / 70
73 511 ...	Grooving Tools	11 / 70
73 520 ...	Miniature turning tools	12 / 52
73 522 ...	Miniature turning tools	12 / 51
73 523 ...	Miniature turning tools	12 / 54
73 524 ...	Miniature turning tools	12 / 54
73 525 ...	Miniature turning tools	12 / 53
73 526 ...	Miniature turning tools	12 / 53
73 528 ...	Miniature turning tools	12 / 50
73 600 ...	Miniature turning tools	12 / 55
73 601 ...	Miniature turning tools	12 / 55
73 602 ...	Miniature turning tools	12 / 55
73 603 ...	Miniature turning tools	12 / 57
73 604 ...	Miniature turning tools	12 / 57
73 605 ...	Miniature turning tools	12 / 57
73 606 ...	Miniature turning tools	12 / 56
73 607 ...	Miniature turning tools	12 / 56
73 608 ...	Miniature turning tools	12 / 56
73 610 ...	Miniature turning tools	12 / 55
73 611 ...	Miniature turning tools	12 / 58
73 612 ...	Miniature turning tools	12 / 56
73 613 ...	Miniature turning tools	12 / 58
74 503 ...	Adapters	16 / 139
74 504 ...	Adapters	16 / 139
74 506 ...	Adapters	16 / 139
74 507 ...	Adapters	16 / 141
74 508 ...	Adapters	16 / 141
74 511 ...	Adapters	16 / 141
74 512 ...	Adapters	16 / 141
74 515 ...	Adapters	16 / 140
74 516 ...	Adapters	16 / 140
74 519 ...	Adapters	16 / 142
74 522 ...	Adapters	16 / 142
74 525 ...	Adapters	16 / 143
74 528 ...	Adapters	16 / 143
74 529 ...	Adapters	16 / 149
74 532 ...	Adapters	16 / 149
74 533 ...	Adapters	16 / 149
74 536 ...	Adapters	16 / 150
74 537 ...	Adapters	16 / 150
74 540 ...	Adapters	16 / 144
74 541 ...	Adapters	16 / 144
74 542 ...	Adapters	16 / 144
74 543 ...	Adapters	16 / 145
74 544 ...	Adapters	16 / 145
74 546 ...	Adapters	16 / 145
74 548 ...	Adapters	16 / 146
74 551 ...	Adapters	16 / 146
74 552 ...	Adapters	16 / 146
74 553 ...	Adapters	16 / 148
74 554 ...	Adapters	16 / 148
74 555 ...	Adapters	16 / 147
74 556 ...	Adapters	16 / 147
74 557 ...	Adapters	16 / 147
74 558 ...	Adapters	16 / 147
74 560 ...	Adapters	16 / 148
74 563 ...	Adapters	16 / 151
74 564 ...	Adapters	16 / 151
74 565 ...	Adapters	16 / 151

Article no.	Designation	Page(s)
74 566 ...	Adapters	16 / 151
74 567 ...	Adapters	16 / 152
74 568 ...	Adapters	16 / 152
74 570 ...	Adapters	16 / 155
74 571 ...	Adapters	16 / 155
74 572 ...	Adapters	16 / 155
74 573 ...	Adapters	16 / 155
74 575 ...	Adapters	16 / 156
74 576 ...	Adapters	16 / 155
74 577 ...	Adapters	16 / 156
74 580 ...	Adapters	16 / 153
74 581 ...	Adapters	16 / 153
74 582 ...	Adapters	16 / 153
74 583 ...	Adapters	16 / 153
74 584 ...	Adapters	16 / 154
74 585 ...	Adapters	16 / 154
74 590 ...	Adapters	16 / 152
74 591 ...	Adapters	16 / 152
74 600 ...	Adapters	16 / 140
75 003 ...	Turning Tools	9 / 13
75 004 ...	Turning Tools	9 / 26
75 005 ...	Turning Tools	9 / 36
75 006 ...	Turning Tools	9 / 44
75 008 ...	Turning Tools	9 / 54
75 009 ...	Turning Tools	9 / 49
75 010 ...	Turning Tools	9 / 12
75 011 ...	Turning Tools	9 / 13
75 012 ...	Turning Tools	9 / 13
75 013 ...	Turning Tools	9 / 25
75 014 ...	Turning Tools	9 / 25
75 015 ...	Turning Tools	9 / 25
75 016 ...	Turning Tools	9 / 36
75 017 ...	Turning Tools	9 / 36
75 018 ...	Turning Tools	9 / 36
75 019 ...	Turning Tools	9 / 44
75 020 ...	Turning Tools	9 / 44
75 021 ...	Turning Tools	9 / 44
75 022 ...	Turning Tools	9 / 49
75 023 ...	Turning Tools	9 / 49
75 024 ...	Turning Tools	9 / 54
75 025 ...	Turning Tools	9 / 54
75 026 ...	Turning Tools	9 / 54
75 210 ...	Turning Tools	9 / 61
75 211 ...	Turning Tools	9 / 61
75 213 ...	Turning Tools	9 / 81
75 214 ...	Turning Tools	9 / 81
75 216 ...	Turning Tools	9 / 106
75 217 ...	Turning Tools	9 / 115
75 218 ...	Turning Tools	9 / 115
75 219 ...	Turning Tools	9 / 127
75 220 ...	Turning Tools	9 / 127
76 000 ...	Turning Tools	9 / 49
76 001 ...	Turning Tools	9 / 49
76 101 ...	Turning Tools	9 / 8
76 102 ...	Turning Tools	9 / 22
76 103 ...	Turning Tools	9 / 9
76 110 ...	Turning Tools	9 / 9
76 114 ...	Turning Tools	9 / 11
76 115 ...	Turning Tools	9 / 12
76 116 ...	Turning Tools	9 / 34
76 119 ...	Turning Tools	9 / 11
76 128 ...	Turning Tools	9 / 35
76 129 ...	Turning Tools	9 / 35
76 130 ...	Turning Tools	9 / 36
76 131 ...	Turning Tools	9 / 49
76 132 ...	Turning Tools	9 / 8
76 133 ...	Turning Tools	9 / 12
76 134 ...	Turning Tools	9 / 22
76 135 ...	Turning Tools	9 / 10
76 136 ...	Turning Tools	9 / 23
76 137 ...	Turning Tools	9 / 33
76 138 ...	Turning Tools	9 / 42
76 139 ...	Turning Tools	9 / 53
76 140 ...	Turning Tools	9 / 33
76 142 ...	Turning Tools	9 / 43
76 146 ...	Turning Tools	9 / 42
76 149 ...	Turning Tools	9 / 42
76 152 ...	Turning Tools	9 / 43
76 153 ...	Turning Tools	9 / 23
76 154 ...	Turning Tools	9 / 43
76 155 ...	Turning Tools	9 / 43
76 156 ...	Turning Tools	9 / 49
76 157 ...	Turning Tools	9 / 52
76 165 ...	Turning Tools	9 / 24
76 166 ...	Turning Tools	9 / 25
76 171 ...	Turning Tools	9 / 52
76 177 ...	Turning Tools	9 / 52
76 182 ...	Turning Tools	9 / 105
76 194 ...	Turning Tools	9 / 60
76 195 ...	Turning Tools	9 / 81
76 196 ...	Turning Tools	9 / 10
76 197 ...	Turning Tools	9 / 24
76 198 ...	Turning Tools	9 / 53
76 206 ...	Turning Tools	9 / 113
76 208 ...	Turning Tools	9 / 113
76 212 ...	Turning Tools	9 / 123
76 225 ...	Turning Tools	9 / 34
76 228 ...	Turning Tools	9 / 123
76 232 ...	Turning Tools	9 / 123
76 240 ...	Turning Tools	9 / 32
76 242 ...	Turning Tools	9 / 32
76 245 ...	Turning Tools	9 / 80
76 246 ...	Turning Tools	9 / 80
76 247 ...	Turning Tools	9 / 59
76 248 ...	Turning Tools	9 / 60
76 249 ...	Turning Tools	9 / 60
76 250 ...	Turning Tools	9 / 60
76 251 ...	Turning Tools	9 / 59
76 252 ...	Reaming and Countersinking	4 / 41
76 252 ...	Turning Tools	9 / 60
76 253 ...	Turning Tools	9 / 60
76 254 ...	Turning Tools	9 / 82
76 255 ...	Turning Tools	9 / 128
76 256 ...	Turning Tools	9 / 80
76 257 ...	Turning Tools	9 / 80
76 258 ...	Turning Tools	9 / 81
76 259 ...	Turning Tools	9 / 80
76 260 ...	Turning Tools	9 / 105
76 261 ...	Turning Tools	9 / 105
76 262 ...	Turning Tools	9 / 99
76 263 ...	Turning Tools	9 / 24
76 264 ...	Turning Tools	9 / 99
76 265 ...	Turning Tools	9 / 80
76 266 ...	Turning Tools	9 / 114
76 267 ...	Turning Tools	9 / 105
76 268 ...	Turning Tools	9 / 105
76 269 ...	Turning Tools	9 / 105
76 270 ...	Turning Tools	9 / 115
76 272 ...	Turning Tools	9 / 114
76 273 ...	Turning Tools	9 / 53
76 274 ...	Turning Tools	9 / 115
76 275 ...	Turning Tools	9 / 114
76 276 ...	Turning Tools	9 / 126
76 277 ...	Turning Tools	9 / 126
76 278 ...	Turning Tools	9 / 127
76 279 ...	Turning Tools	9 / 126
76 284 ...	Turning Tools	9 / 114
76 285 ...	Turning Tools	9 / 126
76 288 ...	Turning Tools	9 / 126
76 290 ...	Turning Tools	9 / 9
76 291 ...	Turning Tools	9 / 23
76 292 ...	Turning Tools	9 / 126
76 294 ...	Turning Tools	9 / 49
76 295 ...	Turning Tools	9 / 53
80 306 ...	Adapters	16 / 204
80 309 ...	Adapters	16 / 204
80 310 ...	Adapters	16 / 204
80 312 ...	Adapters	16 / 205
80 641 ...	Accessories	17 / 13
80 661 ...	Adapters	16 / 216
80 662 ...	Adapters	16 / 216
80 663 ...	Adapters	16 / 216
80 664 ...	Adapters	16 / 216
80 665 ...	Adapters	16 / 216
80 696 ...	Accessories	17 / 9
80 720 ...	Accessories	17 / 34
80 722 ...	Accessories	17 / 34
81 402 ...	Adapters	16 / 23
81 403 ...	Adapters	16 / 24

Article no.	Designation	Page(s)
81 410 ...	Adapters	16 / 30
81 414 ...	Adapters	16 / 29
81 428 ...	Adapters	16 / 40
81 429 ...	Adapters	16 / 39
81 439 ...	Adapters	16 / 45
81 453 ...	Adapters	16 / 46
81 502 ...	Adapters	16 / 61
81 506 ...	Adapters	16 / 63
81 508 ...	Adapters	16 / 66
81 512 ...	Adapters	16 / 67
81 513 ...	Adapters	16 / 79
81 514 ...	Adapters	16 / 76
81 516 ...	Adapters	16 / 75
81 518 ...	Adapters	16 / 82
81 525 ...	Adapters	16 / 81
81 527 ...	Adapters	16 / 80
81 728 ...	Adapters	16 / 129
81 730 ...	Adapters	16 / 111
81 731 ...	Adapters	16 / 111
81 732 ...	Adapters	16 / 112
81 733 ...	Adapters	16 / 113
81 735 ...	Adapters	16 / 116
81 736 ...	Adapters	16 / 111
81 737 ...	Adapters	16 / 116
81 738 ...	Adapters	16 / 127
81 739 ...	Adapters	16 / 127
81 740 ...	Adapters	16 / 127
81 741 ...	Adapters	16 / 129
81 742 ...	Adapters	16 / 129
81 744 ...	Adapters	16 / 131
81 745 ...	Adapters	16 / 132
81 746 ...	Adapters	16 / 133
81 747 ...	Adapters	16 / 129
81 900 ...	Accessories	17 / 45
82 185 ...	Adapters	16 / 188
82 189 ...	Adapters	16 / 188
82 193 ...	Adapters	16 / 188
82 196 ...	Adapters	16 / 188
82 199 ...	Adapters	16 / 189
82 202 ...	Adapters	16 / 189
82 205 ...	Adapters	16 / 189
82 208 ...	Adapters	16 / 189
82 211 ...	Adapters	16 / 190
82 214 ...	Adapters	16 / 190
82 217 ...	Adapters	16 / 190
82 220 ...	Adapters	16 / 190
82 222 ...	Adapters	16 / 191
82 224 ...	Adapters	16 / 191
82 236 ...	Adapters	16 / 196
82 237 ...	Adapters	16 / 196
82 238 ...	Adapters	16 / 197
82 242 ...	Adapters	16 / 196
82 243 ...	Adapters	16 / 196
82 244 ...	Adapters	16 / 197
82 268 ...	Adapters	16 / 193
82 274 ...	Adapters	16 / 192
82 277 ...	Adapters	16 / 195
82 285 ...	Adapters	16 / 194
82 286 ...	Adapters	16 / 194
82 317 ...	Adapters	16 / 205
82 327 ...	Adapters	16 / 200
82 330 ...	Adapters	16 / 201
82 401 ...	Adapters	16 / 24
82 402 ...	Adapters	16 / 24
82 403 ...	Adapters	16 / 25
82 404 ...	Adapters	16 / 25
82 406 ...	Adapters	16 / 26
82 407 ...	Adapters	16 / 26
82 410 ...	Adapters	16 / 30
82 411 ...	Adapters	16 / 30
82 414 ...	Adapters	16 / 29
82 415 ...	Adapters	16 / 29
82 423 ...	Adapters	16 / 43
82 428 ...	Adapters	16 / 40
82 429 ...	Adapters	16 / 39
82 432 ...	Adapters	16 / 42
82 439 ...	Adapters	16 / 45
82 446 ...	Adapters	16 / 44
82 453 ...	Adapters	16 / 46
82 456 ...	Adapters	16 / 47
82 458 ...	Adapters	16 / 47
82 468 ...	Adapters	16 / 48
82 475 ...	Adapters	16 / 48
82 487 ...	Adapters	16 / 49
82 493 ...	Adapters	16 / 49
82 494 ...	Adapters	16 / 49
82 501 ...	Adapters	16 / 62
82 502 ...	Adapters	16 / 62
82 503 ...	Adapters	16 / 62
82 504 ...	Adapters	16 / 62
82 505 ...	Adapters	16 / 67
82 506 ...	Adapters	16 / 63
82 507 ...	Adapters	16 / 63
82 508 ...	Adapters	16 / 66
82 509 ...	Adapters	16 / 66
82 512 ...	Adapters	16 / 67
82 513 ...	Adapters	16 / 79
82 514 ...	Adapters	16 / 76
82 516 ...	Adapters	16 / 75
82 518 ...	Adapters	16 / 82
82 519 ...	Adapters	16 / 78
82 523 ...	Adapters	16 / 83
82 525 ...	Adapters	16 / 81
82 527 ...	Adapters	16 / 80
82 530 ...	Adapters	16 / 92
82 531 ...	Adapters	16 / 91
82 533 ...	Adapters	16 / 91
82 534 ...	Adapters	16 / 92
82 536 ...	Adapters	16 / 92
82 537 ...	Adapters	16 / 92
82 648 ...	Accessories	17 / 26
82 649 ...	Accessories	17 / 26
82 650 ...	Adapters	16 / 215
82 651 ...	Adapters	16 / 215
82 652 ...	Adapters	16 / 215
82 653 ...	Adapters	16 / 218
82 654 ...	Adapters	16 / 218
82 655 ...	Adapters	16 / 218
82 673 ...	Adapters	16 / 214
82 674 ...	Adapters	16 / 214
82 675 ...	Adapters	16 / 214
82 676 ...	Adapters	16 / 214
82 677 ...	Adapters	16 / 214
83 269 ...	Adapters	16 / 191
83 271 ...	Accessories	17 / 33
83 272 ...	Accessories	17 / 33
83 290 ...	Adapters	16 / 199
83 292 ...	Adapters	16 / 198
83 302 ...	Accessories	17 / 3
83 307 ...	Adapters	16 / 199
83 318 ...	Adapters	16 / 205
83 324 ...	Adapters	16 / 200
83 354 ...	Adapters	16 / 67
83 359 ...	Adapters	16 / 82
83 367 ...	Adapters	16 / 170
83 368 ...	Adapters	16 / 77
83 370 ...	Adapters	16 / 127
83 385 ...	Accessories	17 / 28
83 402 ...	Adapters	16 / 17
83 403 ...	Adapters	16 / 18
83 416 ...	Adapters	16 / 32
83 421 ...	Adapters	16 / 16
83 422 ...	Adapters	16 / 14
83 423 ...	Adapters	16 / 34
83 425 ...	Adapters	16 / 18
83 427 ...	Adapters	16 / 15
83 428 ...	Adapters	16 / 34
83 453 ...	Accessories	17 / 15
83 454 ...	Accessories	17 / 15
83 455 ...	Accessories	17 / 16
83 471 ...	Adapters	16 / 49
83 476 ...	Adapters	16 / 91
83 513 ...	Adapters	16 / 55
83 515 ...	Adapters	16 / 69
83 518 ...	Adapters	16 / 58
83 521 ...	Adapters	16 / 57
83 522 ...	Adapters	16 / 56
83 523 ...	Adapters	16 / 58
83 525 ...	Adapters	16 / 71

Article no.	Designation	Page(s)
83 526 ...	Adapters	16 / 54
83 527 ...	Adapters	16 / 86
83 528 ...	Adapters	16 / 71
83 532 ...	Adapters	16 / 91
83 535 ...	Adapters	16 / 48
83 538 ...	Adapters	16 / 48
83 608 ...	Accessories	17 / 7
83 609 ...	Accessories	17 / 32
83 610 ...	Adapters	16 / 221
83 611 ...	Accessories	17 / 32
83 612 ...	Adapters	16 / 219
83 614 ...	Adapters	16 / 222
83 616 ...	Adapters	16 / 220
83 618 ...	Adapters	16 / 223
83 622 ...	Adapters	16 / 223
83 624 ...	Adapters	16 / 222
83 629 ...	Adapters	16 / 206
83 636 ...	Accessories	17 / 3
83 641 ...	Accessories	17 / 7
83 642 ...	Accessories	17 / 4
83 644 ...	Accessories	17 / 4
83 646 ...	Accessories	17 / 8
83 648 ...	Accessories	17 / 8
83 651 ...	Adapters	16 / 218
83 652 ...	Adapters	16 / 218
83 653 ...	Adapters	16 / 218
83 660 ...	Adapters	16 / 217
83 665 ...	Adapters	16 / 212
83 667 ...	Adapters	16 / 212
83 668 ...	Adapters	16 / 212
83 675 ...	Adapters	16 / 217
83 689 ...	Adapters	16 / 215
83 690 ...	Adapters	16 / 207
83 691 ...	Adapters	16 / 207
83 692 ...	Adapters	16 / 207
83 693 ...	Adapters	16 / 207
83 694 ...	Adapters	16 / 207
83 706 ...	Adapters	16 / 97
83 710 ...	Adapters	16 / 122
83 712 ...	Adapters	16 / 122
83 715 ...	Accessories	17 / 34
83 722 ...	Adapters	16 / 98
83 724 ...	Adapters	16 / 120
83 726 ...	Adapters	16 / 100
83 727 ...	Adapters	16 / 99
83 729 ...	Adapters	16 / 101
83 758 ...	Adapters	16 / 138
83 760 ...	Adapters	16 / 138
84 000 ...	Accessories	17 / 24
84 001 ...	Accessories	17 / 23
84 002 ...	Accessories	17 / 24
84 003 ...	Accessories	17 / 25
84 004 ...	Accessories	17 / 23
84 005 ...	Accessories	17 / 23
84 006 ...	Accessories	17 / 25
84 007 ...	Accessories	17 / 23
84 008 ...	Accessories	17 / 24
84 009 ...	Accessories	17 / 25
84 010 ...	Accessories	17 / 23
84 011 ...	Accessories	17 / 24
84 012 ...	Accessories	17 / 25
84 100 ...	Adapters	16 / 161
84 102 ...	Adapters	16 / 162
84 104 ...	Adapters	16 / 159
84 105 ...	Adapters	16 / 159
84 106 ...	Adapters	16 / 159
84 108 ...	Adapters	16 / 158
84 110 ...	Adapters	16 / 168
84 112 ...	Adapters	16 / 157
84 114 ...	Adapters	16 / 164
84 115 ...	Adapters	16 / 165
84 116 ...	Adapters	16 / 173
84 117 ...	Adapters	16 / 173
84 122 ...	Adapters	16 / 169
84 124 ...	Adapters	16 / 170
84 126 ...	Adapters	16 / 171
84 128 ...	Adapters	16 / 163
84 130 ...	Adapters	16 / 182
84 131 ...	Adapters	16 / 183
84 132 ...	Adapters	16 / 180
84 134 ...	Adapters	16 / 172
84 135 ...	Adapters	16 / 187
84 136 ...	Adapters	16 / 173
84 140 ...	Adapters	16 / 166
84 142 ...	Adapters	16 / 167
84 150 ...	Adapters	16 / 174
84 151 ...	Adapters	16 / 174
84 152 ...	Adapters	16 / 174
84 153 ...	Adapters	16 / 174
84 154 ...	Adapters	16 / 175
84 155 ...	Adapters	16 / 175
84 156 ...	Adapters	16 / 175
84 157 ...	Adapters	16 / 175
84 158 ...	Adapters	16 / 176
84 170 ...	Adapters	16 / 177
84 171 ...	Adapters	16 / 177
84 172 ...	Adapters	16 / 177
84 173 ...	Adapters	16 / 177
84 174 ...	Adapters	16 / 178
84 175 ...	Adapters	16 / 178
84 190 ...	Adapters	16 / 179
84 191 ...	Adapters	16 / 179
84 196 ...	Adapters	16 / 179
84 197 ...	Adapters	16 / 179
84 200 ...	Adapters	16 / 123
84 201 ...	Adapters	16 / 35
84 202 ...	Adapters	16 / 72
84 203 ...	Adapters	16 / 123
84 204 ...	Adapters	16 / 35
84 205 ...	Adapters	16 / 72
84 206 ...	Adapters	16 / 124
84 207 ...	Adapters	16 / 36
84 208 ...	Adapters	16 / 73
84 209 ...	Accessories	17 / 27
84 210 ...	Indexable insert drilling	3 / 38
84 297 ...	Adapters	16 / 198
84 300 ...	Adapters	16 / 20
84 301 ...	Adapters	16 / 22
84 303 ...	Adapters	16 / 60
84 304 ...	Adapters	16 / 103
84 305 ...	Adapters	16 / 105
84 307 ...	Adapters	16 / 136
84 308 ...	Adapters	16 / 136
84 309 ...	Adapters	16 / 136
84 310 ...	Accessories	17 / 10
84 311 ...	Accessories	17 / 6
84 313 ...	Accessories	17 / 11
84 314 ...	Accessories	17 / 5
84 315 ...	Accessories	17 / 12
84 316 ...	Adapters	16 / 104
84 317 ...	Adapters	16 / 21
84 320 ...	Adapters	16 / 19
84 323 ...	Adapters	16 / 59
84 324 ...	Adapters	16 / 102
84 325 ...	Adapters	16 / 85
84 357 ...	Accessories	17 / 38
84 358 ...	Accessories	17 / 38
84 406 ...	Adapters	16 / 13
84 411 ...	Adapters	16 / 12
84 412 ...	Adapters	16 / 12
84 414 ...	Adapters	16 / 10
84 417 ...	Adapters	16 / 11
84 418 ...	Adapters	16 / 31
84 419 ...	Adapters	16 / 31
84 420 ...	Adapters	16 / 31
84 424 ...	Adapters	16 / 10
84 435 ...	Accessories	17 / 36
84 456 ...	Accessories	17 / 14
84 507 ...	Adapters	16 / 52
84 508 ...	Adapters	16 / 52
84 509 ...	Adapters	16 / 68
84 510 ...	Adapters	16 / 68
84 511 ...	Adapters	16 / 68
84 513 ...	Adapters	16 / 53
84 517 ...	Adapters	16 / 51
84 518 ...	Adapters	16 / 87
84 524 ...	Adapters	16 / 50
84 525 ...	Adapters	16 / 84
84 531 ...	Adapters	16 / 213

Article no.	Designation	Page(s)
84 533 ...	Adapters	16 / 213
84 534 ...	Adapters	16 / 213
84 536 ...	Adapters	16 / 209
84 537 ...	Adapters	16 / 209
84 538 ...	Adapters	16 / 209
84 539 ...	Adapters	16 / 209
84 540 ...	Adapters	16 / 209
84 548 ...	Adapters	16 / 210
84 549 ...	Adapters	16 / 210
84 550 ...	Adapters	16 / 210
84 551 ...	Adapters	16 / 210
84 552 ...	Adapters	16 / 88
84 557 ...	Adapters	16 / 89
84 562 ...	Adapters	16 / 90
84 567 ...	Adapters	16 / 213
84 568 ...	Adapters	16 / 213
84 569 ...	Adapters	16 / 213
84 574 ...	Adapters	16 / 212
84 576 ...	Adapters	16 / 211
84 577 ...	Adapters	16 / 208
84 578 ...	Adapters	16 / 211
84 579 ...	Adapters	16 / 211
84 580 ...	Adapters	16 / 211
84 581 ...	Adapters	16 / 211
84 582 ...	Adapters	16 / 211
84 585 ...	Adapters	16 / 208
84 596 ...	Adapters	16 / 208
84 597 ...	Adapters	16 / 208
84 598 ...	Adapters	16 / 208
84 599 ...	Adapters	16 / 208
84 602 ...	Adapters	16 / 180
84 604 ...	Adapters	16 / 181
84 605 ...	Adapters	16 / 181
84 610 ...	Adapters	16 / 180
84 611 ...	Adapters	16 / 180
84 612 ...	Adapters	16 / 181
84 613 ...	Adapters	16 / 181
84 614 ...	Adapters	16 / 181
84 615 ...	Adapters	16 / 181
84 620 ...	Adapters	16 / 184
84 624 ...	Adapters	16 / 185
84 625 ...	Adapters	16 / 186
84 651 ...	Adapters	16 / 187
84 700 ...	Adapters	16 / 108
84 701 ...	Adapters	16 / 108
84 704 ...	Adapters	16 / 108
84 705 ...	Adapters	16 / 108
84 706 ...	Adapters	16 / 109
84 707 ...	Adapters	16 / 110
84 708 ...	Adapters	16 / 109
84 710 ...	Adapters	16 / 119
84 712 ...	Adapters	16 / 137
84 716 ...	Adapters	16 / 118
84 717 ...	Adapters	16 / 106
84 719 ...	Adapters	16 / 95
84 720 ...	Adapters	16 / 107
84 721 ...	Adapters	16 / 94
84 722 ...	Adapters	16 / 93
84 723 ...	Adapters	16 / 107
84 724 ...	Adapters	16 / 96
84 726 ...	Adapters	16 / 115
84 732 ...	Adapters	16 / 115
84 738 ...	Adapters	16 / 115
84 750 ...	Adapters	16 / 128
84 754 ...	Adapters	16 / 128
84 755 ...	Adapters	16 / 128
84 757 ...	Adapters	16 / 128
84 774 ...	Adapters	16 / 135
84 776 ...	Adapters	16 / 134
84 799 ...	Adapters	16 / 132
85 290 ...	Accessories	17 / 43
85 291 ...	Accessories	17 / 43
85 292 ...	Accessories	17 / 44
85 295 ...	Accessories	17 / 44
85 299 ...	Accessories	17 / 44
85 900 ...	Accessories	17 / 43

Our current valid terms and conditions apply which can be found on our website. Images and prices are valid, subject to corrections due to technical improvements or further developments as well as general mistakes and typographical errors.

YOUR FULL-RANGE FOR THE MACHINING INDUSTRY

The Cutting Tools team is creating a new, leading player in the field of machining technology. In the future, partners and customers will benefit from a highly attractive, holistic service promise: one of the largest ranges on the market. Enormously efficient logistics. Leading expertise in future technologies from digitization to nanotechnology. Deep industry expertise based on many years of experience. All under one roof.



CUTTING SOLUTIONS BY CERATIZIT

Cutting Solutions by CERATIZIT is a leader in the development and manufacturing of industrial solutions and has decades of experience in the manufacture of tungsten carbide tools and inserts.

KOMET

KOMET is a global technology leader in high-precision drilling, reaming and threading. Like other members of the CERATIZIT group, KOMET has also established itself as a manufacturer of high-quality cutting tools by developing innovative products.

WNT

Cutting edge quality tooling for every application from the machine spindle to the machine table: With this impressive range of high quality products combined with industry leading service and outstanding logistical support, WNT always delivers the highest cutting efficiency to the customer.

KLENK

KLENK focuses primarily on the aerospace industry and is a leader in rotary tools for drilling, milling, reaming and countersinking. Many of these products are custom-made for customers worldwide and are predestined for machining CFRP, titanium, aluminum and steel components.

CERATIZIT GROUP